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TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371

ATTORNEY'S DOCKET NUMBER	
9852-2	
U.S. APPLICATION NO. (If known, see 37 CFR 1.5)	

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/AU2009/000685	02 June 2009	02 June 2008

TITLE OF INVENTION
ROOF AND WALL COVER SYSTEM

APPLICANT(S) FOR DO/EO/US
Matthew LENNOX et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☑ This is a **FIRST** submission of items concerning a submission under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a submission under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☐ The US has been elected (Article 31).
5. ☑ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☑ is attached hereto (required only if not communicated by the International Bureau).
   b. ☐ has been communicated by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
   a. ☐ is attached hereto.
   b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☑ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. ☐ are attached hereto (required only if not communicated by the International Bureau).
   b. ☐ have been communicated by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☑ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 20 below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☑ A preliminary amendment.
14. ☑ An Application Data Sheet under 37 CFR 1.76.
15. ☐ A substitute specification.
16. ☐ A power of attorney and/or change of address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13*ter*.3 and 37 CFR 1.821- 1.825.
18. ☐ A second copy of the published International Application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 15 minutes to complete, including gathering information, preparing, and submitting the completed form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)	INTERNATIONAL APPLICATION NO.	ATTORNEY'S DOCKET NUMBER
	PCT/AU2009/000685	9852-2

20. Other items or information:

International Search Report completed 20 July 2009 by the Australian Patent Office

The following fees have been submitted	CALCULATIONS	PTO USE ONLY
21. ☑ Basic national fee (37 CFR 1.492(a)) **$330**	$ 330.00	
22. ☑ Examination fee (37 CFR 1.492(c)) If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4)..... **$0** All other situations..... **$220**	$ 220.00	
23. ☑ Search fee (37 CFR 1.492(b)) If the written opinion of the ISA/US or the International preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4)..... **$0** Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority..... **$100** International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB..... **$430** All other situations..... **$540**	$ 430.00	
TOTAL OF 21, 22 and 23 =	980.00	
☐ Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing in compliance with 37 CFR 1.821(c) or (e) in an electronic medium or computer program listing in an electronic medium) (37 CFR 1.492(j)). The fee is **$270** for each additional 50 sheets of paper or fraction thereof.		

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof (round **up** to a whole number)	RATE	
39 - 100 =	0 /50 =	0	x $**270**	$

Surcharge of **$130.00** for furnishing any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h)).	$	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	$	
Total claims	12 - 20 =	0	x $ **52**	$	
Independent claims	3 - 3 =	0	x **$220**	$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ **$390**	$	
			TOTAL OF ABOVE CALCULATIONS =	$ 980.00	
☑ Applicant claims small entity status. See 37 CFR 1.27. Fees above are reduced by ½.					
			SUBTOTAL =	$ 980.00	
Processing fee of **$130.00** for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i)). +				$	
			TOTAL NATIONAL FEE =	$ 980.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +				$	
			TOTAL FEES ENCLOSED =	$ 980.00	
			Amount to be refunded:	$	
			Amount to be charged	$	

a. ☐ A check in the amount of $ _____ to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of $ _____ to cover the above fees.

c. ☑ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-1437.

d. ☑ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038. The PTO-2038 should only be mailed or faxed to the USPTO. However, when paying the basic national fee, the PTO-2038 may NOT be faxed to the USPTO.

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NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.

SEND ALL CORRESPONDENCE TO:

Joseph W. Bain
Customer No. 85936
Novak Druce + Quigg LLP
525 Okeechobee Blvd.
15th Floor
West Palm Beach, FL 33401
US

/Joseph W. Bain/
SIGNATURE

Joseph W. Bain
NAME

34,290
REGISTRATION NUMBER

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The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9852-2
	Application Number	
Title of Invention	ROOF AND WALL COVER SYSTEM	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Matthew		LENNOX	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Miranda	Country Of Residence[i]	AU
Citizenship under 37 CFR 1.41(b)[i]	AU		

Mailing Address of Applicant:

Address 1	Unit 27		
Address 2	205/213 Port Hacking Road		
City	Miranda, NSW	State/Province	
Postal Code	2228	Country[i]	AU

Applicant 2 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Rodney		BURGE	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Miranda	Country Of Residence[i]	AU
Citizenship under 37 CFR 1.41(b)[i]	AU		

Mailing Address of Applicant:

Address 1	Unit 27		
Address 2	205/213 Port Hacking Road		
City	Miranda, NSW	State/Province	
Postal Code	2228	Country[i]	AU

Applicant 3 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Adam		FARROW	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Miranda	Country Of Residence[i]	AU

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9852-2
	Application Number	
Title of Invention	ROOF AND WALL COVER SYSTEM	

Citizenship under 37 CFR 1.41(b) [i]	AU			
Mailing Address of Applicant:				
Address 1	Unit 27			
Address 2	205/213 Port Hacking Road			
City	Miranda, NSW	**State/Province**		
Postal Code	2228	**Country**[i]	AU	

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	85936		
Email Address	wpbdocket@novakdruce.com	Add Email	Remove Email

Application Information:

Title of the Invention	ROOF AND WALL COVER SYSTEM		
Attorney Docket Number	9852-2	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		**Sub Class (if any)**	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	7	**Suggested Figure for Publication (if any)**	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9852-2
	Application Number	
Title of Invention	ROOF AND WALL COVER SYSTEM	
Customer Number	85936	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	a 371 of international	PCT/AU2009/000685	2009-06-02

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country [i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
2008202416	AU	2008-06-02	(•) Yes ( ) No

Remove

Application Number	Country [i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
2008203409	AU	2008-07-30	(•) Yes ( ) No

Remove

Application Number	Country [i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
2008101060	AU	2008-10-30	(•) Yes ( ) No

Remove

Application Number	Country [i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
2009200232	AU	2009-01-22	(•) Yes ( ) No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1 Remove

If the Assignee is an Organization check here. [X]

Organization Name	Storm Holdings (Aust) Pty Ltd.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9852-2
	Application Number	
Title of Invention	ROOF AND WALL COVER SYSTEM	

Mailing Address Information:			
Address 1	Unit 27		
Address 2	205/213 Port Hacking Road		
City	Miranda, NSW	**State/Province**	
Country [i]	AU	Postal Code	2228
Phone Number		Fax Number	
Email Address			
Additional Assignee Data may be generated within this form by selecting the **Add** button.		Add	

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.					
Signature	/Joseph W. Bain/			Date (YYYY-MM-DD)	2010-12-02
First Name	Joseph	Last Name	Bain	Registration Number	34290

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ROOF AND WALL COVER SYSTEM

The present invention relates to protective covering of roofs and walls of a building and, more particularly, to the covering of damaged or under construction roofs, as well as the covering of walls of buildings.

BACKGROUND

Roofs, as well as walls, are susceptible to damage from high winds, rain or hail. Tiled roofs for example may have a considerable area of tiles either damaged from hail impact, or dislodged completely as the result of high intensity storms. Shingled roofs are liable to be similarly damaged, and even metal sheeted roofs may suffer partial or total removal of one or more sheets. Damage to roofs and walls may also be caused by the impact of falling trees, large branches, or other objects made airborne under high wind conditions.

Storm or impact damage cannot usually be immediately repaired so that to prevent further or potential damage to the interior of the building, temporary covering must be provided. Typically canvas (or similar material) tarpaulins are placed over the damaged part of the roof and secured to the structure by ropes.

One disadvantage of this method of temporary covering is the difficulty of adequately securing a tarpaulin to the

roof or walls so that they remain very vulnerable to dislodgement should high winds prevail or recur and often require continuing attention and adjustment. Moreover, they are heavy and awkward to position, posing occupational health and safety issues. A further disadvantage is that they are expensive to acquire and bulky to store, and if the many roofs are damaged in one storm event, the number of tarpaulins available may be inadequate.

Buildings under construction, particularly timber framed, brick clad dwellings, are frequently constructed in a sequence where the timber frame, including that of the roof, is completed a considerable time before the roof cladding can be added. A disadvantage of this construction technique is that during this period the timber of the structure, which may even include timber or particle board flooring, is liable to deterioration from water and sun. A further disadvantage of this sequence of construction is that, if rain intervenes at the time further internal work is scheduled, the lack of roof covering may cause considerable delay and financial loss.

A system of covering a roof with a film of material for the purpose of preventing damage from wind shear was disclosed in US 2005/0217202. However this US application teaches a method of application of the film from a roll of film hoisted up onto the roof surface, the film being unrolled in situ with overlapping edges of the film being

secured by the application of adhesive tape. Rolls of film are heavy and in practice the manipulation of a roll of film and the edge taping required on even an intact roof surface is extremely difficult, if not dangerous and is completely impractical for application to the roof framing of an uncompleted building.

It is common practice to provide a moisture resistant barrier or wrap to a building structure. Such barriers or building wraps are particularly important for those structures that are constructed of timber framing. It is known to apply a weather resistant wrap over the timber studs of *a* building in order to resist the ingress of moisture. This moisture can cause unwanted structural movement in framework constructed from kiln dried timber.

The material is typically in the form of a flexible plastic film such as polyethylene. Prior art practice for applying building wrap comprises unrolling, measuring and cutting strips of wrap on the ground and then subsequently joining them to form a single sheet for subsequent nailing or stapling across the vertical walls or stud frame of a structure. Because of the slippery nature of the wrap material and difficulties in managing said wrap in windy conditions it is often extremely awkward or even dangerous to work at elevated locations. Also areas of slack or looseness can arise when the preformed sheet is nailed or stapled to the structure. This results in air pockets which

may detract from the insulating and sealing properties of the wrap.

Older buildings frequently included asbestos material for roofing, wall cladding and pipe lagging. Removal of such material, for example during renovations, repair or for health risk reasons, provides hazards from loose asbestos flakes and fibres escaping into the environment.

It is an object of the present invention to address or at least ameliorate some of the above disadvantages.

Notes

1. The term "comprising" (and grammatical variations thereof) is used in this specification in the inclusive sense of "having" or "including", and not in the exclusive sense of "consisting only of".
2. The above discussion of the prior art in the Background of the invention, is not an admission that any information discussed therein is citable prior art or part of the common general knowledge of persons skilled in the art in any country.

BRIEF DESCRIPTION OF INVENTION

Accordingly, in a first broad form of the invention, there is provided a roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an

assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

Preferably, said heat shrinkable film provides a temporary waterproofing of a damaged roof.

Preferably, said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface.

Preferably, said heat shrinkable film forms a permanent heat reflecting layer.

Preferably, said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

Preferably, said mechanical means include a temporary batten affixed under eaves of said roof.

Preferably, said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

Preferably, said heat shrinkable film is a film of low-density polyethylene.

Preferably, said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

In another broad form of the invention, there is provided a method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) attaching a trailing end of said sheet at an edge of said roof structure,

(e) taking a leading edge of said sheet to said opposite edge,

(f) attaching said leading edge of said sheet at said opposite edge,

(g) applying heat with a heat gun to said sheet of heat shrinkable film.

Preferably, said roof structure comprises an existing roof damaged through wind shear or impact.

Preferably, said roof structure comprises unclad roof framing of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under outer ends of rafters of said roof structure.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under eaves of said roof structure; portions of each said trailing edge said leading edge wrapped around a said batten.

Preferably, said method further includes the step of:

(a) securing an outer edge of a side of said sheet of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure.

In another broad form of the invention, there is provided a vented roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet prepared with at least one vent element so as to allow communication between volumes of air within a roof space under said sheet and air above said sheet.

Preferably, said vent comprises a base portion and a flexible flap adapted to cover an aperture in said base portion so as to prevent ingress of rain water.

Preferably, said base portion is proved with an adhesive layer; said adhesive layer exposed by removal of a peel-off protective cover layer; said vent affixed over an aperture prepared in said sheet.

Preferably, said sheet is positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

Preferably, said heat shrinkable film provides a temporary waterproofing of a damaged roof.

Preferably, said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface.

Preferably, said heat shrinkable film forms a permanent heat reflecting layer.

Preferably, said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

Preferably, said mechanical means include a temporary batten affixed under eaves of said roof.

Preferably, said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

Preferably, said heat shrinkable film is a film of low-density polyethylene.

Preferably, said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

In still another broad form of the invention, there is provided a method of preparing a sheet of heat shrinkable material for protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) cutting at least one aperture into said sheet of material,

(e) affixing a vent over said aperture so as to allow communication between air volumes above and below said sheet of material.

Preferably, said method includes the further steps of:

(a) attaching a trailing end of said sheet at an edge of said roof structure,

(b) taking a leading edge of said sheet to said opposite edge,

(c) attaching said leading edge of said sheet at said opposite edge,

(d) applying heat with a heat gun to said sheet of heat shrinkable film.

Preferably, said roof structure comprises an existing roof damaged through wind shear or impact.

Preferably, said roof structure comprises unclad roof framing of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under outer ends of rafters of said roof structure.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under eaves of said roof structure; portions of each said trailing edge said leading edge wrapped around a said batten.

Preferably, said method further includes the step of:

(a) securing an outer edge of a side of said sheet of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure.

In still another broad form of the invention, there is

provided a method of applying a moisture proof building wrap to a structure is disclosed, said method including the steps of:

- procuring a roll of building wrap in the form of a heat shrinkable plastic film,
- attaching a free edge *of* said film to an inside perimeter edge of said structure and disposing an opposite leading edge of said film horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands of said film for fixing thereto, and
- applying heat to said bands to shrink the film tight against said structure.

Preferably a plurality of horizontal bands of film are applied in overlapping fashion to entirely cover said structure.

Preferably, the joints between said horizontal bands are sealed with tape.

Preferably, said heat is applied to the corner perimeters and top and bottom plate areas to shrink the film into sealing engagement with said structure.

Preferably, said bands are overlapped by about 300 mm.

Preferably, the film is then cut as required to accommodate wall penetrations such as windows and doors.

It is further preferred to cut around said wall penetrations allowing a minimum of 300 mm rise therearound and to subsequently apply additional heat to ensure film shrinkage back for a moisture tight seal against said structure.

It is further preferred to use a 150 mm low density polyethylene film which contains fife retardant, reflective film, shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners. One film that ~acurrently used is known under the brand name "Buildseal" and produced by Optimum Metallising Pity Ltd of Kings Park NSW.

BRIEF DESCRIPTION OF DRAWINGS

Embodiments of the present invention will now be described with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a portion of a building of which the roof has sustained damage,

Figure 2 is a side sectioned view of a portion of a building and existing roof structure to which has been applied a roof cover system according to the invention,

Figure 3 is a side sectioned view of a portion of a partly completed building showing the application of a roof cover system of the invention to unclad roof framing,

Figure 4 is a further side sectioned view of the building of Figure 3 showing the roof cover system of the invention functioning as a permanent sarking layer,

Figure 5 is an illustration of the preparation of a sheet of heat shrinkable material prepared on a ground surface as an assembly of lengths of material taken from a roll of film,

Figure 6 is a perspective view of a portion of heat shrinkable material in position over a section of roof in which the sheets of material were prior prepared with air vents,

Figure 6a is a perspective view of one preferred embodiment of the air vents of Figure 6.

Figure 7 shows a schematic perspective view of an impact or storm damaged wall of a building, and

Figure 8 shows a schematic perspective view of a timber stud structure undergoing construction or renovation.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The roof cover system of the present invention provides for a system and method for covering a damaged or uncompleted roof of a building. The system uses a heat

shrinkable film, preferably a low-density polyethylene containing shrinking resins, UV inhibitors, anti brittling compounds and strengtheners for tear resistance. The film is preferably between 0.6 and 0.7mm in thickness and is provided in rolls of various widths and lengths. In at least one preferred form of the film, it is provided with a heat reflective surface.

First Preferred Embodiment

With reference now to Figure 1, typical damage to a tiled roof 10 of a building 12 may include the loss of a number of tiles 12 due to a high wind shear event, leaving the building 14 open to the ingress of water. Water ingress may also occur if tiles are cracked for example from heavy hail impact or falling trees or branches. Emergency temporary repair is provided by the roof cover system of the invention by applying the above described film over that portion of the roof which has sustained damage.

If required, sharp edges protruding from the roof surface may first be covered with suitable wadding and adhesive tape to prevent possible tearing of the film during application.

The extent of roof to be covered is measured and the most suitable available width roll of the heat shrinkable film selected. Film is cut to one or more lengths sufficient to extend from one edge of the roof to an opposite edge. With reference to Figure 2, a trailing edge

of a length of film is mechanically attached at the first edge 16 of the roof 10. In one preferred method as shown in Figure 2, the trailing edge 15 of the film 18 is wrapped once around a length of batten 18, preferably as long as the width of the film, and the batten 20 mechanically fixed to the underside 22 of the eaves 24 at the first edge of the roof 10.

The leading edge is now passed over the roof to the opposite edge (not shown) of the roof and the leading edge secured to the opposite side eaves in similar manner to that already described. If the outer side edge of the length of film adjoins an edge of the roof, this may be similarly secured under the eaves along that side of the roof. Alternatively, the leading edge may be secured to the barge or fascia boards.

Heat is now applied to the film at the underside of the eaves 24 with a heat gun (not shown) to cause the film 18 to shrink securely around the batten and the undersides of the eaves. The heat gun, now attached to an extension arm (not shown), is then used to apply heat to the entire length of film 18 stretched over the roof surface, causing it to tightly conform to the surface and covering missing or cracked tiles 12.

If the extent of the damage requires, successive lengths of film can be applied side by side with an overlap

of preferably 300mm. Heat is applied along these overlaps to seal the edges of the adjoining lengths together.

Valley areas and other discontinuities in the roof surface can be accommodated by cutting film to suit the are involve and heat sealing to adjoining film length edges. Vertical roof penetrations, such as chimney stacks ventilators and the like, are sealed by preferably a 300mm rise of film. Edges of riser sections of film can be taped or cable-tied to the penetration.

By the above means, a damaged roof can be rapidly and securely covered to prevent water ingress and damage to the inside of the building. Unlike tarpaulins which are difficult to secure an remain liable to dislodgement in high winds, the heat shrinkable film by conforming closely to the roof surface, provides a secure seal over the damage until permanent repairs can be made.

Second Preferred Embodiment

In a second preferred embodiment of the invention, a damaged section of a roof to be temporarily protected prior to permanent repair, is again covered by a heat shrinkable film. In this embodiment however, the method of application is different.

Instead of attempting to apply individual lengths of film, attaching a length at a first end to the eaves at one side of the roof, stretching the length over the roof to be attached at the eaves at the opposite side, and taping the

edges of adjoining lengths of film together, the method of this embodiment, with reference to Figure 5 is as follows:

(a) the location of the damaged section 12 of roof 10 is assessed in relation to the nearest opposing edges of the roof,

(b) the length of film required to extend between the opposing roof edges is estimated, allowing for overhang and fixing requirements,

(c) the width of the damaged area is ascertained and the number of lengths of the available film required to cover and overlap the damaged area determined,

(d) the number of lengths of material 18 is then cut from a roll 40 of the film and laid out side by side on the ground,

(e) while on the ground, adjoining edges of the lengths of film are taped to form a waterproof assembled sheet of heat shrinkable film, sufficient to stretch from one roof edge to the opposite roof edges and of sufficient width to cover the damaged area.

This assembled sheet is now pulled up onto the roof, positioned so as to cover the damaged area and outer ends fastened in similar manner as previously described above.

An advantage of this method is that there is no need to lift a relatively heavy roll of heat shrinkable material

onto the roof and unroll it one what may be quite steep surfaces. Moreover it has been found in practice that the arrangement described in the first preferred embodiment above of taping the edges of adjoining lengths of the material together on the roof is both difficult and dangerous. This is especially so if the damage to the roof is extensive and perhaps been rendered structurally unsafe. The method of the present described embodiment minimises activity on the roof surface, requiring only that one edge of the sheet of material be carried over the roof from a first edge to an opposite edge.

Third Preferred Embodiment

In a third preferred embodiment of the invention, a heat shrinkable film may be applied to the roof framing of an uncompleted building. In this embodiment as shown in Figure 3, the heat shrinkable film 18 is applied after the roof framing is complete but preferably prior to the attachment of facia boards.

In this embodiment also, lengths of film are prepared from suitable width rolls sufficient to stretch from one side of the roof to an opposite side. In this case the trailing and leading edges of the length of film are preferably attached by means of battens 20 fixed to the underside of the outer ends 26 of rafters 28, that is

between the outer ends of the rafters 28 and the wall frame 30.

The heat shrinkable film 18 in this embodiment, is provided with a heat reflecting upper surface 32 so that the film 18 forms a permanent sarking layer beneath the roofing cladding, either tiles 34, as shown in Figure 4, or metal sheeting. Thus in this embodiment the heat shrinkable film of the invention act both to protect the timberwork of a building under construction and provides a replacement for conventional reflective sarking.

The weatherproof nature of the heat shrinkable material applied in this way provides for internal work on the building to continue in the event of inclement weather, thus increasing productivity and economy of construction.

It will be understood that the method of application described in the second preferred embodiment above is also, indeed perhaps even more so, applicable to the present embodiment. In this case manipulating a roll of material and taping edges of lengths of material together over the open framework of the roof of a building under construction is even more difficult so that assembly on the ground, perhaps into a number of sheets, prior to placement over the roof framing, is clearly advantageous.

In each of the above described embodiments, the sheet of material may be further prepared, as shown in Figure 6, by adding a distribution of air vents 100 at various locations

in each of the strips 18. Preferably, the vents 100, as shown in Figures 6 and 6A, take the form of one-way covers or flaps 110 which are affixed over an aperture 112 cut into the strips of film 18 at the desired location. The flaps 110 are so arranged as to prevent the ingress of rainwater while allowing the passage of air.

In one preferred form the vent 100 is pre-formed of low density polyethylene and provided with a self adhesive base 114. To apply the vent 100 after the aperture has been prepared, a protective cover 116 is peeled off the adhesive layer of base 114 and the vent 100 pressed into position.

These vents allow the exhalation of air from underneath the sheet of material, either as a result of higher air pressure arising within the roof space, for example through rising warm air or through the ingress of wind, or due to negative pressure above the sheet material.

Fourth Preferred Embodiment

Referring first to figure 7 there is a cladded structure indicated generally as 1 with an area 2 of impact or storm damage in side wall 3. In accordance with the invention the structure is wrapped as defined above with horizontal bands 4 of a heat shrinkable polyethylene film. The bands preferably overlap by about 300 mm and are heated at the corner perimeters 4A and top and bottom plate areas 4D and 4C preferably using a hand held LPG heat gun or the like. The film then shrinks and seals tight against the building

and also against itself along the overlapping joints 4D to exclude weather and moisture. Although not shown in the drawings a substructure batten type frame with diagonal bracing is preferably built over the damaged area 2 before the film is applied.

With the timber stud structure 5 of figure 8 the building wrap is applied directly over the studs 6 in horizontal bands 1900 mm wide in a similar fashion to figure 1. While only the lower band 7 is shown adjacent the bottom plate 8 subsequent bands are applied as described earlier *in* overlapping fashion up to the top plate 9. Heat is then applied to the perimeter corners 10 and top and bottom plate areas to shrink the film to seal against itself along taped overlapping joints and also against the structure.

Preferably the film is provided with an outer reflective surface so as to also provide thermal insulation and a cost effective replacement for conventional wall sarking and insulation.

With both structures as mentioned earlier the film is cut after wrapping to accommodate doors, windows and other penetrations.

Other uses, benefits and advantages will become apparent from the following summary and preferred methodology for the invention.

CURRENTLY PREFERRED METHODOLOGY

- Select the correct width roll as it is important to have the least amount of welds in the sealing process.
- Site measure the area which to be sealed.
- Ensure any sharp object are padded.
- Attach one side of the shrink wrap to the inside edge of perimeter stud work. Securely fix by a continuous batten.
- Take the leading edge of the said film across to the Opposite the structure.
- Securely fix off the opposite side by continuous batten.
- Apply heat to the film wrapped stud in a continuous even pattern with a similar motion of a spray paint gun.
- Allow time for the film to shrink on to itself.
- Repeat this process to all vertical wall surfaces.
- Now using the heat gun extension tool apply an even continuous heat to the entirety of the vertical wall surface allowing enough passes for the shrink wrap to contract.
- Continue this process with overlapped joints of 300mm until the structure is covered entirely.
- For wall penetrations such as windows and doors cut the plastic as required.

- Allow to cut around alt wail penetrations allowing a minimum of 300mm rise around all penetrations. Apply heat to ensure the film shrinks back onto the sub structure allowing a watertight seal.
- Ensure all edges are sealed.
- Continuously check for burn holes and patch as required.
- For vertical impact damaged areas a sub structure frame will be required for the shrink wrap to be applied over. This is a simple batten type frame with diagonal bracing securely fixed to the structure.

USES

- Wall insulation and draught elimination.
- Asbestos removal and disposal.
- All weather protection during construction to eliminate lost time.
- Cost effective weather seal for storm Impact damaged buildings and or structures on vertical surfaces.
- Replacement/substitution for Vertical tarpaulins installations.
- Vertical timber framework protection during construction.

BENEFITS

- Cost effective replacement for wall sarking/

insulation. Reflective surface provides excellent thermal qualities.

- Provides excellent thermal insulation on walls.
- Ensures kiln dried structural framework is not exposed to weather conditions eliminating structural movement.
- Provides a dust free environment when removing asbestos.
- Reduces residual cost and time during re construction of storm Impact damaged buildings and or structures.
- Eliminates inclement weather days after main structure is in place therefore assisting productivity.
- No ongoing hire cost as is for tarpaulins.
- Eliminates the need to re attend sites to secure tarpaulins during the reconstruction process.

The above describes only some embodiments of the present invention and modifications, obvious to those skilled in the art, can be made thereto without departing from the scope of the present invention.

CLAIMS

1. A roof cover of a damaged or uncompleted building; said cover including a film of heat shrinkable material stretched over a damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface.
2. The roof cover of claim 1 wherein said heat shrinkable film provides a temporary waterproofing of a damaged roof.
3. The roof cover of claim 1 wherein said heat shrinkable film provides a temporary or permanent waterproofing of an unclad roof of a building under construction.
4. The roof cover of claim 1 wherein said heat shrinkable film is provided with a heat reflecting surface.
5. The roof cover of claim 4 wherein said heat shrinkable film forms a permanent layer; said layer excluding inclement weather from said building under construction.
6. The roof cover of claim 4 wherein said heat shrinkable film is retained as a permanent heat reflecting layer under subsequently applied permanent roof cladding.
7. The roof cover of any one of claims 3 to 6 wherein said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

8. The roof cover of claim 7 wherein said mechanical means include a temporary batten affixed under eaves of said roof framing.

9. The roof cover of any one of claims 1 to 8 wherein said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

10. The roof cover of any one of claims 1 to 9 wherein said heat shrinkable film is a film of low-density polyethylene.

11. The roof cover of claim 10 wherein said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

12. The roof cover of any one of claims 1 to 11 wherein said sheet is prepared with at least one vent element so as to allow communication between volumes of air within a roof space under said sheet and air above said sheet.

13. The roof cover of claim 12 wherein said vent comprises a base portion and a flexible flap adapted to cover an aperture in said base portion so as to prevent ingress of rain water.

14. The roof cover of claim 12 or 13 wherein said base portion is proved with an adhesive layer; said adhesive layer exposed by removal of a peel-off protective cover layer; said vent affixed over an aperture prepared in said sheet.

15. A method of preparing a sheet of heat shrinkable material for protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) positioning said sheet of material over an area of roof to be covered,

(e) affixing said sheet by mechanical means.

16. The method of claim 15 wherein said method includes the further steps:

(a) of cutting at least one aperture into said sheet of material,

(b) affixing a vent over said aperture so as to allow communication between air volumes above and below said sheet of material.

17. The method of claim 15 wherein said method includes the further steps of:

(a) attaching a trailing end of said sheet at an edge of said roof structure,

(b) taking a leading edge of said sheet to said opposite edge,

(c) attaching said leading edge of said sheet at said opposite edge,

(d) applying heat with a heat gun to said sheet of heat shrinkable film.

18. The method of claim 15 wherein said roof structure comprises an existing roof damaged through wind shear or impact.

19. The method of claim 15 wherein said roof structure comprises unclad roof framing of a building under construction.

20. The method of claim 16 wherein said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

21. A damaged or uncompleted roof cover system; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

22. A damaged or uncompleted roof cover system; said cover system including a heat shrinkable film stretched over a said damaged or uncompleted roof; said film brought into conformity with surfaces of said roof through application of heat.

23. A method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a length of said film from said roll sufficient to extend from one edge of said roof structure to an opposite edge,

(c) attaching a trailing end of said length at an edge of said roof structure,

(d) taking a leading edge of said length to said opposite edge,

(e) attaching said leading end of said length at said opposite edge,applying heat with a heat gun to said length of heat shrinkable film.

24. A method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to

an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) attaching a trailing end of said sheet at an edge of said roof structure,

(e) taking a leading edge of said sheet to said opposite edge,

(f) attaching said leading edge of said sheet at said opposite edge,

(g) applying heat with a heat gun to said sheet of heat shrinkable film.

25. A method of applying a moisture proof building wrap to a structure; said method including the steps of:

(a) procuring a roll of building wrap in the form of a heat shrinkable plastic film,

(b) attaching a free edge of said film to an inside perimeter edge of said structure and disposing an opposite leading edge of said film horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands of said film for fixing thereto,

(c) applying heat to said bands to shrink said film

tight against said structure.

26. The method as claimed in claim 25 and including the further step of cutting the film to accommodate doors, windows and other penetrations.

27. The method as claimed in claim 25 wherein a plurality of bands of said film with taped overlapping joints are formed on said structure.

28. The method as claimed in claim 27 wherein said heat is applied to the perimeter corners and top and bottom plate areas of said structure.

29. The method as claimed in claim 25 wherein said building wrap is a heat shrinkable polyethylene film.

ABSTRACT

A covering of a damaged or uncompleted building; the covering including a film of heat shrinkable material stretched over damaged or uncompleted portions of the building; the film formed as a sheet comprising an assembly of lengths of the heat shrinkable material applied to surfaces of the building.

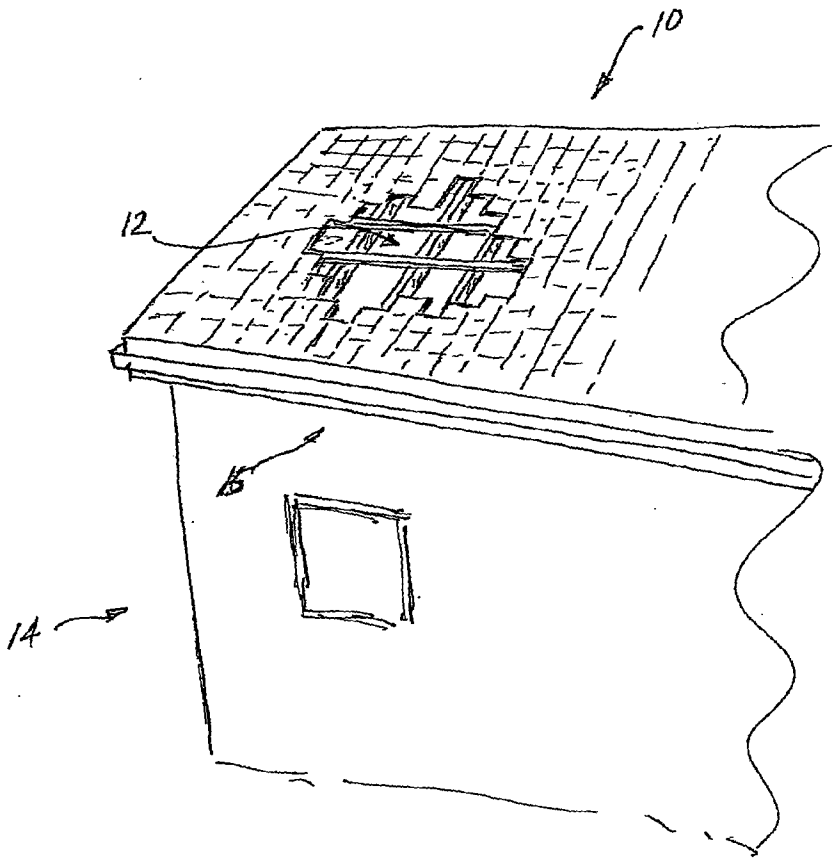


Fig. 1

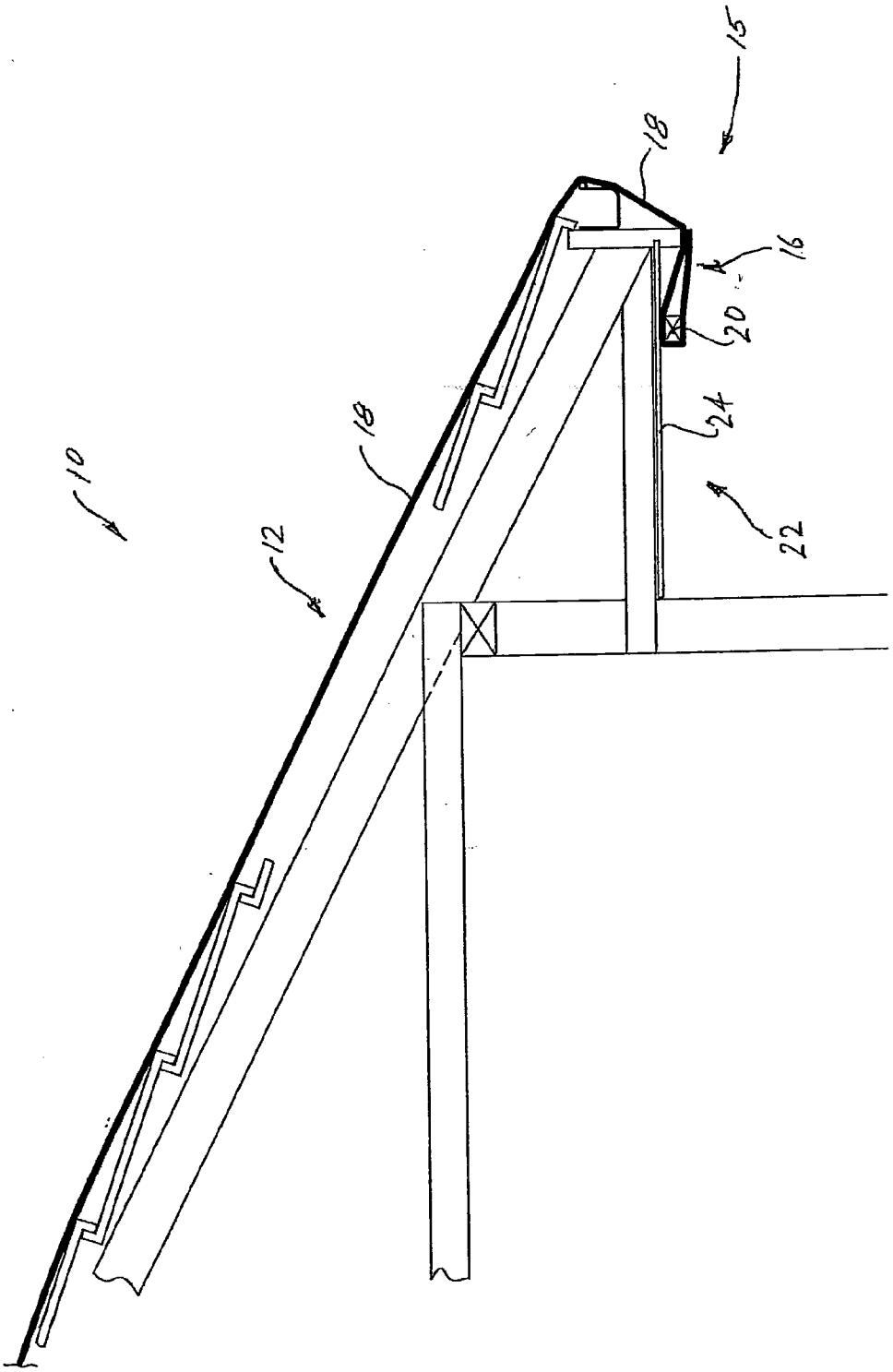


Fig. 2

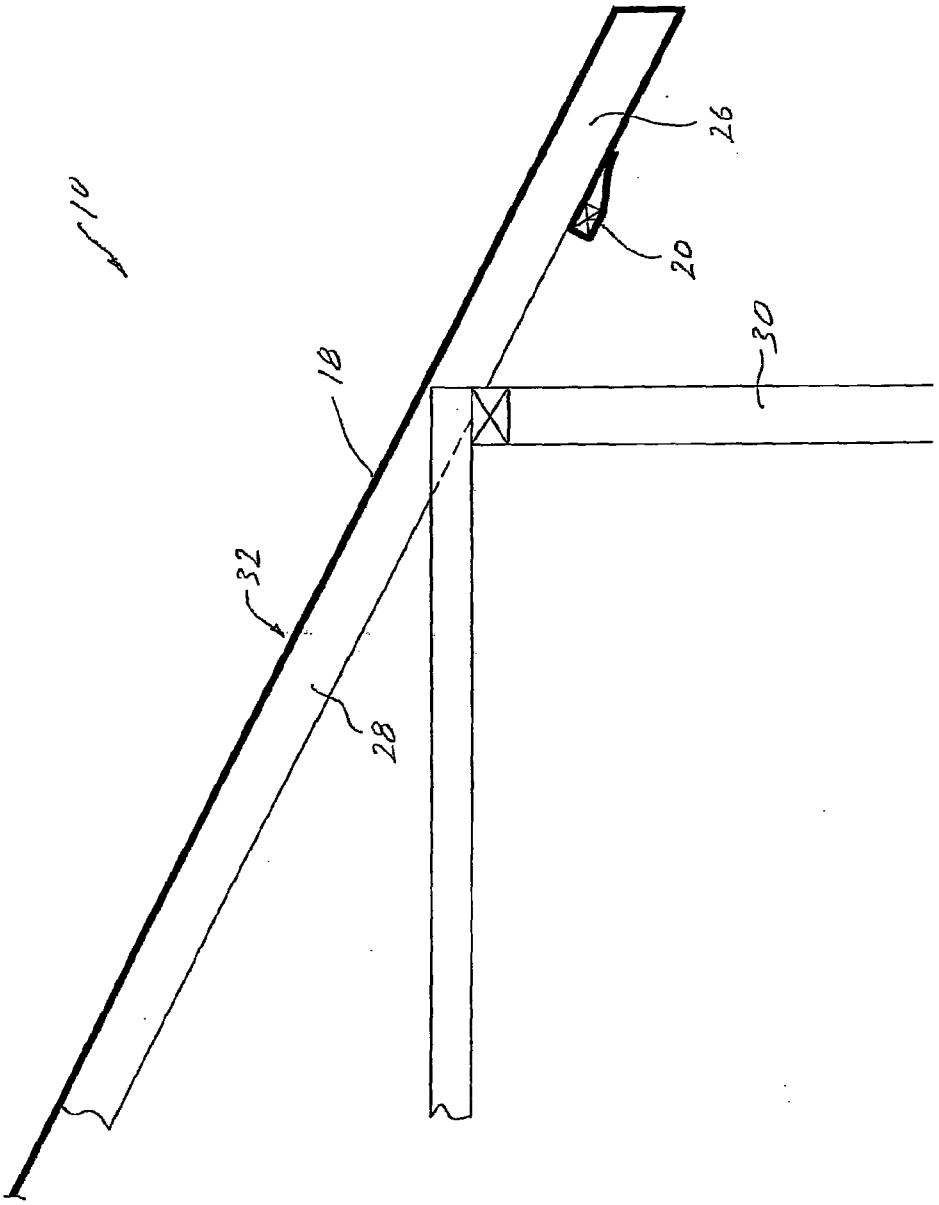


Fig. 3

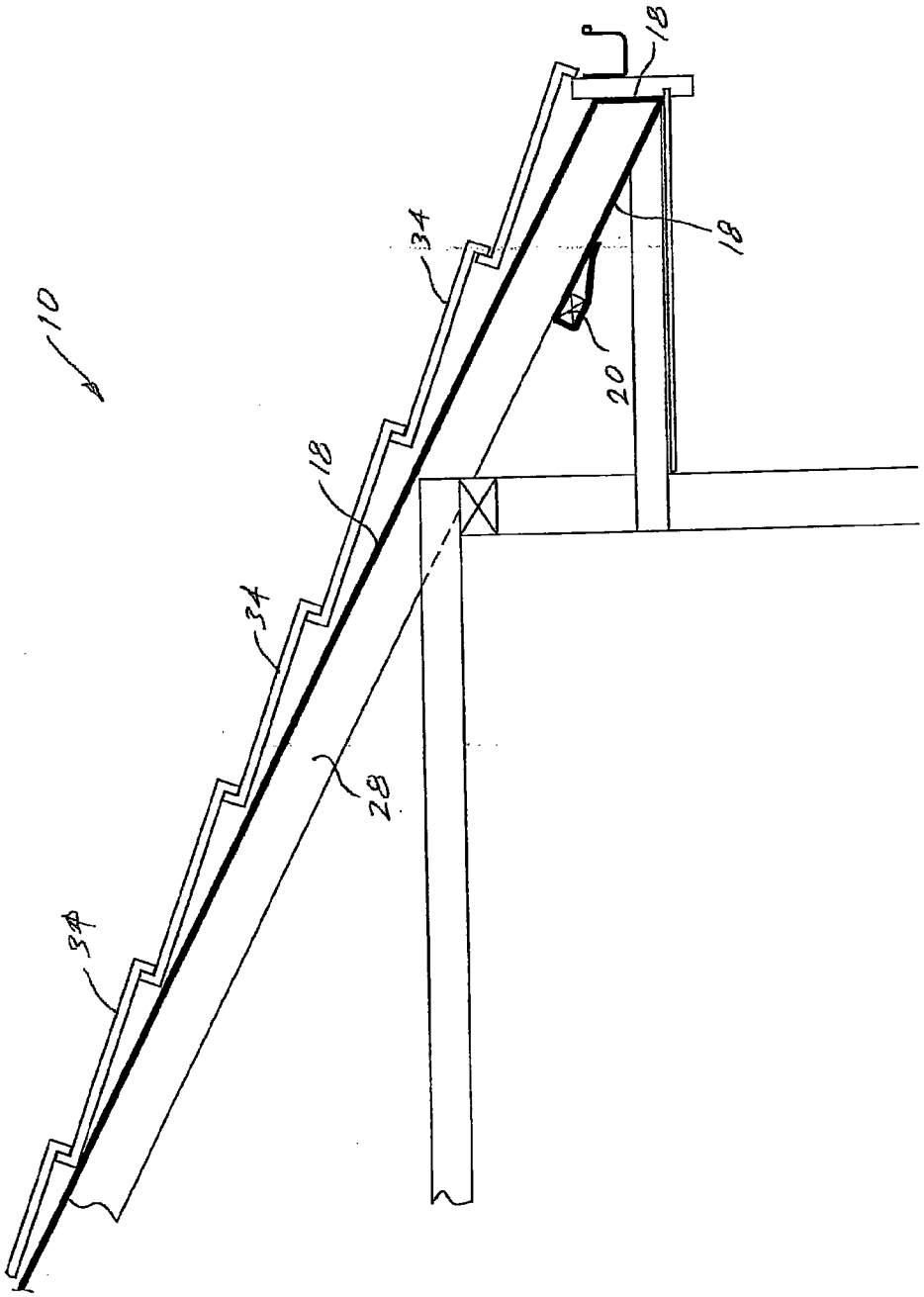


Fig. 4

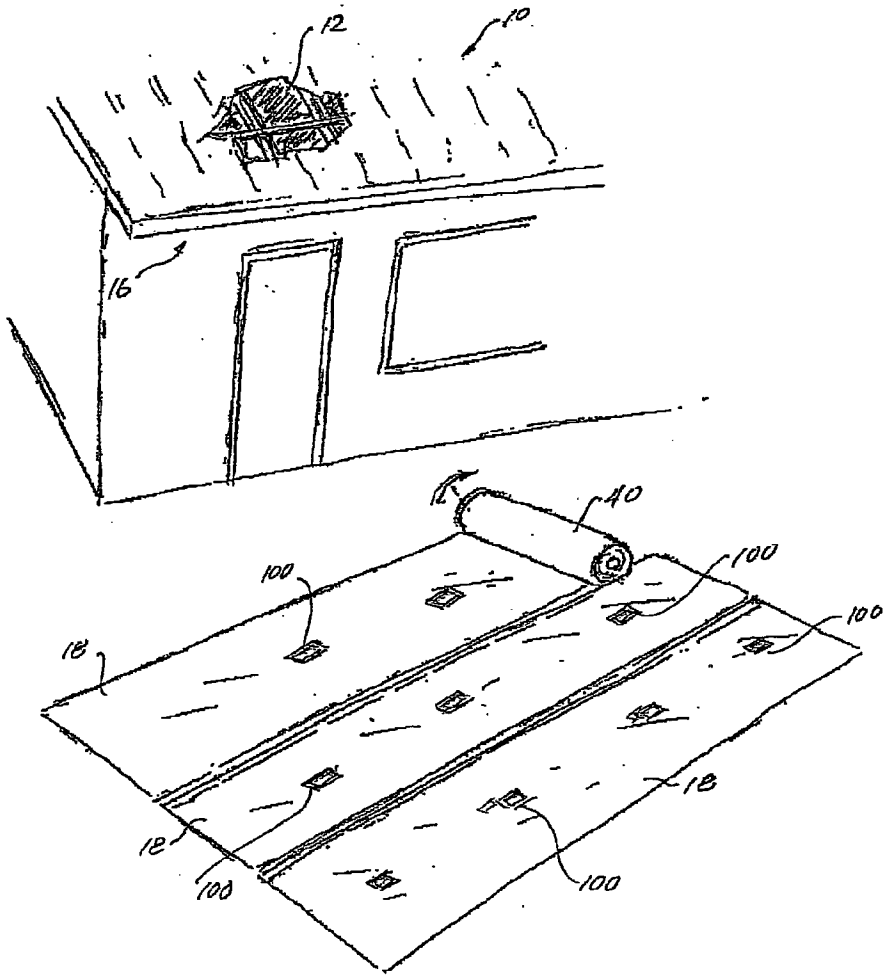


Fig. 5

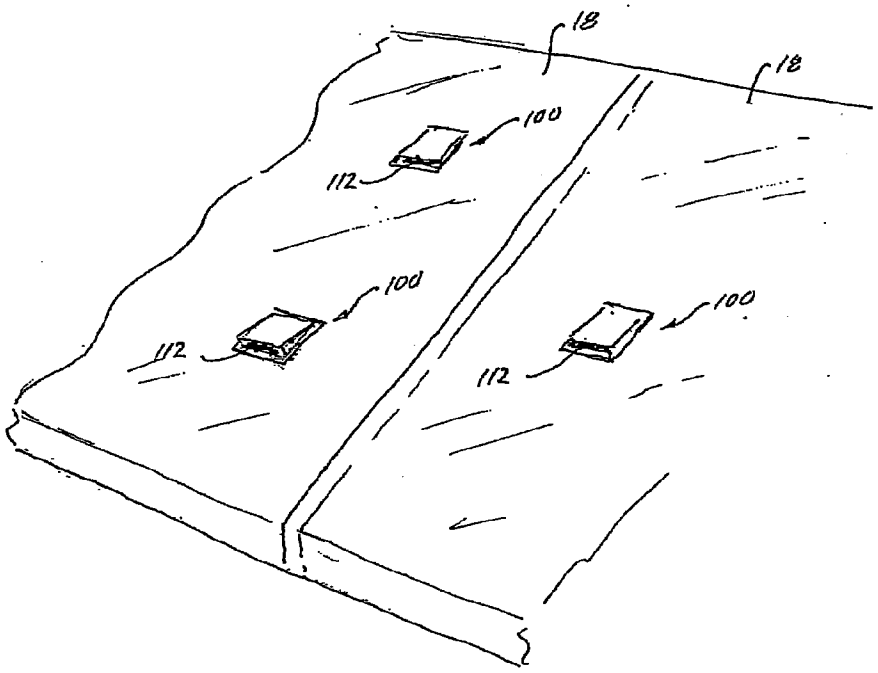


Fig. 6

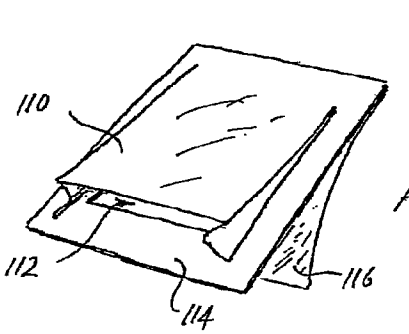


Fig. 6A

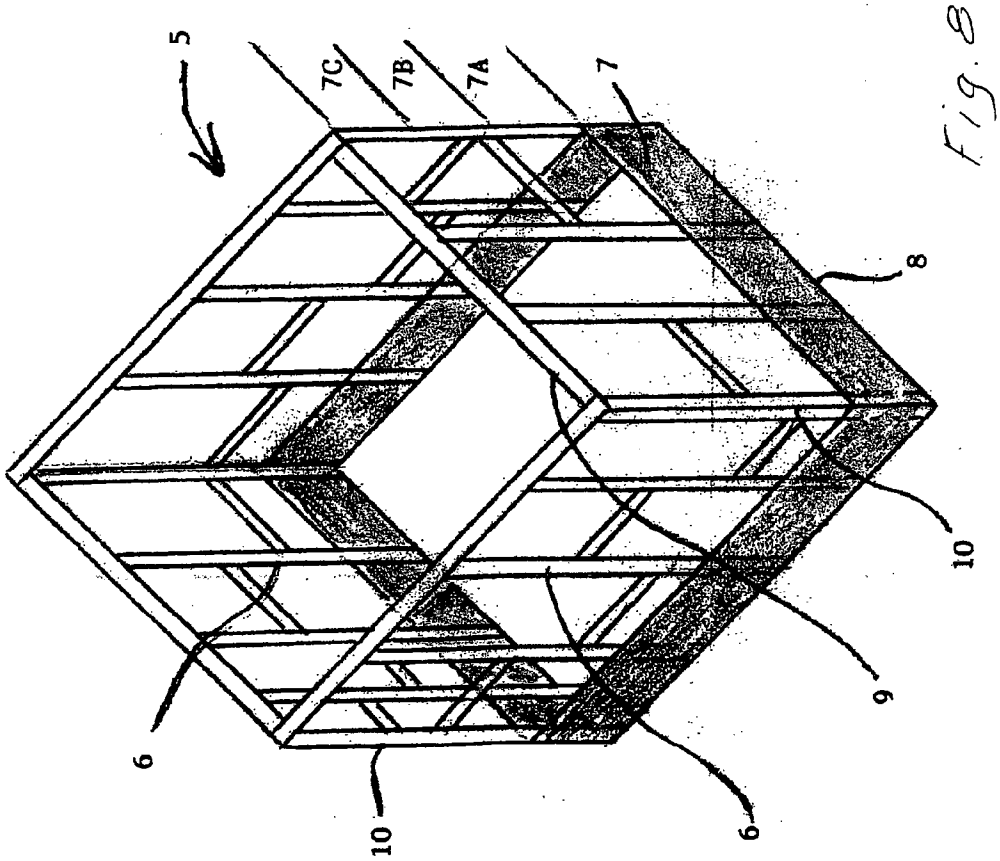


Fig. 8

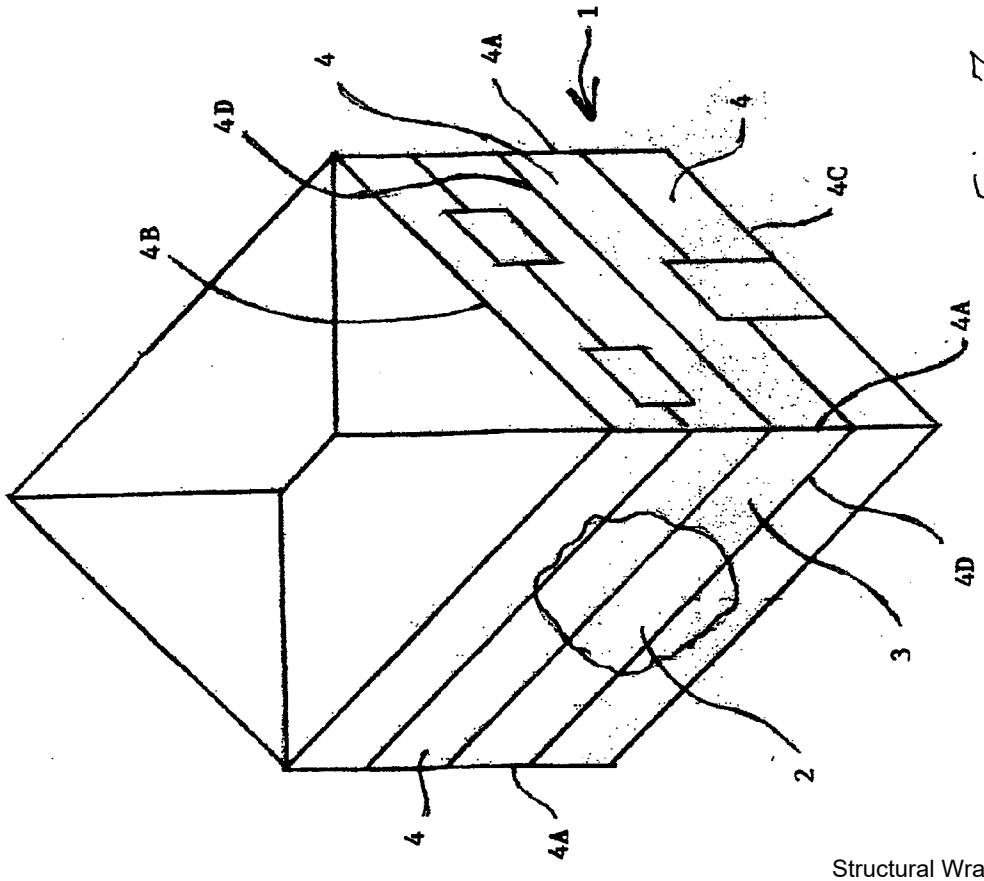


Fig. 7

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of Matthew LENNOX et al.

Application No.	Not Yet Assigned	Group:	Not Yet Assigned
Filing Date:		Examiner:	Not Yet Assigned
Docket No.	9852-2		

For: ROOF AND WALL COVER SYSTEM

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Prior to examination on the merits, please amend the above-identified application as follows:

Amendments to the Specification begin on page 2.

Amendments to the Claims begin on page 3.

Remarks begin on page 6.

AMENDMENTS TO THE SPECIFICATION

Page 1, before the first paragraph, insert the following section heading and text:

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a §371 national phase entry of International Application No. PCT/AU2009/000685, filed June 2, 2009, which claims priority to Australian Patent Application No. 2008202416, filed June 2, 2008, Australian Patent Application No. 2008203409, filed July 30, 2008, Australian Patent Application No. 2008101060, filed October 30, 2008, and Australian Patent Application No. 2009200232, filed January 22, 2009, the entire contents of which are incorporated herein by reference.

Structural Wrap Exhibit 1014, Page 50
Structural Wrap v Stormseal, IPR2024-00084

AMENDMENTS TO THE CLAIMS

Cancel claims 1 - 29 and add new claims 30 - 41 as set forth below. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1 – 29 (Canceled)

30. (New). A method of covering an opening in a roof structure to protect from water ingress, said method comprising the steps of:

(a) selecting a roll of heat shrinkable film;

(b) cutting a required number of lengths of said film from said roll; said lengths being sufficient to extend from an edge of said opening to an opposite edge of said opening;

(c) assembling said lengths of heat shrinkable film into a sheet of material;

(d) positioning said sheet of material over said opening;

(e) affixing said sheet by mechanical means; and

(f) applying heat to said sheet so as to produce heat shrinkage.

31. (New). The method of claim 30 wherein said method comprises the further steps of:

(a) cutting at least one aperture into said sheet of material,

(b) affixing a vent over said aperture so as to allow communication between air volumes above and below said sheet of material.

32. (New). The method of claim 30 wherein said method comprises the further steps of:

(a) attaching a trailing end of said sheet at an edge of said roof structure,

(b) taking a leading edge of said sheet to said opposite edge,

(c) attaching said leading edge of said sheet at said opposite edge,

(d) applying heat with a heat gun to said sheet of heat shrinkable film.

33. (New). The method of claim 30 wherein said roof structure comprises an existing roof damaged through wind shear or impact.

34. (New). The method of claim 30 wherein said roof structure comprises unclad roof framing of a building under construction.

35. (New). The method of claim 34 wherein said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

36. (New). A method of protecting a roof structure from water ingress; said method comprising the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a length of said film from said roll sufficient to extend from one edge of said roof structure to an opposite edge,

(c) attaching a trailing end of said length at an edge of said roof structure,

(d) taking a leading edge of said length to said opposite edge,

(e) attaching said leading end of said length at said opposite edge,

(f) applying heat to said length of heat shrinkable film so as to produce heat shrinkage.

37. (New). A method of applying a moisture proof building wrap to a structure; said method comprising the steps of:

(a) providing a roll of heat shrinkable plastic film,

(b) attaching a free edge of said film to an inside perimeter edge of said structure and disposing an opposite leading edge of said film horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands of said film for fixing thereto,

(c) applying heat to said bands to shrink said film tight against said structure.

38. (New). The method as claimed in claim 37 and comprising the further step of cutting the film to accommodate doors, windows and other penetrations.

39. (New). The method as claimed in claim 37 wherein a plurality of bands of said film with taped overlapping joints are formed on said structure.

40. (New). The method as claimed in claim 37 wherein said heat is applied to the perimeter corners and top and bottom plate areas of said structure.

41. (New). The method as claimed in claim 37 wherein said building wrap is a heat shrinkable polyethylene film.

REMARKS

The specification has been amended to include the appropriate priority data and section headings. The claims have been amended to conform to standard U.S. practice. No new matter is added by virtue of these amendments and their entry is respectfully requested.

Although no fee is believed to be due, the Commissioner is hereby authorized to charge any underpayment to Deposit Account No. 14-1437.

Respectfully submitted,

NOVAK DRUCE + QUIGG LLP

Date: December 2, 2010

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
095009		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/AU2009/000685	2 June 2009	2 June 2008

Applicant

CASE FILE MANAGEMENT SYSTEMS PTY LTD et al

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language,** the international search was carried out on the basis of:

☒ The international application in the language in which it was filed.

☐ A translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II).

3. ☒ **Unity of invention is lacking** (See Box No. III).

4. With regard to the **title,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings,**

a. the figure of the **drawings** to be published with the abstract is Figure No. **5**

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2009/000685

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

E04D 5/06 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPODOC, WPI: E04G, E04B, E04F13/-, E04D and Keywords shrink or shrunk, heat or thermo or thermal, cover or protect, wrap or web or film or sheet or membrane or layer or barrier, assemble or form, ground, flashing, damaged, sarking

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 4769962 A (POHL ET AL) 13 September 1988 See figures 1 and 5 and column 3/lines 9-20, column 3/lines 43-50	1-14, 21, 22 4, 11
X	US 2005/0217202 A1 (CROOK) 6 October 2005 See figures 1-4 and paragraph 7, 8 and 25	1-14, 21-23, 25
Y		15, 24
Y	US 6797218 B1 (BICKERSTAFF) 28 September 2004 See the figures and lines 52-55/column 1, column 5/claim 1	4, 11, 15, 24
A	AU 199466002 A1 (Patent No. 655571)(CSR LIMITED) 22 December 1994	

☐ Further documents are listed in the continuation of Box C ☒ See patent family annex

*. Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 July 2009	31 JUL 2009
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. +61 2 6283 7999	Authorized officer **OWEN ANDREWS** AUSTRALIAN PATENT OFFICE (ISO 9001 Quality Certified Service) Telephone No : +61 2 6283 2885

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please see Supplemental Box 1

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Supplemental Box 1
(To be used when the space in any of Boxes I to IV is not sufficient)

Continuation of Box No: III

This International Application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept.

In assessing whether there is more than one invention claimed, I have given consideration to those features which can be considered to potentially distinguish the claimed combination of features from the prior art. Where different claims have different distinguishing features they define different inventions.

This International Searching Authority has found that there are different inventions as follows:

- Claims 1-14, 21, 22 are directed to a roof cover including a film of heat shrinkable material stretched over a damaged or uncompleted roof. It is considered that stretching a film of heat shrinkable material over a damaged or uncompleted roof comprises a first distinguishing feature.

- Claims 15-20, 24 are directed to a method of preparing a sheet of heat shrinkable material for protecting a roof structure including selecting a roll of heat shrink film, cutting a number of lengths, assembling lengths on the ground, positioning the assembled sheet over an area to be covered, affixing the sheet. It is considered that method of pre-assembling the sheets before applying to the roof structure comprises a second distinguishing feature.

- Claim 23 is directed to a method of protecting a roof structure including selecting a roll of heat shrinkable film, cutting a length of film, attaching a trailing edge, taking a leading edge to the opposite edge of the roof structure, attaching the leading edge to the opposite edge of the roof structure and applying heat to the film. It is considered that the method of placing the sheets on the roof structure comprises a third distinguishing feature.

- Claim 25-29 is directed to a method of applying a moisture proof building wrap to a structure including the steps of procuring a roll of heat shrinkable film, attaching an edge of the film to the structure and disposing an opposite leading edge horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands and applying heat to the film. It is considered that the method of applying a horizontal band to a structure comprises a fourth distinguishing feature.

PCT Rule 13.2, first sentence, states that unity of invention is only fulfilled when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding special technical features. PCT Rule 13.2, second sentence, defines a special technical feature as a feature which makes a contribution over the prior art. The only feature common to all of the claims is heat shrinkable film. However this concept is not novel in the light of:

US 4769962 A1 (POHL ET AL) 13 September 1988.

This means that the common feature can not constitute a special technical feature within the meaning of PCT Rule 13.2, second sentence, since it makes no contribution over the prior art. Because the common feature does not satisfy the requirement for being a special technical feature it follows that it cannot provide the necessary technical relationship between the identified inventions. Therefore the claims do not satisfy the requirement of unity of invention *a posteriori*.

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member
US	4769962	NONE
US	2005217202	NONE
US	6797218	NONE
AU	199466002	NONE

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew Lennox
Filer:	Gregory A. Nelson/Jeffrey Davis
Attorney Docket Number:	9852-2

Filed as Large Entity

U.S. National Stage under 35 USC 371 Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
National Stage Fee	1631	1	330	330
Natl Stage Search Fee - Report provided	1642	1	430	430
National Stage Exam - all other cases	1633	1	220	220
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**980**

Electronic Acknowledgement Receipt

EFS ID:	8956448
Application Number:	12995966
International Application Number:	PCT/AU09/00685
Confirmation Number:	4496
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew Lennox
Customer Number:	85936
Filer:	Gregory A. Nelson
Filer Authorized By:	
Attorney Docket Number:	9852-2
Receipt Date:	02-DEC-2010
Filing Date:	
Time Stamp:	18:08:54
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$980
RAM confirmation Number	5183
Deposit Account	141437
Authorized User	NELSON,GREGORY

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. 1.492 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	9852-2_Transmittal.pdf	524620 c0ca06ec302b6fff63fd147faf0ef81f47bfff44	no	4
Warnings:					
Information:					
2	Application Data Sheet	9852-2_ADS.pdf	1032555 f874c0d9b23a45933438c2a39c6b85b45227b3cf	no	5
Warnings:					
Information:					
3		9852-2_Application.pdf	3352878 2e1352eebbcc16c6e84edad759a235c092f15f2d	yes	39

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	24
Claims	25	31
Abstract	32	32
Drawings-only black and white line drawings	33	39

Warnings:					
Information:					
4		9852-2_PrelimAmend.pdf	35538 c09a14bfa9c798c83d496519a4ba61e7a88ce0a1	yes	6

Multipart Description/PDF files in .zip description

Document Description	Start	End
Preliminary Amendment	1	1
Specification	2	2
Claims	3	5
Applicant Arguments/Remarks Made in an Amendment	6	6

Warnings:					
Information:					

5	Miscellaneous Incoming Letter	9852-2_ISR.pdf	718377 7a824c8e1b6bf03f782288f8ae579e0c694a9e68	no	5
Warnings:					
Information:					
6	Fee Worksheet (PTO-875)	fee-info.pdf	33381 a50dceade2d336b50f730237469ccbf93b7eae4c	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	5697349	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 December 2009 (10.12.2009)

PCT

(10) International Publication Number
WO 2009/146487 A1

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E04D 5/06 (2006.01)

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2 June 2009 (02.06.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

2008202416	2 June 2008 (02.06.2008)	AU
2008203409	30 July 2008 (30.07.2008)	AU
2008101060	30 October 2008 (30.10.2008)	AU
2009200232	22 January 2009 (22.01.2009)	AU

(71) Applicant *(for all designated States except US)*: **CASE FILE MANAGEMENT SYSTEMS PTY LTD** [AU/AU]; Unit 27, 205/213 Port Hacking Road, Miranda, NSW 2228 (AU).

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(74) Agent: **DUMMER, Peter, C.**; Wallington-Dummer, GPO Box 3888, Sydney, NSW 2001 (AU).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report (Art. 21(3))*

(54) **Title**: ROOF AND WALL COVER SYSTEM

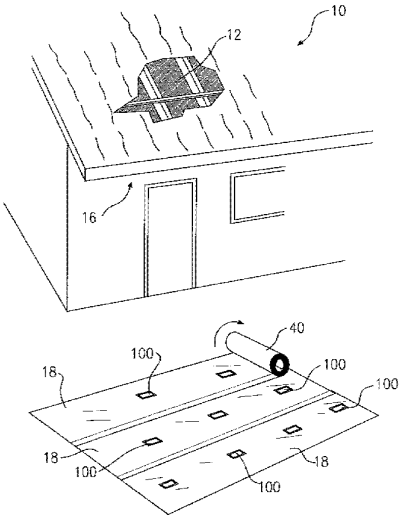


Fig. 5

(57) **Abstract**: A covering of a damaged or uncompleted building; the covering including a film of heat shrinkable material stretched over damaged or uncompleted portions of the building; the film formed as a sheet comprising an assembly of lengths of the heat shrinkable material applied to surfaces of the building.

WO 2009/146487 A1

ROOF AND WALL COVER SYSTEM

The present invention relates to protective covering of roofs and walls of a building and, more particularly, to the covering of damaged or under construction roofs, as well as the covering of walls of buildings.

BACKGROUND

Roofs, as well as walls, are susceptible to damage from high winds, rain or hail. Tiled roofs for example may have a considerable area of tiles either damaged from hail impact, or dislodged completely as the result of high intensity storms. Shingled roofs are liable to be similarly damaged, and even metal sheeted roofs may suffer partial or total removal of one or more sheets. Damage to roofs and walls may also be caused by the impact of falling trees, large branches, or other objects made airborne under high wind conditions.

Storm or impact damage cannot usually be immediately repaired so that to prevent further or potential damage to the interior of the building, temporary covering must be provided. Typically canvas (or similar material) tarpaulins are placed over the damaged part of the roof and secured to the structure by ropes.

One disadvantage of this method of temporary covering is the difficulty of adequately securing a tarpaulin to the

roof or walls so that they remain very vulnerable to dislodgement should high winds prevail or recur and often require continuing attention and adjustment. Moreover, they are heavy and awkward to position, posing occupational health and safety issues. A further disadvantage is that they are expensive to acquire and bulky to store, and if the many roofs are damaged in one storm event, the number of tarpaulins available may be inadequate.

Buildings under construction, particularly timber framed, brick clad dwellings, are frequently constructed in a sequence where the timber frame, including that of the roof, is completed a considerable time before the roof cladding can be added. A disadvantage of this construction technique is that during this period the timber of the structure, which may even include timber or particle board flooring, is liable to deterioration from water and sun. A further disadvantage of this sequence of construction is that, if rain intervenes at the time further internal work is scheduled, the lack of roof covering may cause considerable delay and financial loss.

A system of covering a roof with a film of material for the purpose of preventing damage from wind shear was disclosed in US 2005/0217202. However this US application teaches a method of application of the film from a roll of film hoisted up onto the roof surface, the film being unrolled in situ with overlapping edges of the film being

secured by the application of adhesive tape. Rolls of film are heavy and in practice the manipulation of a roll of film and the edge taping required on even an intact roof surface is extremely difficult, if not dangerous and is completely impractical for application to the roof framing of an uncompleted building.

It is common practice to provide a moisture resistant barrier or wrap to a building structure. Such barriers or building wraps are particularly important for those structures that are constructed of timber framing. It is known to apply a weather resistant wrap over the timber studs of *a* building in order to resist the ingress of moisture. This moisture can cause unwanted structural movement in framework constructed from kiln dried timber.

The material is typically in the form of a flexible plastic film such as polyethylene. Prior art practice for applying building wrap comprises unrolling, measuring and cutting strips of wrap on the ground and then subsequently joining them to form a single sheet for subsequent nailing or stapling across the vertical walls or stud frame of a structure. Because of the slippery nature of the wrap material and difficulties in managing said wrap in windy conditions it is often extremely awkward or even dangerous to work at elevated locations. Also areas of slack or looseness can arise when the preformed sheet is nailed or stapled to the structure. This results in air pockets which

may detract from the insulating and sealing properties of the wrap.

Older buildings frequently included asbestos material for roofing, wall cladding and pipe lagging. Removal of such material, for example during renovations, repair or for health risk reasons, provides hazards from loose asbestos flakes and fibres escaping into the environment.

It is an object of the present invention to address or at least ameliorate some of the above disadvantages.

Notes

1. The term "comprising" (and grammatical variations thereof) is used in this specification in the inclusive sense of "having" or "including", and not in the exclusive sense of "consisting only of".
2. The above discussion of the prior art in the Background of the invention, is not an admission that any information discussed therein is citable prior art or part of the common general knowledge of persons skilled in the art in any country.

BRIEF DESCRIPTION OF INVENTION

Accordingly, in a first broad form of the invention, there is provided a roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an

assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

Preferably, said heat shrinkable film provides a temporary waterproofing of a damaged roof.

Preferably, said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface.

Preferably, said heat shrinkable film forms a permanent heat reflecting layer.

Preferably, said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

Preferably, said mechanical means include a temporary batten affixed under eaves of said roof.

Preferably, said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

Preferably, said heat shrinkable film is a film of low-density polyethylene.

Preferably, said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

In another broad form of the invention, there is provided a method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) attaching a trailing end of said sheet at an edge of said roof structure,

(e) taking a leading edge of said sheet to said opposite edge,

(f) attaching said leading edge of said sheet at said opposite edge,

(g) applying heat with a heat gun to said sheet of heat shrinkable film.

Preferably, said roof structure comprises an existing roof damaged through wind shear or impact.

Preferably, said roof structure comprises unclad roof framing of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under outer ends of rafters of said roof structure.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under eaves of said roof structure; portions of each said trailing edge said leading edge wrapped around a said batten.

Preferably, said method further includes the step of:

(a) securing an outer edge of a side of said sheet of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure.

In another broad form of the invention, there is provided a vented roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet prepared with at least one vent element so as to allow communication between volumes of air within a roof space under said sheet and air above said sheet.

Preferably, said vent comprises a base portion and a flexible flap adapted to cover an aperture in said base portion so as to prevent ingress of rain water.

Preferably, said base portion is proved with an adhesive layer; said adhesive layer exposed by removal of a peel-off protective cover layer; said vent affixed over an aperture prepared in said sheet.

Preferably, said sheet is positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

Preferably, said heat shrinkable film provides a temporary waterproofing of a damaged roof.

Preferably, said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface.

Preferably, said heat shrinkable film forms a permanent heat reflecting layer.

Preferably, said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

Preferably, said mechanical means include a temporary batten affixed under eaves of said roof.

Preferably, said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

Preferably, said heat shrinkable film is a film of low-density polyethylene.

Preferably, said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

In still another broad form of the invention, there is provided a method of preparing a sheet of heat shrinkable material for protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) cutting at least one aperture into said sheet of material,

(e) affixing a vent over said aperture so as to allow communication between air volumes above and below said sheet of material.

Preferably, said method includes the further steps of:

(a) attaching a trailing end of said sheet at an edge of said roof structure,

(b) taking a leading edge of said sheet to said opposite edge,

(c) attaching said leading edge of said sheet at said opposite edge,

(d) applying heat with a heat gun to said sheet of heat shrinkable film.

Preferably, said roof structure comprises an existing roof damaged through wind shear or impact.

Preferably, said roof structure comprises unclad roof framing of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under outer ends of rafters of said roof structure.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under eaves of said roof structure; portions of each said trailing edge said leading edge wrapped around a said batten.

Preferably, said method further includes the step of:

(a) securing an outer edge of a side of said sheet of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure.

In still another broad form of the invention, there is

provided a method of applying a moisture proof building wrap to a structure is disclosed, said method including the steps of:

- procuring a roll of building wrap in the form of a heat shrinkable plastic film,
- attaching a free edge *of* said film to an inside perimeter edge of said structure and disposing an opposite leading edge of said film horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands of said film for fixing thereto, and
- applying heat to said bands to shrink the film tight against said structure.

Preferably a plurality of horizontal bands of film are applied in overlapping fashion to entirely cover said structure.

Preferably, the joints between said horizontal bands are sealed with tape.

Preferably, said heat is applied to the corner perimeters and top and bottom plate areas to shrink the film into sealing engagement with said structure.

Preferably, said bands are overlapped by about 300 mm.

Preferably, the film is then cut as required to accommodate wall penetrations such as windows and doors.

It is further preferred to cut around said wall penetrations allowing a minimum of 300 mm rise therearound and to subsequently apply additional heat to ensure film shrinkage back for a moisture tight seal against said structure.

It is further preferred to use a 150 mm low density polyethylene film which contains fife retardant, reflective film, shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners. One film that ~acurrently used is known under the brand name "Buildseal" and produced by Optimum Metallising Pity Ltd of Kings Park NSW.

BRIEF DESCRIPTION OF DRAWINGS

Embodiments of the present invention will now be described with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a portion of a building of which the roof has sustained damage,

Figure 2 is a side sectioned view of a portion of a building and existing roof structure to which has been applied a roof cover system according to the invention,

Figure 3 is a side sectioned view of a portion of a partly completed building showing the application of a roof cover system of the invention to unclad roof framing,

Figure 4 is a further side sectioned view of the building of Figure 3 showing the roof cover system of the invention functioning as a permanent sarking layer,

Figure 5 is an illustration of the preparation of a sheet of heat shrinkable material prepared on a ground surface as an assembly of lengths of material taken from a roll of film,

Figure 6 is a perspective view of a portion of heat shrinkable material in position over a section of roof in which the sheets of material were prior prepared with air vents,

Figure 6a is a perspective view of one preferred embodiment of the air vents of Figure 6.

Figure 7 shows a schematic perspective view of an impact or storm damaged wall of a building, and

Figure 8 shows a schematic perspective view of a timber stud structure undergoing construction or renovation.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The roof cover system of the present invention provides for a system and method for covering a damaged or uncompleted roof of a building. The system uses a heat

shrinkable film, preferably a low-density polyethylene containing shrinking resins, UV inhibitors, anti brittling compounds and strengtheners for tear resistance. The film is preferably between 0.6 and 0.7mm in thickness and is provided in rolls of various widths and lengths. In at least one preferred form of the film, it is provided with a heat reflective surface.

First Preferred Embodiment

With reference now to Figure 1, typical damage to a tiled roof 10 of a building 12 may include the loss of a number of tiles 12 due to a high wind shear event, leaving the building 14 open to the ingress of water. Water ingress may also occur if tiles are cracked for example from heavy hail impact or falling trees or branches. Emergency temporary repair is provided by the roof cover system of the invention by applying the above described film over that portion of the roof which has sustained damage.

If required, sharp edges protruding from the roof surface may first be covered with suitable wadding and adhesive tape to prevent possible tearing of the film during application.

The extent of roof to be covered is measured and the most suitable available width roll of the heat shrinkable film selected. Film is cut to one or more lengths sufficient to extend from one edge of the roof to an opposite edge. With reference to Figure 2, a trailing edge

of a length of film is mechanically attached at the first edge 16 of the roof 10. In one preferred method as shown in Figure 2, the trailing edge 15 of the film 18 is wrapped once around a length of batten 18, preferably as long as the width of the film, and the batten 20 mechanically fixed to the underside 22 of the eaves 24 at the first edge of the roof 10.

The leading edge is now passed over the roof to the opposite edge (not shown) of the roof and the leading edge secured to the opposite side eaves in similar manner to that already described. If the outer side edge of the length of film adjoins an edge of the roof, this may be similarly secured under the eaves along that side of the roof. Alternatively, the leading edge may be secured to the barge or fascia boards.

Heat is now applied to the film at the underside of the eaves 24 with a heat gun (not shown) to cause the film 18 to shrink securely around the batten and the undersides of the eaves. The heat gun, now attached to an extension arm (not shown), is then used to apply heat to the entire length of film 18 stretched over the roof surface, causing it to tightly conform to the surface and covering missing or cracked tiles 12.

If the extent of the damage requires, successive lengths of film can be applied side by side with an overlap

of preferably 300mm. Heat is applied along these overlaps to seal the edges of the adjoining lengths together.

Valley areas and other discontinuities in the roof surface can be accommodated by cutting film to suit the are involve and heat sealing to adjoining film length edges. Vertical roof penetrations, such as chimney stacks ventilators and the like, are sealed by preferably a 300mm rise of film. Edges of riser sections of film can be taped or cable-tied to the penetration.

By the above means, a damaged roof can be rapidly and securely covered to prevent water ingress and damage to the inside of the building. Unlike tarpaulins which are difficult to secure an remain liable to dislodgement in high winds, the heat shrinkable film by conforming closely to the roof surface, provides a secure seal over the damage until permanent repairs can be made.

Second Preferred Embodiment

In a second preferred embodiment of the invention, a damaged section of a roof to be temporarily protected prior to permanent repair, is again covered by a heat shrinkable film. In this embodiment however, the method of application is different.

Instead of attempting to apply individual lengths of film, attaching a length at a first end to the eaves at one side of the roof, stretching the length over the roof to be attached at the eaves at the opposite side, and taping the

edges of adjoining lengths of film together, the method of this embodiment, with reference to Figure 5 is as follows:

(a) the location of the damaged section 12 of roof 10 is assessed in relation to the nearest opposing edges of the roof,

(b) the length of film required to extend between the opposing roof edges is estimated, allowing for overhang and fixing requirements,

(c) the width of the damaged area is ascertained and the number of lengths of the available film required to cover and overlap the damaged area determined,

(d) the number of lengths of material 18 is then cut from a roll 40 of the film and laid out side by side on the ground,

(e) while on the ground, adjoining edges of the lengths of film are taped to form a waterproof assembled sheet of heat shrinkable film, sufficient to stretch from one roof edge to the opposite roof edges and of sufficient width to cover the damaged area.

This assembled sheet is now pulled up onto the roof, positioned so as to cover the damaged area and outer ends fastened in similar manner as previously described above.

An advantage of this method is that there is no need to lift a relatively heavy roll of heat shrinkable material

onto the roof and unroll it one what may be quite steep surfaces. Moreover it has been found in practice that the arrangement described in the first preferred embodiment above of taping the edges of adjoining lengths of the material together on the roof is both difficult and dangerous. This is especially so if the damage to the roof is extensive and perhaps been rendered structurally unsafe. The method of the present described embodiment minimises activity on the roof surface, requiring only that one edge of the sheet of material be carried over the roof from a first edge to an opposite edge.

Third Preferred Embodiment

In a third preferred embodiment of the invention, a heat shrinkable film may be applied to the roof framing of an uncompleted building. In this embodiment as shown in Figure 3, the heat shrinkable film 18 is applied after the roof framing is complete but preferably prior to the attachment of facia boards.

In this embodiment also, lengths of film are prepared from suitable width rolls sufficient to stretch from one side of the roof to an opposite side. In this case the trailing and leading edges of the length of film are preferably attached by means of battens 20 fixed to the underside of the outer ends 26 of rafters 28, that is

between the outer ends of the rafters 28 and the wall frame 30.

The heat shrinkable film 18 in this embodiment, is provided with a heat reflecting upper surface 32 so that the film 18 forms a permanent sarking layer beneath the roofing cladding, either tiles 34, as shown in Figure 4, or metal sheeting. Thus in this embodiment the heat shrinkable film of the invention act both to protect the timberwork of a building under construction and provides a replacement for conventional reflective sarking.

The weatherproof nature of the heat shrinkable material applied in this way provides for internal work on the building to continue in the event of inclement weather, thus increasing productivity and economy of construction.

It will be understood that the method of application described in the second preferred embodiment above is also, indeed perhaps even more so, applicable to the present embodiment. In this case manipulating a roll of material and taping edges of lengths of material together over the open framework of the roof of a building under construction is even more difficult so that assembly on the ground, perhaps into a number of sheets, prior to placement over the roof framing, is clearly advantageous.

In each of the above described embodiments, the sheet of material may be further prepared, as shown in Figure 6, by adding a distribution of air vents 100 at various locations

in each of the strips 18. Preferably, the vents 100, as shown in Figures 6 and 6A, take the form of one-way covers or flaps 110 which are affixed over an aperture 112 cut into the strips of film 18 at the desired location. The flaps 110 are so arranged as to prevent the ingress of rainwater while allowing the passage of air.

In one preferred form the vent 100 is pre-formed of low density polyethylene and provided with a self adhesive base 114. To apply the vent 100 after the aperture has been prepared, a protective cover 116 is peeled off the adhesive layer of base 114 and the vent 100 pressed into position.

These vents allow the exhalation of air from underneath the sheet of material, either as a result of higher air pressure arising within the roof space, for example through rising warm air or through the ingress of wind, or due to negative pressure above the sheet material.

Fourth Preferred Embodiment

Referring first to figure 7 there is a cladded structure indicated generally as 1 with an area 2 of impact or storm damage in side wall 3. In accordance with the invention the structure is wrapped as defined above with horizontal bands 4 of a heat shrinkable polyethylene film. The bands preferably overlap by about 300 mm and are heated at the corner perimeters 4A and top and bottom plate areas 4D and 4C preferably using a hand held LPG heat gun or the like. The film then shrinks and seals tight against the building

and also against itself along the overlapping joints 4D to exclude weather and moisture. Although not shown in the drawings a substructure batten type frame with diagonal bracing is preferably built over the damaged area 2 before the film is applied.

With the timber stud structure 5 of figure 8 the building wrap is applied directly over the studs 6 in horizontal bands 1900 mm wide in a similar fashion to figure 1. While only the lower band 7 is shown adjacent the bottom plate 8 subsequent bands are applied as described earlier *in* overlapping fashion up to the top plate 9. Heat is then applied to the perimeter corners 10 and top and bottom plate areas to shrink the film to seal against itself along taped overlapping joints and also against the structure.

Preferably the film is provided with an outer reflective surface so as to also provide thermal insulation and a cost effective replacement for conventional wall sarking and insulation.

With both structures as mentioned earlier the film is cut after wrapping to accommodate doors, windows and other penetrations.

Other uses, benefits and advantages will become apparent from the following summary and preferred methodology for the invention.

CURRENTLY PREFERRED METHODOLOGY

- Select the correct width roll as it is important to have the least amount of welds in the sealing process.
- Site measure the area which to be sealed.
- Ensure any sharp object are padded.
- Attach one side of the shrink wrap to the inside edge of perimeter stud work. Securely fix by a continuous batten.
- Take the leading edge of the said film across to the Opposite the structure.
- Securely fix off the opposite side by continuous batten.
- Apply heat to the film wrapped stud in a continuous even pattern with a similar motion of a spray paint gun.
- Allow time for the film to shrink on to itself.
- Repeat this process to all vertical wall surfaces.
- Now using the heat gun extension tool apply an even continuous heat to the entirety of the vertical wall surface allowing enough passes for the shrink wrap to contract.
- Continue this process with overlapped joints of 300mm until the structure is covered entirely.
- For wall penetrations such as windows and doors cut the plastic as required.

- Allow to cut around alt wail penetrations allowing a minimum of 300mm rise around all penetrations. Apply heat to ensure the film shrinks back onto the sub structure allowing a watertight seal.
- Ensure all edges are sealed.
- Continuously check for burn holes and patch as required.
- For vertical impact damaged areas a sub structure frame will be required for the shrink wrap to be applied over. This is a simple batten type frame with diagonal bracing securely fixed to the structure.

USES

- Wall insulation and draught elimination.
- Asbestos removal and disposal.
- All weather protection during construction to eliminate lost time.
- Cost effective weather seal for storm Impact damaged buildings and or structures on vertical surfaces.
- Replacement/substitution for Vertical tarpaulins installations.
- Vertical timber framework protection during construction.

BENEFITS

- Cost effective replacement for wall sarking/

insulation. Reflective surface provides excellent thermal qualities.

- Provides excellent thermal insulation on walls.
- Ensures kiln dried structural framework is not exposed to weather conditions eliminating structural movement.
- Provides a dust free environment when removing asbestos.
- Reduces residual cost and time during re construction of storm Impact damaged buildings and or structures.
- Eliminates inclement weather days after main structure is in place therefore assisting productivity.
- No ongoing hire cost as is for tarpaulins.
- Eliminates the need to re attend sites to secure tarpaulins during the reconstruction process.

The above describes only some embodiments of the present invention and modifications, obvious to those skilled in the art, can be made thereto without departing from the scope of the present invention.

CLAIMS

1. A roof cover of a damaged or uncompleted building; said cover including a film of heat shrinkable material stretched over a damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface.
2. The roof cover of claim 1 wherein said heat shrinkable film provides a temporary waterproofing of a damaged roof.
3. The roof cover of claim 1 wherein said heat shrinkable film provides a temporary or permanent waterproofing of an unclad roof of a building under construction.
4. The roof cover of claim 1 wherein said heat shrinkable film is provided with a heat reflecting surface.
5. The roof cover of claim 4 wherein said heat shrinkable film forms a permanent layer; said layer excluding inclement weather from said building under construction.
6. The roof cover of claim 4 wherein said heat shrinkable film is retained as a permanent heat reflecting layer under subsequently applied permanent roof cladding.
7. The roof cover of any one of claims 3 to 6 wherein said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

8. The roof cover of claim 7 wherein said mechanical means include a temporary batten affixed under eaves of said roof framing.

9. The roof cover of any one of claims 1 to 8 wherein said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

10. The roof cover of any one of claims 1 to 9 wherein said heat shrinkable film is a film of low-density polyethylene.

11. The roof cover of claim 10 wherein said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

12. The roof cover of any one of claims 1 to 11 wherein said sheet is prepared with at least one vent element so as to allow communication between volumes of air within a roof space under said sheet and air above said sheet.

13. The roof cover of claim 12 wherein said vent comprises a base portion and a flexible flap adapted to cover an aperture in said base portion so as to prevent ingress of rain water.

14. The roof cover of claim 12 or 13 wherein said base portion is proved with an adhesive layer; said adhesive layer exposed by removal of a peel-off protective cover layer; said vent affixed over an aperture prepared in said sheet.

15. A method of preparing a sheet of heat shrinkable material for protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) positioning said sheet of material over an area of roof to be covered,

(e) affixing said sheet by mechanical means.

16. The method of claim 15 wherein said method includes the further steps:

(a) of cutting at least one aperture into said sheet of material,

(b) affixing a vent over said aperture so as to allow communication between air volumes above and below said sheet of material.

17. The method of claim 15 wherein said method includes the further steps of:

(a) attaching a trailing end of said sheet at an edge of said roof structure,

(b) taking a leading edge of said sheet to said opposite edge,

(c) attaching said leading edge of said sheet at said opposite edge,

(d) applying heat with a heat gun to said sheet of heat shrinkable film.

18. The method of claim 15 wherein said roof structure comprises an existing roof damaged through wind shear or impact.

19. The method of claim 15 wherein said roof structure comprises unclad roof framing of a building under construction.

20. The method of claim 16 wherein said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

21. A damaged or uncompleted roof cover system; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

22. A damaged or uncompleted roof cover system; said cover system including a heat shrinkable film stretched over a said damaged or uncompleted roof; said film brought into conformity with surfaces of said roof through application of heat.

23. A method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a length of said film from said roll sufficient to extend from one edge of said roof structure to an opposite edge,

(c) attaching a trailing end of said length at an edge of said roof structure,

(d) taking a leading edge of said length to said opposite edge,

(e) attaching said leading end of said length at said opposite edge,applying heat with a heat gun to said length of heat shrinkable film.

24. A method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to

an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) attaching a trailing end of said sheet at an edge of said roof structure,

(e) taking a leading edge of said sheet to said opposite edge,

(f) attaching said leading edge of said sheet at said opposite edge,

(g) applying heat with a heat gun to said sheet of heat shrinkable film.

25. A method of applying a moisture proof building wrap to a structure; said method including the steps of:

(a) procuring a roll of building wrap in the form of a heat shrinkable plastic film,

(b) attaching a free edge of said film to an inside perimeter edge of said structure and disposing an opposite leading edge of said film horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands of said film for fixing thereto,

(c) applying heat to said bands to shrink said film

tight against said structure.

26. The method as claimed in claim 25 and including the further step of cutting the film to accommodate doors, windows and other penetrations.

27. The method as claimed in claim 25 wherein a plurality of bands of said film with taped overlapping joints are formed on said structure.

28. The method as claimed in claim 27 wherein said heat is applied to the perimeter corners and top and bottom plate areas of said structure.

29. The method as claimed in claim 25 wherein said building wrap is a heat shrinkable polyethylene film.

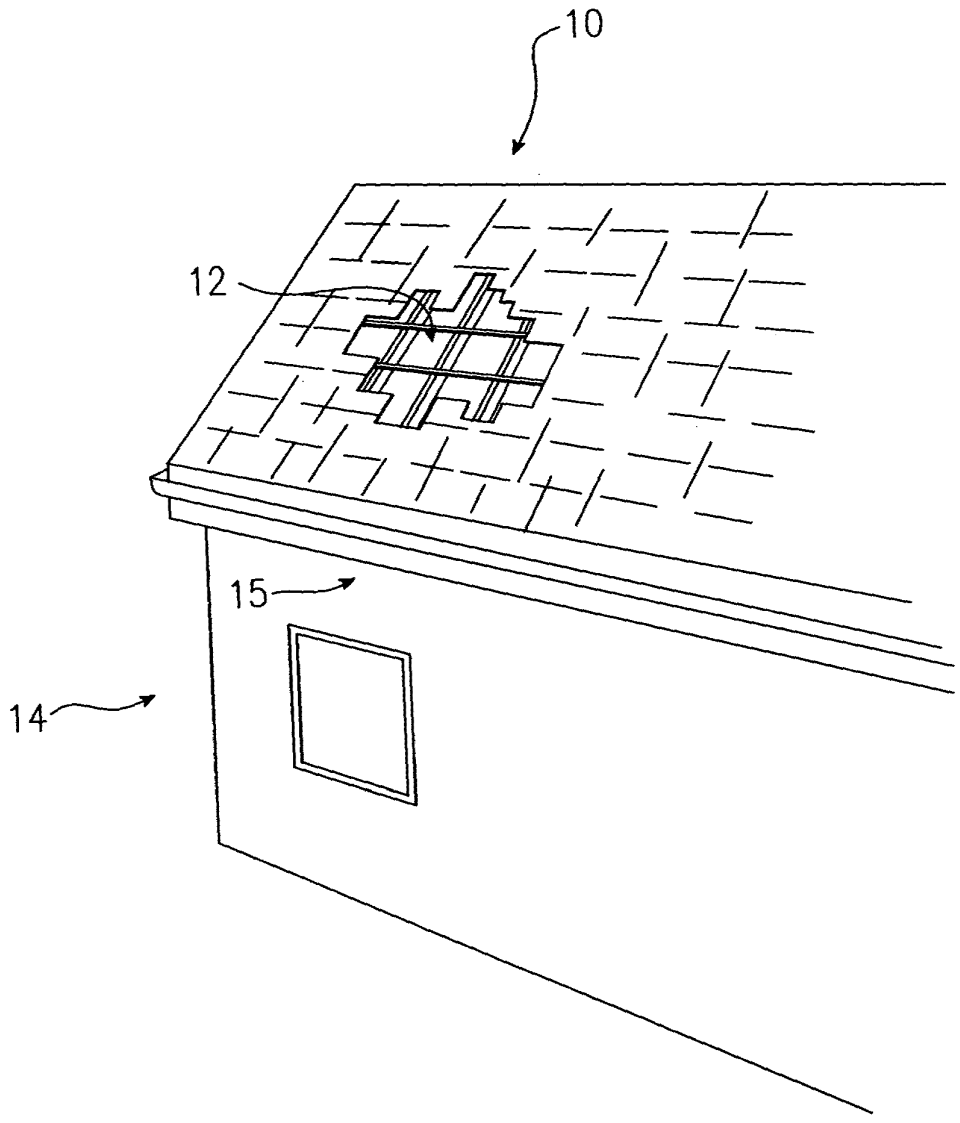


Fig. 1

Structural Wrap Exhibit 1014, Page 97
Structural Wrap v Stormseal, IPR2024-00084

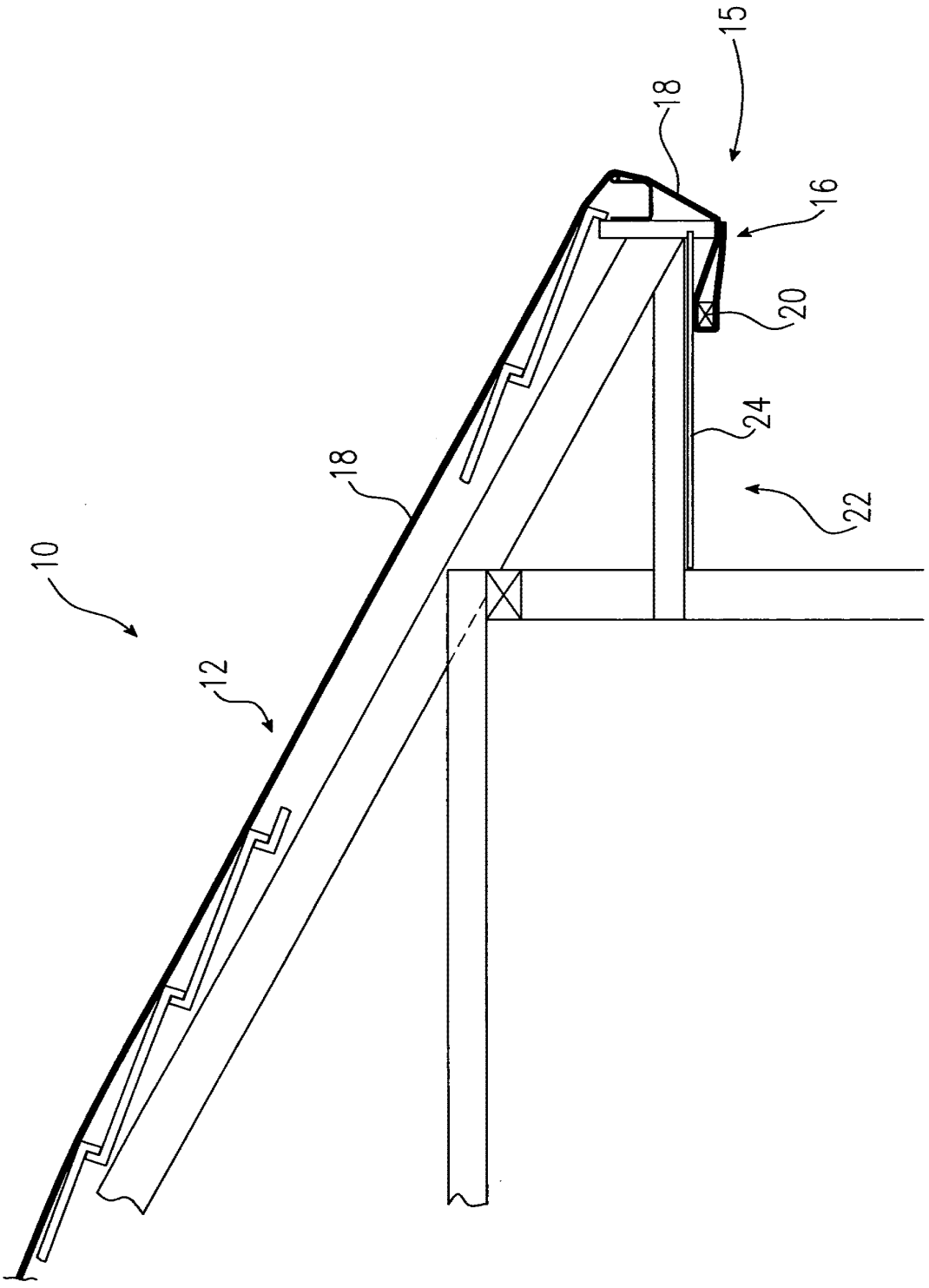


Fig. 2

Structural Wrap Exhibit 1014, Page 98
Structural Wrap v Stormseal, IPR2024-00084

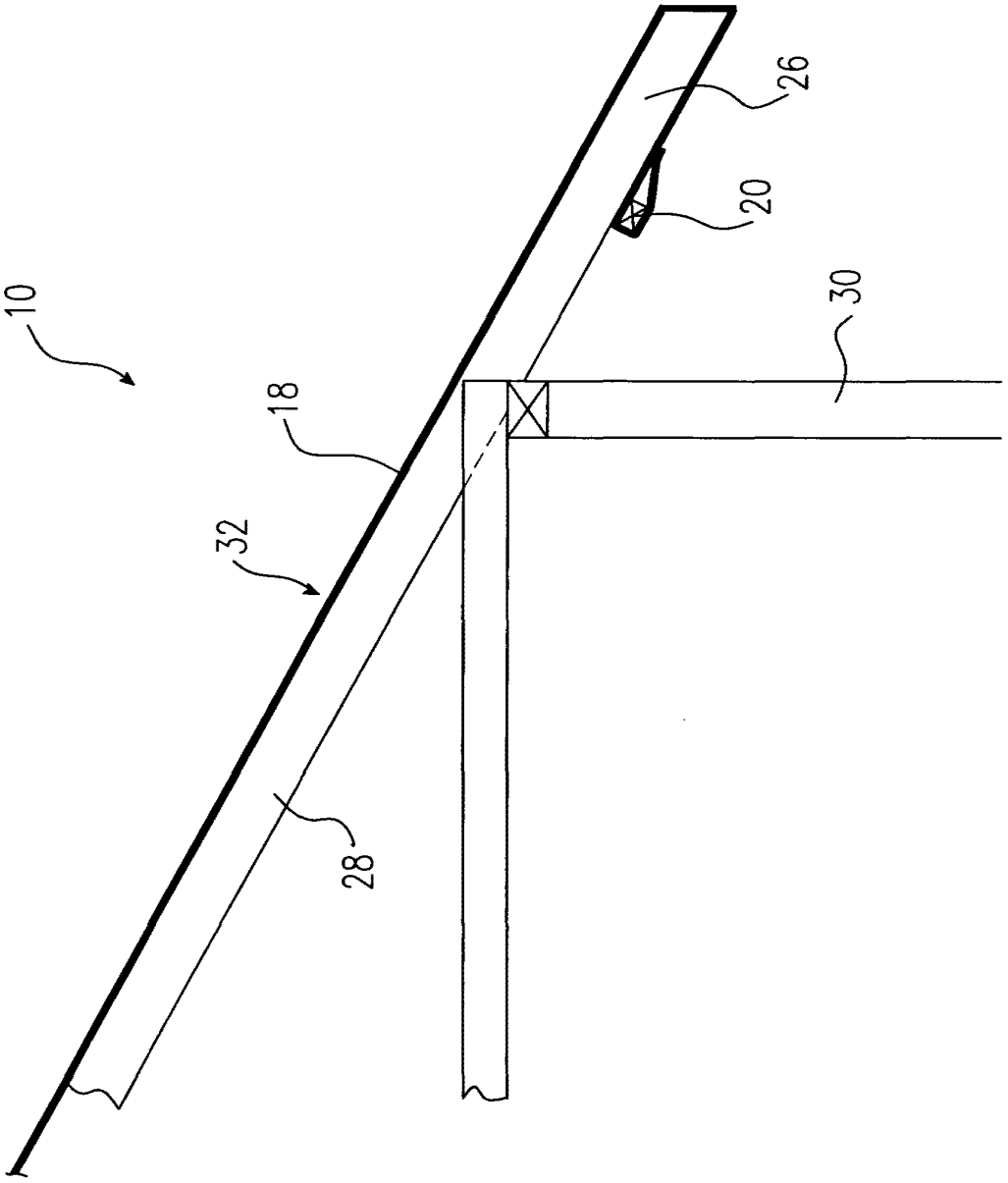


Fig. 3

Structural Wrap Exhibit 1014, Page 99
Structural Wrap v Stormseal, IPR2024-00084

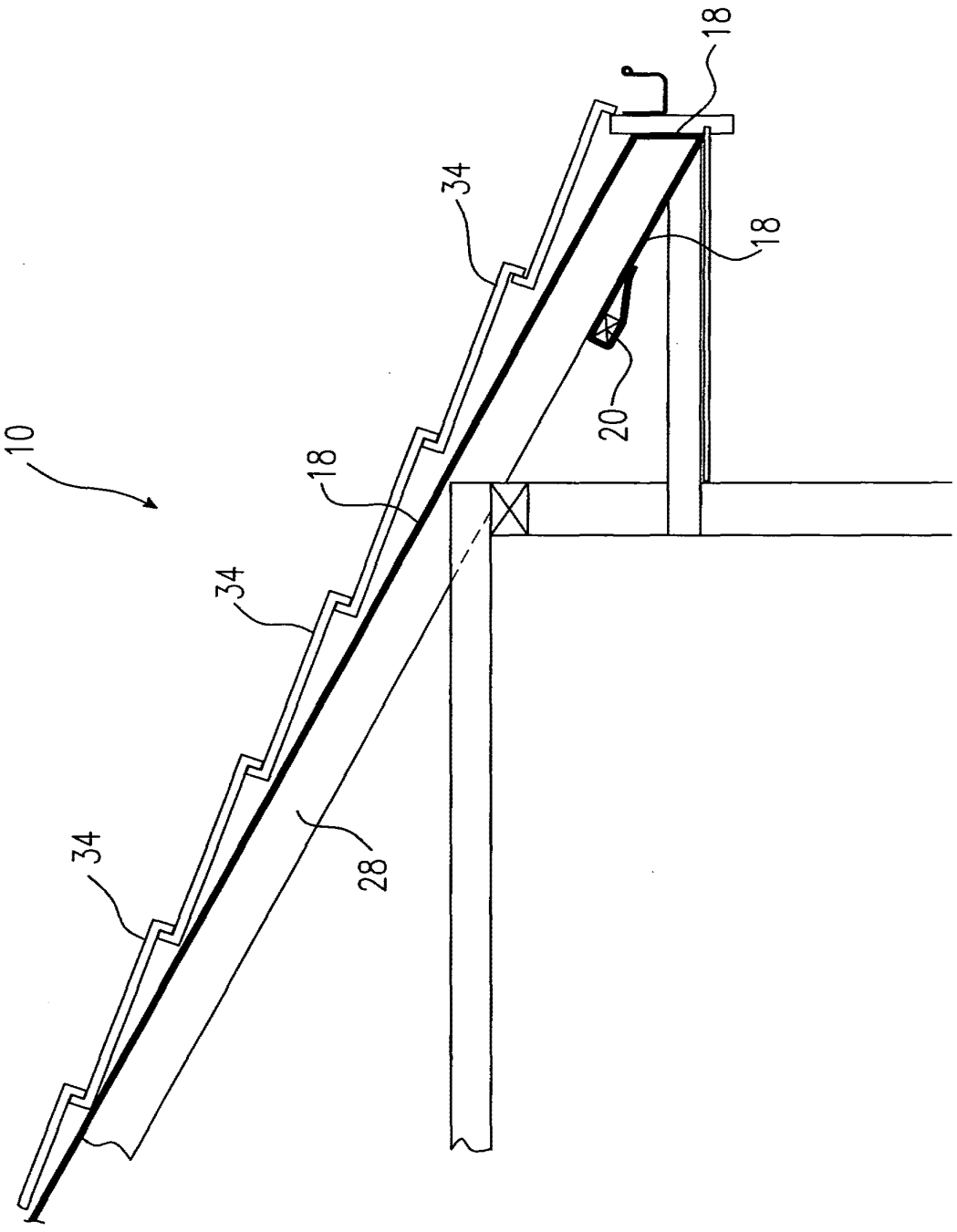
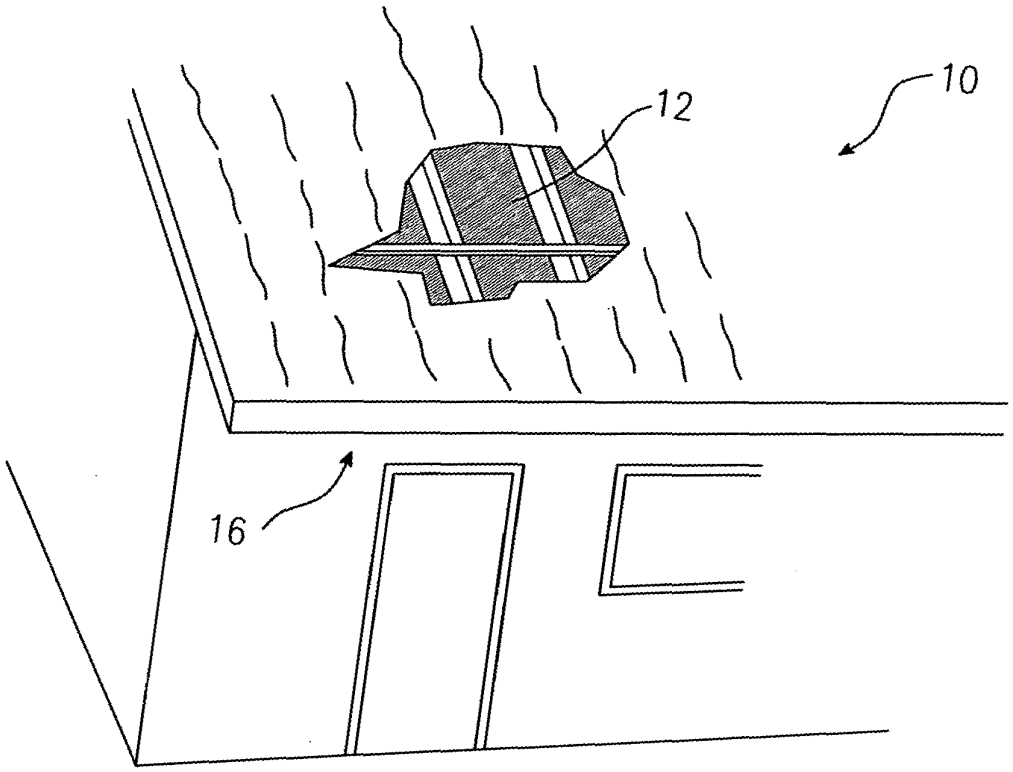


Fig. 4

Structural Wrap Exhibit 1014, Page 100
Structural Wrap v Stormseal, IPR2024-00084



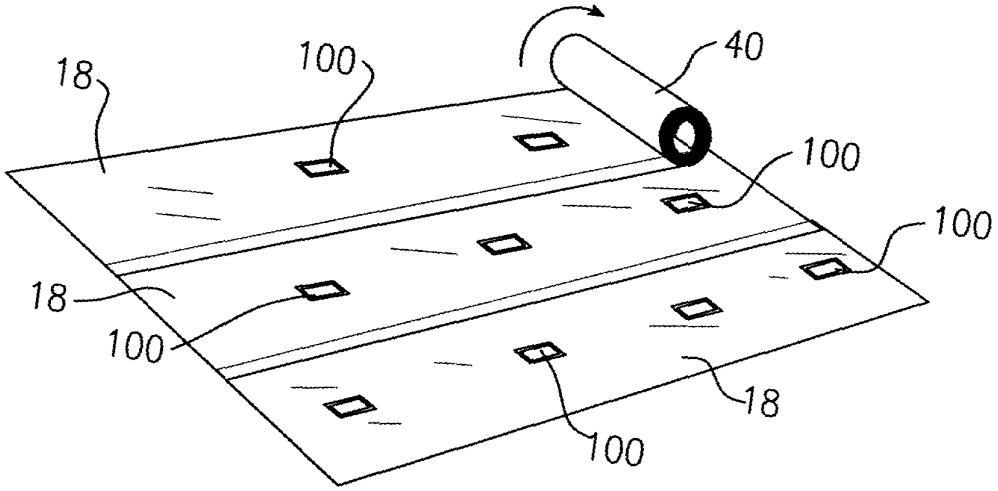


Fig. 5

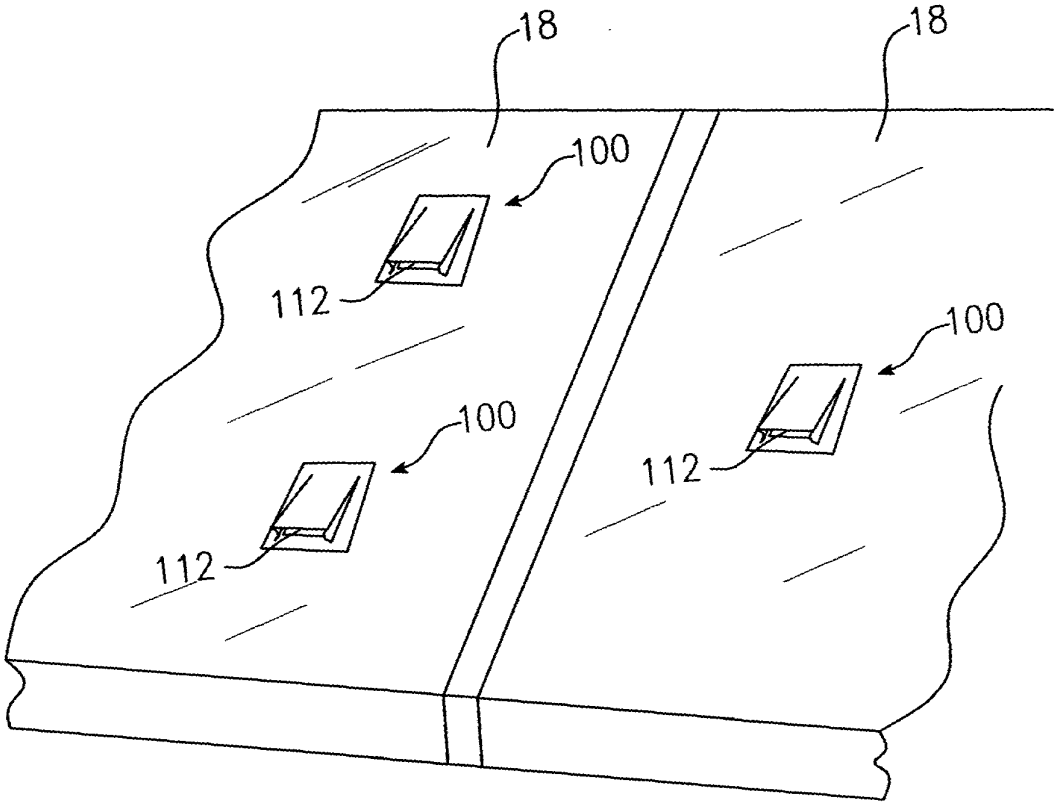


Fig. 6

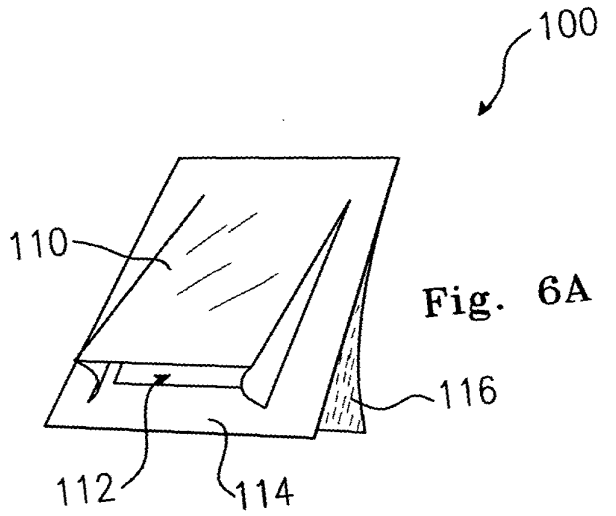


Fig. 6A

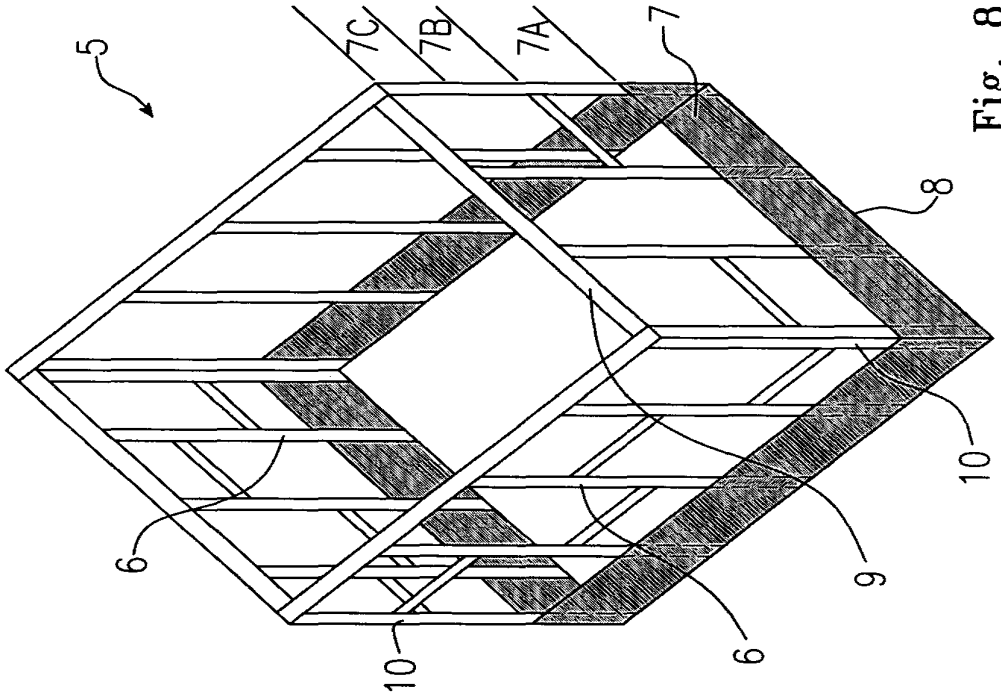


Fig. 8

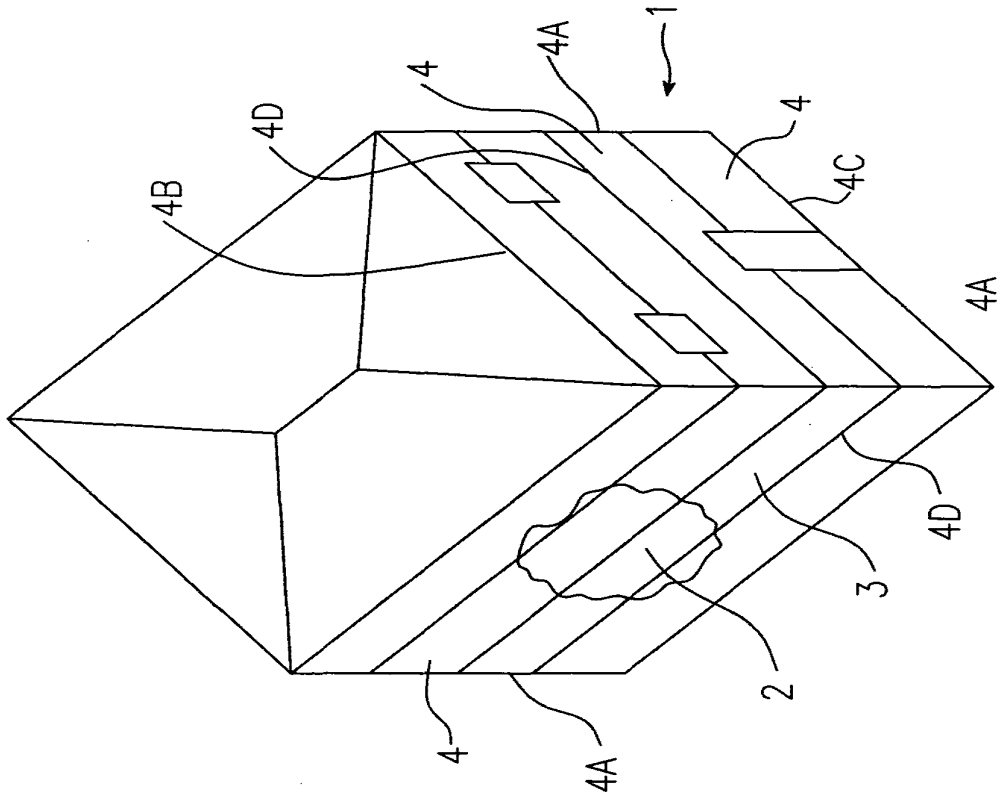


Fig. 7

Structural Wrap Exhibit 1014, Page 103
Structural Wrap v Stormseal, IPR2024-00084

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Australian Government

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I, MICHAEL SHEEHAN, EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Complete specification in connection with Application No. 2008202416 for a patent by CASE FILE MANAGEMENT SYSTEMS PTY LTD as filed on 02 June 2008.

WITNESS my hand this
Twenty-second day of July 2009

MJSheehan

MICHAEL SHEEHAN
EXAMINATION SUPPORT AND SALES

2008202416 02 Jun 2008

P/00/009

Regulation 3.2

AUSTRALIA

Patents Act 1990

COMPLETE SPECIFICATION

Invention Title:

ROOF COVER SYSTEM

The invention is described in the following statement, including the best means of performing the invention known to us:

Our Ref: 082024

2008202416 02 Jun 2008

ROOF COVER SYSTEM

The present invention relates to protective covering of roofs and, more particularly, to the covering of damaged or under construction roofs.

BACKGROUND

Roofs are susceptible to damage from high winds, rain or hail. Tiled roofs for example may have a considerable area of tiles either damaged from hail impact, or dislodged completely as the result of high intensity storms. Shingled roofs are liable to be similarly damaged, and even metal sheeted roofs may suffer partial or total removal of one or more sheets. Damage to roofs may also be caused by the impact of falling trees or large branches.

Storm or impact damage cannot usually be immediately repaired so that to prevent further or potential damage to the interior of the building, temporary covering must be provided. Typically canvas (or similar material) tarpaulins are placed over the damaged part of the roof and secured to the structure by ropes.

One disadvantage of this method of temporary covering is the difficulty of adequately securing a tarpaulin to the roof so that they remain very vulnerable to dislodgement should high winds prevail or recur and often require continuing attention and adjustment. Moreover, they are

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heavy and awkward to position, posing occupational health and safety issues. A further disadvantage is that they are expensive to acquire and bulky to store, and if the many roofs are damaged in one storm event, the number of tarpaulins available may be inadequate.

Buildings under construction, particularly timber framed, brick clad dwellings, are frequently constructed in a sequence where the timber frame, including that of the roof, is completed a considerable time before the roof cladding can be added. A disadvantage of this construction technique is that during this period the timber of the structure, which may even include timber or particle board flooring, is liable to deterioration from water and sun. A further disadvantage of this sequence of construction is that, if rain intervenes at the time further internal work is scheduled, the lack of roof covering may cause considerable delay and financial loss.

It is an object of the present invention to address or at least ameliorate some of the above disadvantages.

Notes

1. The term "comprising" (and grammatical variations thereof) is used in this specification in the inclusive sense of "having" or "including", and not in the exclusive sense of "consisting only of".
2. The above discussion of the prior art in the Background of the invention, is not an admission that any

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information discussed therein is citable prior art or part of the common general knowledge of persons skilled in the art in any country.

BRIEF DESCRIPTION OF INVENTION

Accordingly, in a first broad form of the invention, there is provided a roof cover system for damaged or uncompleted roofs; said cover system including a heat shrinkable film stretched over a said damaged or uncompleted roof; said film brought into conformity with surfaces of said roof through application of heat.

Preferably, said heat shrinkable film provides a temporary waterproofing of a damaged roof.

Preferably, said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface.

Preferably, said heat shrinkable film forms a permanent sarking layer.

Preferably, said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

Preferably, said mechanical means include a temporary batten affixed under eaves of said roof.

Preferably, said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

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Preferably, said heat shrinkable film is a film of low-density polyethylene.

Preferably, said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

In a further broad form of the invention, there is provided a method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a length of said film from said roll sufficient to extend from one edge of said roof structure to an opposite edge,

(c) attaching a trailing end of said length at an edge of said roof structure,

(d) taking a leading edge of said length to said opposite edge,

(e) attaching said leading end of said length at said opposite edge,

(f) applying heat with a heat gun to said length of heat shrinkable film.

Preferably, said roof structure comprises an existing roof damaged through wind shear or impact.

Preferably, said roof structure comprises unclad roof framing of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a sarking layer under roof cladding.

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Preferably, said trailing end and said leading end of said length are attached by means of a batten affixed under outer ends of rafters of said roof structure.

Preferably, said trailing end and said leading end of said length of film are attached by means of a batten affixed under eaves of said roof structure; portions of each said trailing and said leading end wrapped around a said batten.

Preferably, said method further includes the steps of:

(a) securing an outer edge of a side of said length of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure,

(b) adding successive lengths of said heat shrinkable film sufficient to cover said roof structure or a damaged area of said roof structure,

(c) providing an overlap between adjoining said successive lengths of said film,

(d) heat welding said overlap between said adjoining lengths.

BRIEF DESCRIPTION OF DRAWINGS

Embodiments of the present invention will now be described with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a portion of a building of which the roof has sustained damage,

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Figure 2 is a side sectioned view of a portion of a building and existing roof structure to which has been applied a roof cover system according to the invention,

Figure 3 is a side sectioned view of a portion of a partly completed building showing the application of a roof cover system of the invention to unclad roof framing,

Figure 4 is a further side sectioned view of the building of Figure 3 showing the roof cover system of the invention functioning as a permanent sarking layer,

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The roof cover system of the present invention provides for a system and method for covering a damaged or uncompleted roof of a building. The system uses a heat shrinkable film, preferably a low-density polyethylene containing shrinking resins, UV inhibitors, anti brittling compounds and strengtheners for tear resistance. The film is preferably between 0.6 and 0.7mm in thickness and is provided in rolls of various widths and lengths. In at least one preferred form of the film, it is provided with a heat reflective surface.

First Preferred Embodiment

With reference now to Figure 1, typical damage to a tiled roof 10 of a building 12 may include the loss of a number of tiles 12 due to a high wind shear event, leaving the building 14 open to the ingress of water. Water ingress

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may also occur if tiles are cracked for example from heavy hail impact or falling trees or branches. Emergency temporary repair is provided by the roof cover system of the invention by applying the above described film over that portion of the roof which has sustained damage.

If required, sharp edges protruding from the roof surface may first be covered with suitable wadding and adhesive tape to prevent possible tearing of the film during application.

The extent of roof to be covered is measured and the most suitable available width roll of the heat shrinkable film selected. Film is cut to one or more lengths sufficient to extend from one edge of the roof to an opposite edge. With reference to Figure 2, a trailing edge of a length of film is mechanically attached at the first edge 16 of the roof 10. In one preferred method as shown in Figure 2, the trailing edge 15 of the film 18 is wrapped once around a length of batten 18, preferably as long as the width of the film, and the batten 20 mechanically fixed to the underside 22 of the eaves 24 at the first edge of the roof 10.

The leading edge is now passed over the roof to the opposite edge (not shown) of the roof and the leading edge secured to the opposite side eaves in similar manner to that already described. If the outer side edge of the length of film adjoins an edge of the roof, this may be

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similarly secured under the eaves along that side of the roof. Alternatively, the leading edge may be secured to the barge or fascia boards.

Heat is now applied to the film at the underside of the eaves 24 with a heat gun (not shown) to cause the film 18 to shrink securely around the batten and the undersides of the eaves. The heat gun, now attached to an extension arm (not shown), is then used to apply heat to the entire length of film 18 stretched over the roof surface, causing it to tightly conform to the surface and covering missing or cracked tiles 12.

If the extent of the damage requires, successive lengths of film can be applied side by side with an overlap of preferably 300mm. Heat is applied along these overlaps to seal the edges of the adjoining lengths together.

Valley areas and other discontinuities in the roof surface can be accommodated by cutting film to suit the are involve and heat sealing to adjoining film length edges. Vertical roof penetrations, such as chimney stacks ventilators and the like, are sealed by preferably a 300mm rise of film. Edges of riser sections of film can be taped or cable-tied to the penetration.

By the above means, a damaged roof can be rapidly and securely covered to prevent water ingress and damage to the inside of the building. Unlike tarpaulins which are difficult to secure an remain liable to dislodgement in

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high winds, the heat shrinkable film by conforming closely to the roof surface, provides a secure seal over the damage until permanent repairs can be made.

Second Preferred Embodiment

In a second preferred embodiment of the invention, a heat shrinkable film may be applied to the roof framing of an uncompleted building. In this embodiment as shown in Figure 3, the heat shrinkable film 18 is applied after the roof framing is complete but preferably prior to the attachment of facia boards.

In this embodiment also, lengths of film are prepared from suitable width rolls sufficient to stretch from one side of the roof to an opposite side. In this case the trailing and leading edges of the length of film are preferably attached by means of battens 20 fixed to the underside of the outer ends 26 of rafters 28, that is between the outer ends of the rafters 28 and the wall frame 30.

The heat shrinkable film 18 in this embodiment, is provided with a heat reflecting upper surface 32 so that the film 18 forms a permanent sarking layer beneath the roofing cladding, either tiles 34, as shown in Figure 4, or metal sheeting. Thus in this embodiment the heat shrinkable film of the invention act both to protect the timberwork of a building under construction and provides a replacement for conventional reflective sarking.

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The weatherproof nature of the heat shrinkable material applied in this way provides for internal work on the building to continue in the event of inclement weather, thus increasing productivity and economy of construction.

The above describes only some embodiments of the present invention and modifications, obvious to those skilled in the art, can be made thereto without departing from the scope of the present invention.

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CLAIMS

1. A roof cover system for damaged or uncompleted roofs; said cover system including a heat shrinkable film stretched over a said damaged or uncompleted roof; said film brought into conformity with surfaces of said roof through application of heat.

2. The roof cover system of claim 1 wherein said heat shrinkable film provides a temporary waterproofing of a damaged roof.

3. The roof cover system of claim 1 wherein said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

4. The roof cover system of claim 1 wherein said heat shrinkable film is provided with a heat reflecting surface.

5. The roof cover system of claim 4 wherein said heat shrinkable film forms a permanent sarking layer.

6. The roof cover system of any one of claims 1 to 5 wherein said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

7. The roof cover system of claim 6 wherein said mechanical means include a temporary batten affixed under eaves of said roof.

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8. The roof cover system of any one of claims 1 to 7 wherein said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

9. The roof cover system of any one of claims 1 to 8 wherein said heat shrinkable film is a film of low-density polyethylene.

10. The roof cover system of claim 9 wherein said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

11. A method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a length of said film from said roll sufficient to extend from one edge of said roof structure to an opposite edge,

(c) attaching a trailing end of said length at an edge of said roof structure,

(d) taking a leading edge of said length to said opposite edge,

(e) attaching said leading end of said length at said opposite edge,

(f) applying heat with a heat gun to said length of heat shrinkable film.

12. The method of claim 11 wherein said roof structure comprises an existing roof damaged through wind shear or impact.

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13. The method of claim 11 wherein said roof structure comprises unclad roof framing of a building under construction.

14. The method of any one of claims 11 to 13 wherein said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a sarking layer under roof cladding.

15. The method of any one of claims 11 to 14 wherein said trailing end and said leading end of said length are attached by means of a batten affixed under outer ends of rafters of said roof structure.

16. The method of any one of claims 11 to 15 wherein said trailing end and said leading end of said length of film are attached by means of a batten affixed under eaves of said roof structure; portions of each said trailing and said leading end wrapped around a said batten.

17. The method of any one of claims 11 to 16 wherein said method further includes the steps of:

(a) securing an outer edge of a side of said length of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure,

(b) adding successive lengths of said heat shrinkable film sufficient to cover said roof structure or a damaged area of said roof structure,

(c) providing an overlap between adjoining said successive lengths of said film,

(d) heat welding said overlap between said adjoining lengths.

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ABSTRACT

A roof cover system for damaged or uncompleted roofs; said cover system including a heat shrinkable film stretched over a said damaged or uncompleted roof; said film brought into conformity with surfaces of said roof through application of heat.

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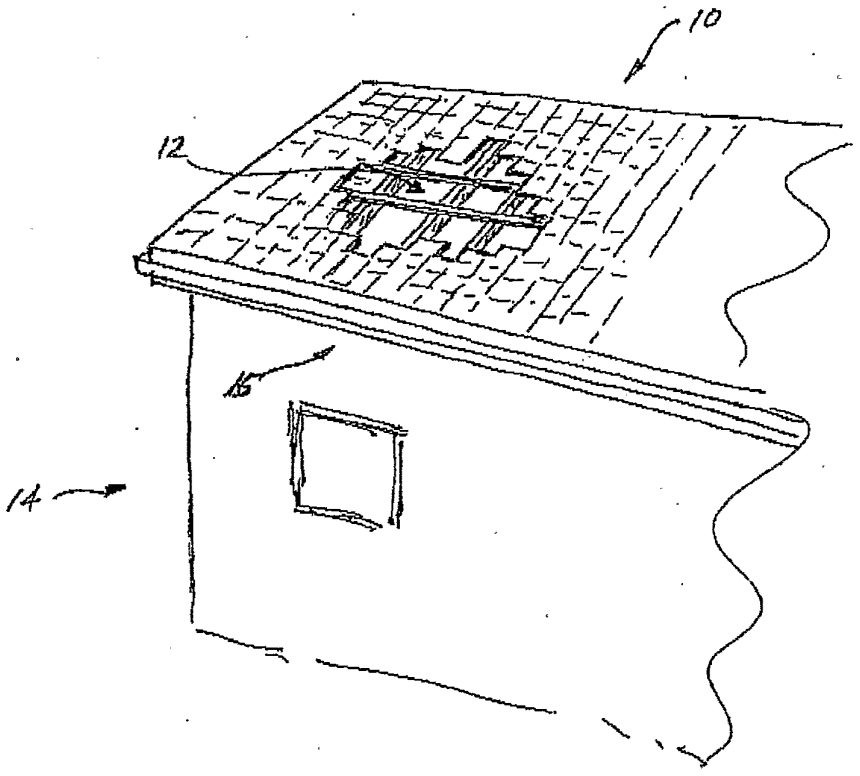


Fig. 1

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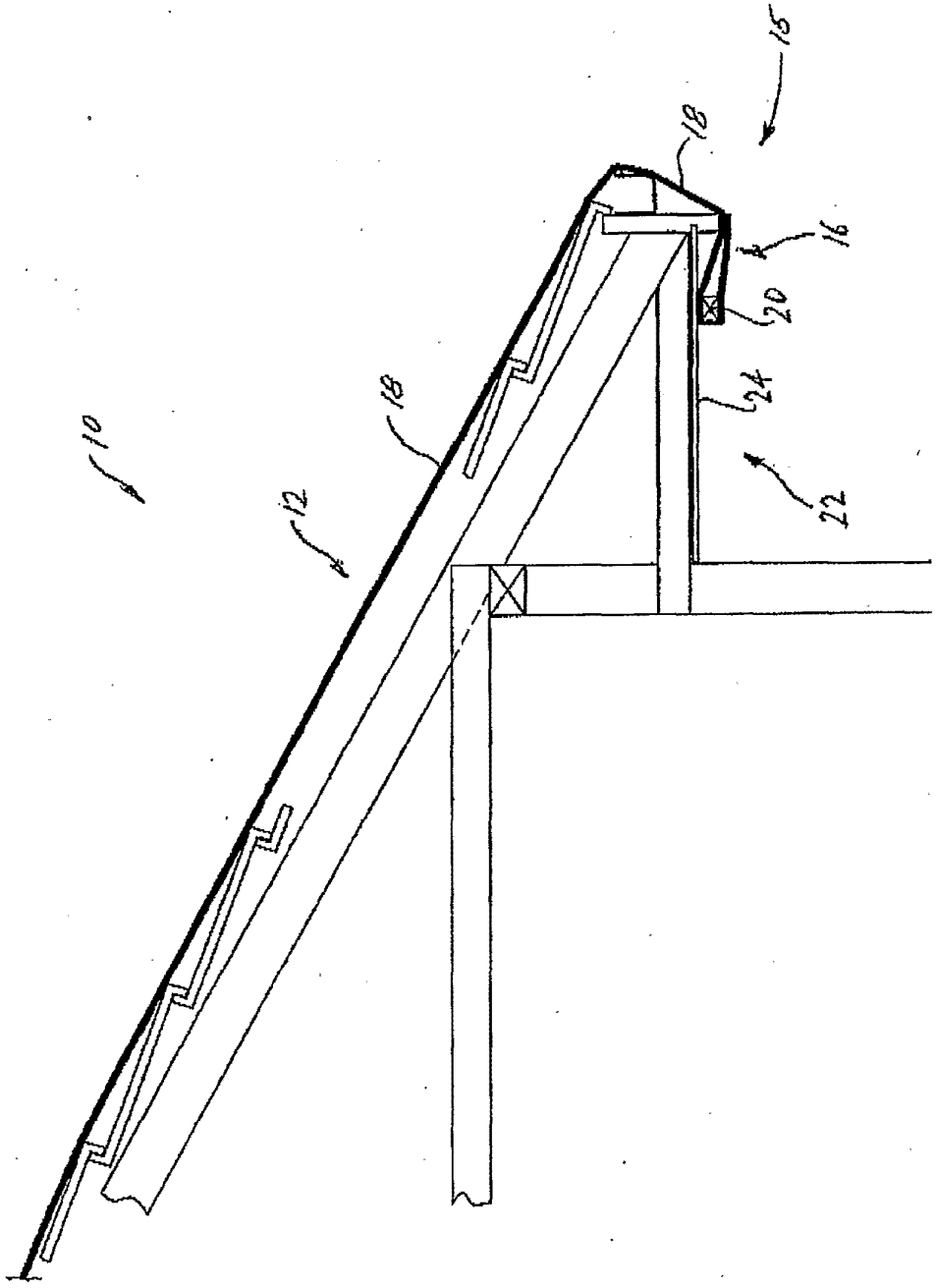


Fig. 2

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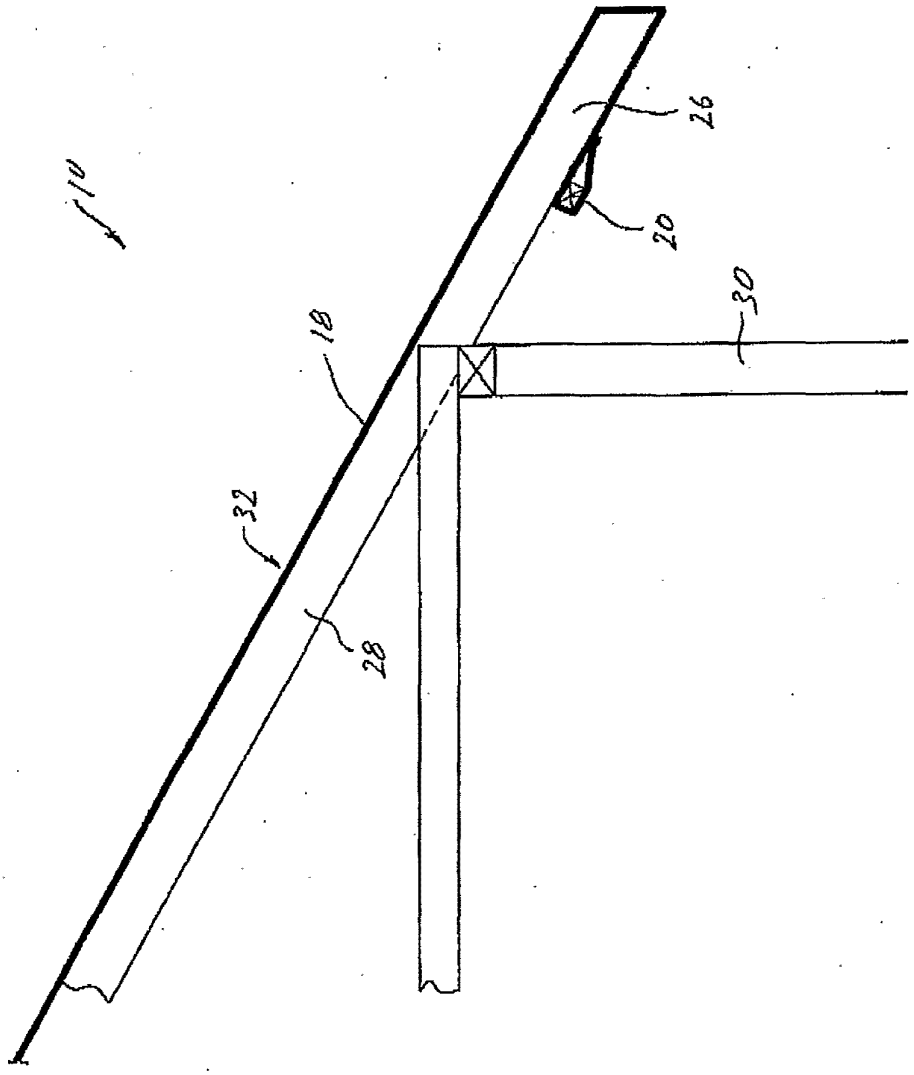


Fig. 3

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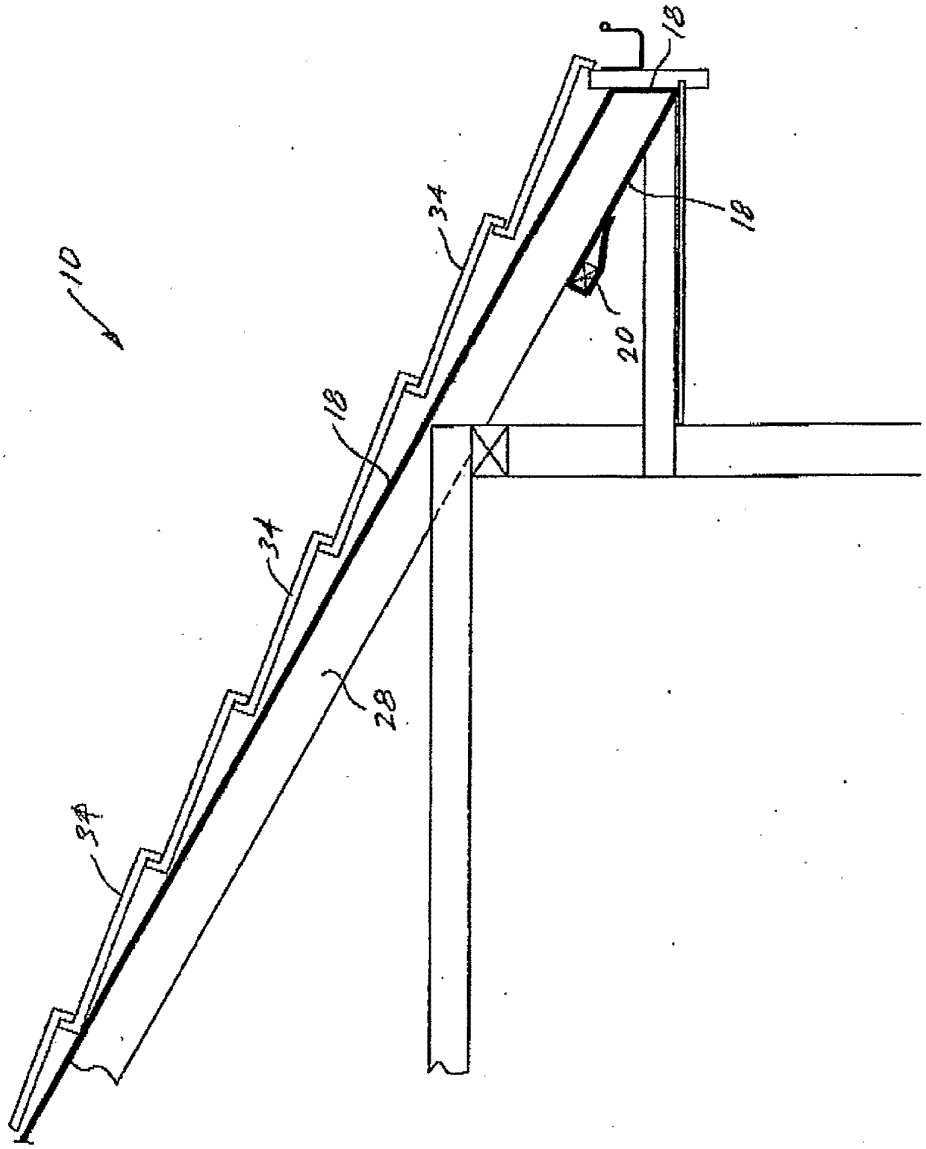


Fig. 4

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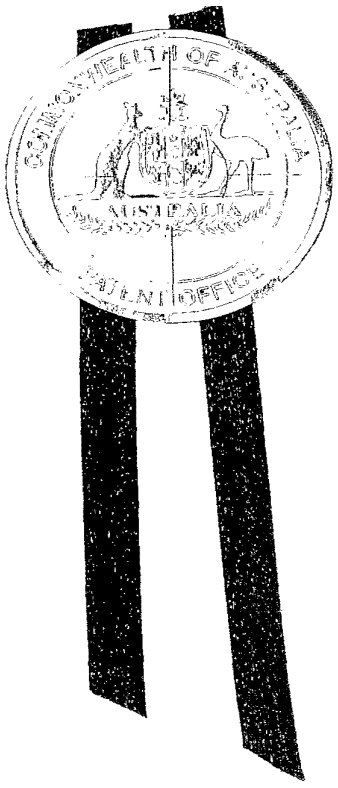
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I, MARIA LEWIS, EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Complete specification in connection with Application No. 2008203409 for a patent by CASE FILE MANAGEMENT SYSTEMS PTY LTD as filed on 30 July 2008.



WITNESS my hand this
Sixteenth day of July 2009

M. Lewis.

MARIA LEWIS
EXAMINATION SUPPORT AND SALES

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P/00/009

Regulation 3.2

AUSTRALIA

Patents Act 1990

COMPLETE SPECIFICATION for a DIVISIONAL APPLICATION

Invention Title:

ROOF COVER SYSTEM

The invention is described in the following statement, including the best means of performing the invention known to us:

Our Ref: 082032

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ROOF COVER SYSTEM

The present invention relates to protective covering of roofs and, more particularly, to the covering of damaged or under construction roofs.

BACKGROUND

Roofs are susceptible to damage from high winds, rain or hail. Tiled roofs for example may have a considerable area of tiles either damaged from hail impact, or dislodged completely as the result of high intensity storms. Shingled roofs are liable to be similarly damaged, and even metal sheeted roofs may suffer partial or total removal of one or more sheets. Damage to roofs may also be caused by the impact of falling trees or large branches.

Storm or impact damage cannot usually be immediately repaired so that to prevent further or potential damage to the interior of the building, temporary covering must be provided. Typically canvas (or similar material) tarpaulins are placed over the damaged part of the roof and secured to the structure by ropes.

One disadvantage of this method of temporary covering is the difficulty of adequately securing a tarpaulin to the roof so that they remain very vulnerable to dislodgement should high winds prevail or recur and often require continuing attention and adjustment. Moreover, they are

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heavy and awkward to position, posing occupational health and safety issues. A further disadvantage is that they are expensive to acquire and bulky to store, and if the many roofs are damaged in one storm event, the number of tarpaulins available may be inadequate.

Buildings under construction, particularly timber framed, brick clad dwellings, are frequently constructed in a sequence where the timber frame, including that of the roof, is completed a considerable time before the roof cladding can be added. A disadvantage of this construction technique is that during this period the timber of the structure, which may even include timber or particle board flooring, is liable to deterioration from water and sun. A further disadvantage of this sequence of construction is that, if rain intervenes at the time further internal work is scheduled, the lack of roof covering may cause considerable delay and financial loss.

A system of covering a roof with a film of material for the purpose of preventing damage from wind shear was disclosed in US 2005/0217202. However this US application teaches a method of application of the film from a roll of film hoisted up onto the roof surface, the film being unrolled in situ with overlapping edges of the film being secured by the application of adhesive tape. Rolls of film are heavy and in practice the manipulation of a roll of film and the edge taping required on even an intact roof

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surface is extremely difficult, if not dangerous and is completely impractical for application to the roof framing of an uncompleted building.

It is an object of the present invention to address or at least ameliorate some of the above disadvantages.

Notes

1. The term "comprising" (and grammatical variations thereof) is used in this specification in the inclusive sense of "having" or "including", and not in the exclusive sense of "consisting only of".
2. The above discussion of the prior art in the Background of the invention, is not an admission that any information discussed therein is citable prior art or part of the common general knowledge of persons skilled in the art in any country.

BRIEF DESCRIPTION OF INVENTION

Accordingly, in a first broad form of the invention, there is provided a roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

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Preferably, said heat shrinkable film provides a temporary waterproofing of a damaged roof.

Preferably, said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface.

Preferably, said heat shrinkable film forms a permanent heat reflecting layer.

Preferably, said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

Preferably, said mechanical means include a temporary batten affixed under eaves of said roof.

Preferably, said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

Preferably, said heat shrinkable film is a film of low-density polyethylene.

Preferably, said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

In another broad form of the invention, there is provided a method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

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(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) attaching a trailing end of said sheet at an edge of said roof structure,

(e) taking a leading edge of said sheet to said opposite edge,

(f) attaching said leading edge of said sheet at said opposite edge,

(g) applying heat with a heat gun to said sheet of heat shrinkable film.

Preferably, said roof structure comprises an existing roof damaged through wind shear or impact.

Preferably, said roof structure comprises unclad roof framing of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under outer ends of rafters of said roof structure.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under eaves of said roof structure; portions of each said

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trailing edge said leading edge wrapped around a said batten.

Preferably, said method further includes the step of:

(a) securing an outer edge of a side of said sheet of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure.

BRIEF DESCRIPTION OF DRAWINGS

Embodiments of the present invention will now be described with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a portion of a building of which the roof has sustained damage,

Figure 2 is a side sectioned view of a portion of a building and existing roof structure to which has been applied a roof cover system according to the invention,

Figure 3 is a side sectioned view of a portion of a partly completed building showing the application of a roof cover system of the invention to unclad roof framing,

Figure 4 is a further side sectioned view of the building of Figure 3 showing the roof cover system of the invention functioning as a permanent sarking layer,

Figure 5 is an illustration of the preparation of a sheet of heat shrinkable material prepared on a ground

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surface as an assembly of lengths of material taken from a roll of film.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The roof cover system of the present invention provides for a system and method for covering a damaged or uncompleted roof of a building. The system uses a heat shrinkable film, preferably a low-density polyethylene containing shrinking resins, UV inhibitors, anti brittling compounds and strengtheners for tear resistance. The film is preferably between 0.6 and 0.7mm in thickness and is provided in rolls of various widths and lengths. In at least one preferred form of the film, it is provided with a heat reflective surface.

First Preferred Embodiment

With reference now to Figure 1, typical damage to a tiled roof 10 of a building 12 may include the loss of a number of tiles 12 due to a high wind shear event, leaving the building 14 open to the ingress of water. Water ingress may also occur if tiles are cracked for example from heavy hail impact or falling trees or branches. Emergency temporary repair is provided by the roof cover system of the invention by applying the above described film over that portion of the roof which has sustained damage.

If required, sharp edges protruding from the roof surface may first be covered with suitable wadding and

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adhesive tape to prevent possible tearing of the film during application.

The extent of roof to be covered is measured and the most suitable available width roll of the heat shrinkable film selected. Film is cut to one or more lengths sufficient to extend from one edge of the roof to an opposite edge. With reference to Figure 2, a trailing edge of a length of film is mechanically attached at the first edge 16 of the roof 10. In one preferred method as shown in Figure 2, the trailing edge 15 of the film 18 is wrapped once around a length of batten 18, preferably as long as the width of the film, and the batten 20 mechanically fixed to the underside 22 of the eaves 24 at the first edge of the roof 10.

The leading edge is now passed over the roof to the opposite edge (not shown) of the roof and the leading edge secured to the opposite side eaves in similar manner to that already described. If the outer side edge of the length of film adjoins an edge of the roof, this may be similarly secured under the eaves along that side of the roof. Alternatively, the leading edge may be secured to the barge or fascia boards.

Heat is now applied to the film at the underside of the eaves 24 with a heat gun (not shown) to cause the film 18 to shrink securely around the batten and the undersides of the eaves. The heat gun, now attached to an extension

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arm (not shown), is then used to apply heat to the entire length of film 18 stretched over the roof surface, causing it to tightly conform to the surface and covering missing or cracked tiles 12.

If the extent of the damage requires, successive lengths of film can be applied side by side with an overlap of preferably 300mm. Heat is applied along these overlaps to seal the edges of the adjoining lengths together.

Valley areas and other discontinuities in the roof surface can be accommodated by cutting film to suit the are involve and heat sealing to adjoining film length edges. Vertical roof penetrations, such as chimney stacks ventilators and the like, are sealed by preferably a 300mm rise of film. Edges of riser sections of film can be taped or cable-tied to the penetration.

By the above means, a damaged roof can be rapidly and securely covered to prevent water ingress and damage to the inside of the building. Unlike tarpaulins which are difficult to secure an remain liable to dislodgement in high winds, the heat shrinkable film by conforming closely to the roof surface, provides a secure seal over the damage until permanent repairs can be made.

Second Preferred Embodiment

In a second preferred embodiment of the invention, a damaged section of a roof to be temporarily protected prior to permanent repair, is again covered by a heat shrinkable

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film. In this embodiment however, the method of application is different.

Instead of attempting to apply individual lengths of film, attaching a length at a first end to the eaves at one side of the roof, stretching the length over the roof to be attached at the eaves at the opposite side, and taping the edges of adjoining lengths of film together, the method of this embodiment is as follows:

(a) the location of the damaged section of roof is assessed in relation to the nearest opposing edges of the roof,

(b) the length of film required to extend between the opposing roof edges is estimated, allowing for overhang and fixing requirements,

(c) the width of the damaged area is ascertained and the number of lengths of the available film required to cover and overlap the damaged area determined,

(d) the number of lengths of material is then cut from a roll of the film and laid out side by side on the ground,

(e) while on the ground, adjoining edges of the lengths of film are taped to form a waterproof assembled sheet of heat shrinkable film, sufficient to stretch from one roof edge to the opposite roof

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edges and of sufficient width to cover the damaged area.

This assembled sheet is now pulled up onto the roof, positioned so as to cover the damaged area and outer ends fastened in similar manner as previously described above.

An advantage of this method is that there is no need to lift a relatively heavy roll of heat shrinkable material onto the roof and unroll it one what may be quite steep surfaces. Moreover it has been found in practice that the arrangement described in the first preferred embodiment above of taping the edges of adjoining lengths of the material together on the roof is both difficult and dangerous. This is especially so if the damage to the roof is extensive and perhaps been rendered structurally unsafe. The method of the present described embodiment minimises activity on the roof surface, requiring only that one edge of the sheet of material be carried over the roof from a first edge to an opposite edge.

Third Preferred Embodiment

In a third preferred embodiment of the invention, a heat shrinkable film may be applied to the roof framing of an uncompleted building. In this embodiment as shown in Figure 3, the heat shrinkable film 18 is applied after the roof framing is complete but preferably prior to the attachment of facia boards.

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In this embodiment also, lengths of film are prepared from suitable width rolls sufficient to stretch from one side of the roof to an opposite side. In this case the trailing and leading edges of the length of film are preferably attached by means of battens 20 fixed to the underside of the outer ends 26 of rafters 28, that is between the outer ends of the rafters 28 and the wall frame 30.

The heat shrinkable film 18 in this embodiment, is provided with a heat reflecting upper surface 32 so that the film 18 forms a permanent sarking layer beneath the roofing cladding, either tiles 34, as shown in Figure 4, or metal sheeting. Thus in this embodiment the heat shrinkable film of the invention act both to protect the timberwork of a building under construction and provides a replacement for conventional reflective sarking.

The weatherproof nature of the heat shrinkable material applied in this way provides for internal work on the building to continue in the event of inclement weather, thus increasing productivity and economy of construction.

It will be understood that the method of application described in the second preferred embodiment above is also, indeed perhaps even more so, applicable to the present embodiment. In this case manipulating a roll of material and taping edges of lengths of material together over the open framework of the roof of a building under construction

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is even more difficult so that assembly on the ground, perhaps into a number of sheets, prior to placement over the roof framing, is clearly advantageous.

The above describes only some embodiments of the present invention and modifications, obvious to those skilled in the art, can be made thereto without departing from the scope of the present invention.

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CLAIMS

1. A roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

2. The roof cover system of claim 1 wherein said heat shrinkable film provides a temporary waterproofing of a damaged roof.

3. The roof cover system of claim 1 wherein said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

4. The roof cover system of claim 1 wherein said heat shrinkable film is provided with a heat reflecting surface.

5. The roof cover system of claim 4 wherein said heat shrinkable film forms a permanent heat reflecting layer.

6. The roof cover system of any one of claims 1 to 5 wherein said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

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7. The roof cover system of claim 6 wherein said mechanical means include a temporary batten affixed under eaves of said roof.

8. The roof cover system of any one of claims 1 to 7 wherein said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

9. The roof cover system of any one of claims 1 to 8 wherein said heat shrinkable film is a film of low-density polyethylene.

10. The roof cover system of claim 9 wherein said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

11. A method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) attaching a trailing end of said sheet at an edge of said roof structure,

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(e) taking a leading edge of said sheet to said opposite edge,

(f) attaching said leading edge of said sheet at said opposite edge,

(g) applying heat with a heat gun to said sheet of heat shrinkable film.

12. The method of claim 11 wherein said roof structure comprises an existing roof damaged through wind shear or impact.

13. The method of claim 11 wherein said roof structure comprises unclad roof framing of a building under construction.

14. The method of claim 13 wherein said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

15. The method of any one of claims 11 to 14 wherein said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under outer ends of rafters of said roof structure.

16. The method of any one of claims 11 to 15 wherein said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under eaves of said roof structure; portions of each said trailing edge said leading edge wrapped around a said batten.

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17. The method of any one of claims 11 to 16 wherein said method further includes the step of:

(a) securing an outer edge of a side of said sheet of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure.

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ABSTRACT

18. A roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

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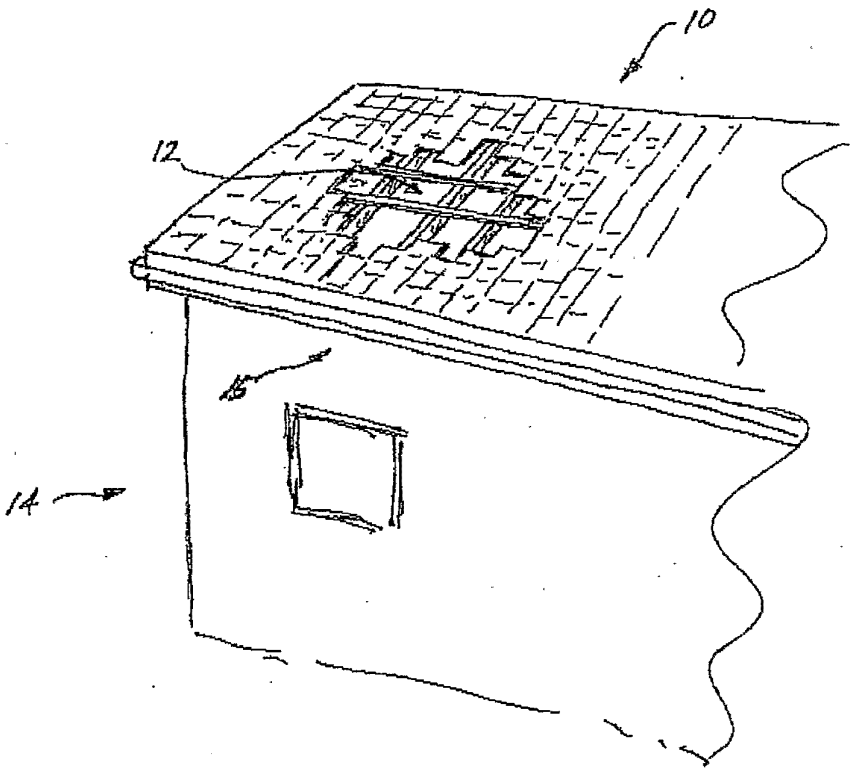


Fig. 1

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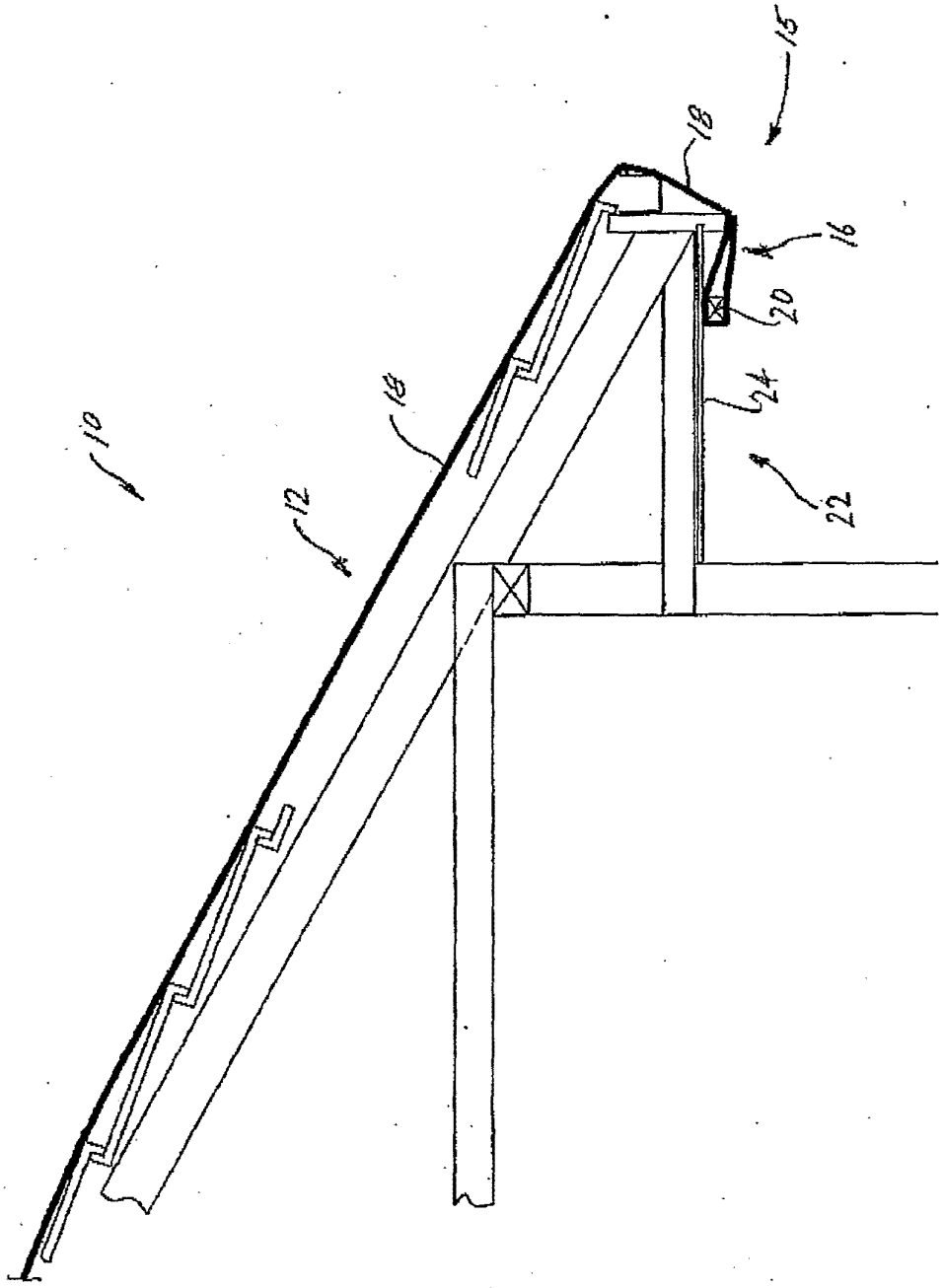


Fig. 2

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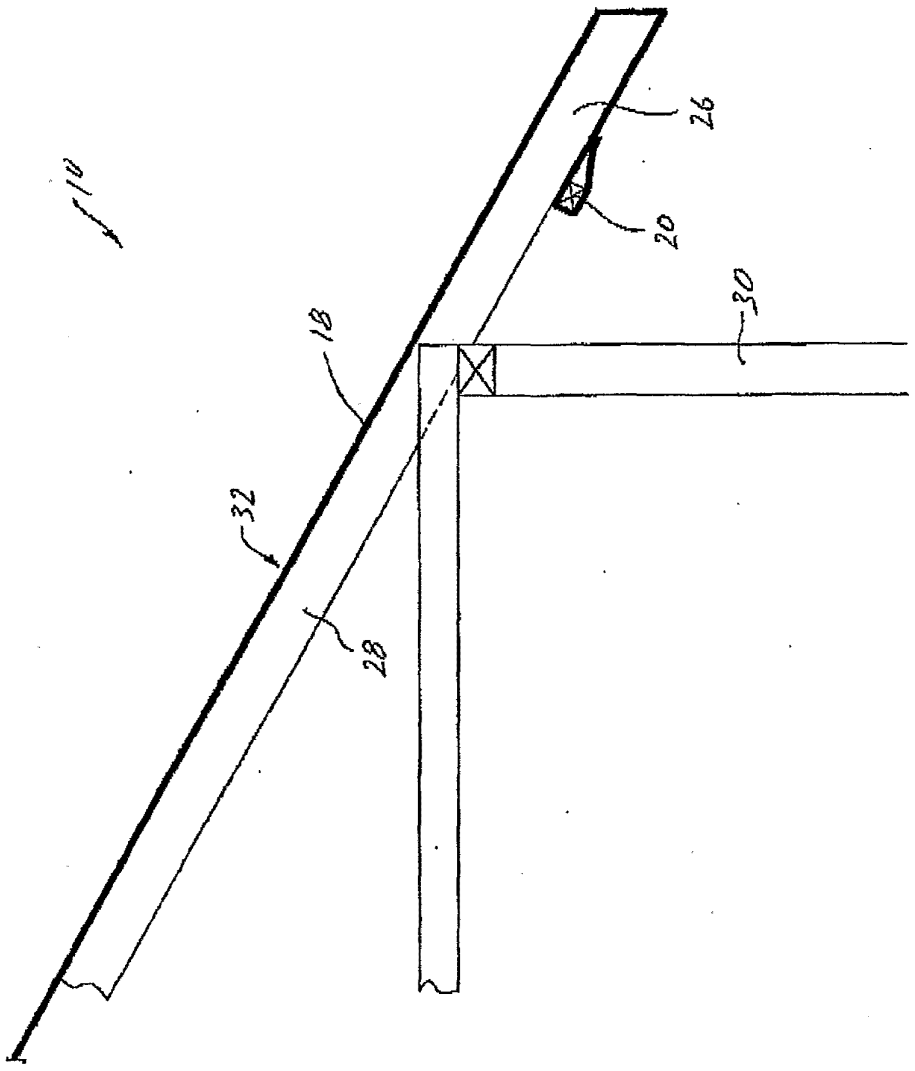


Fig. 3

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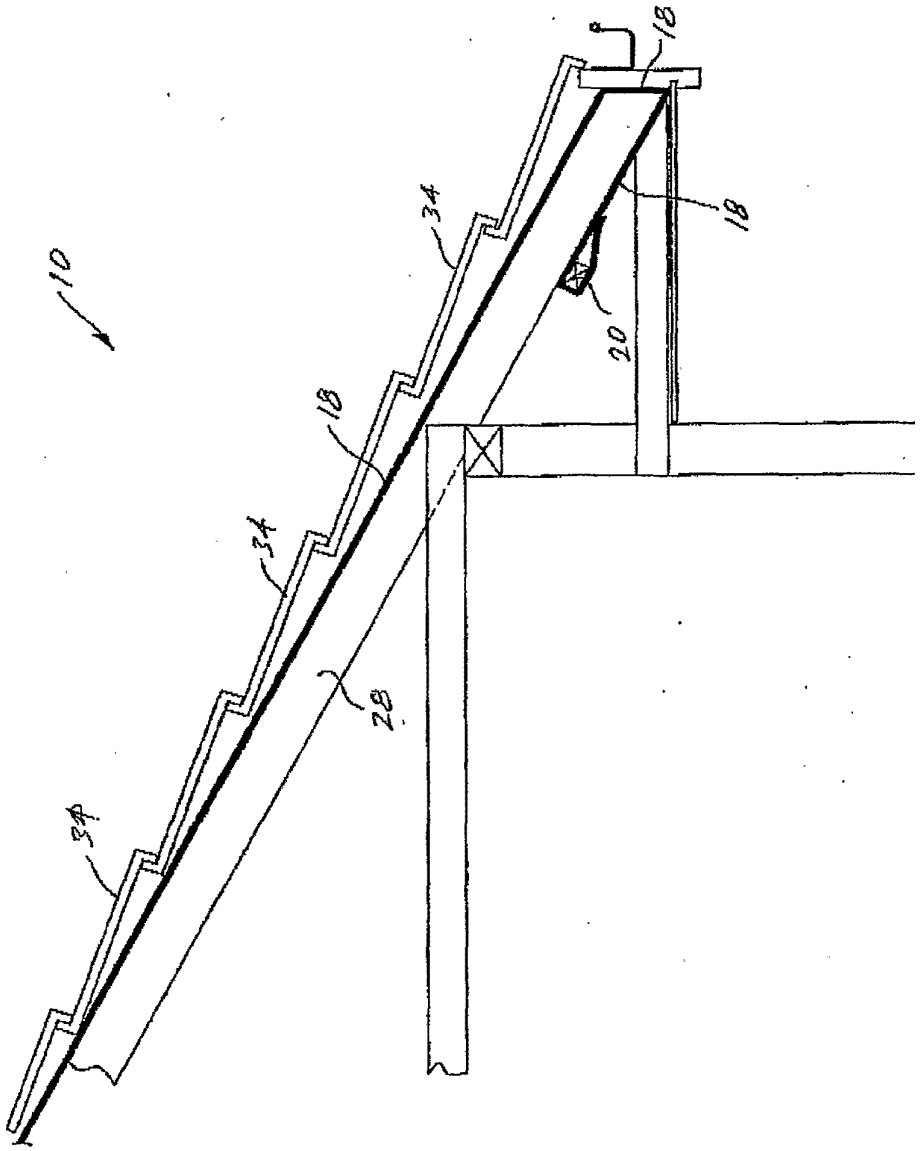


Fig. 4

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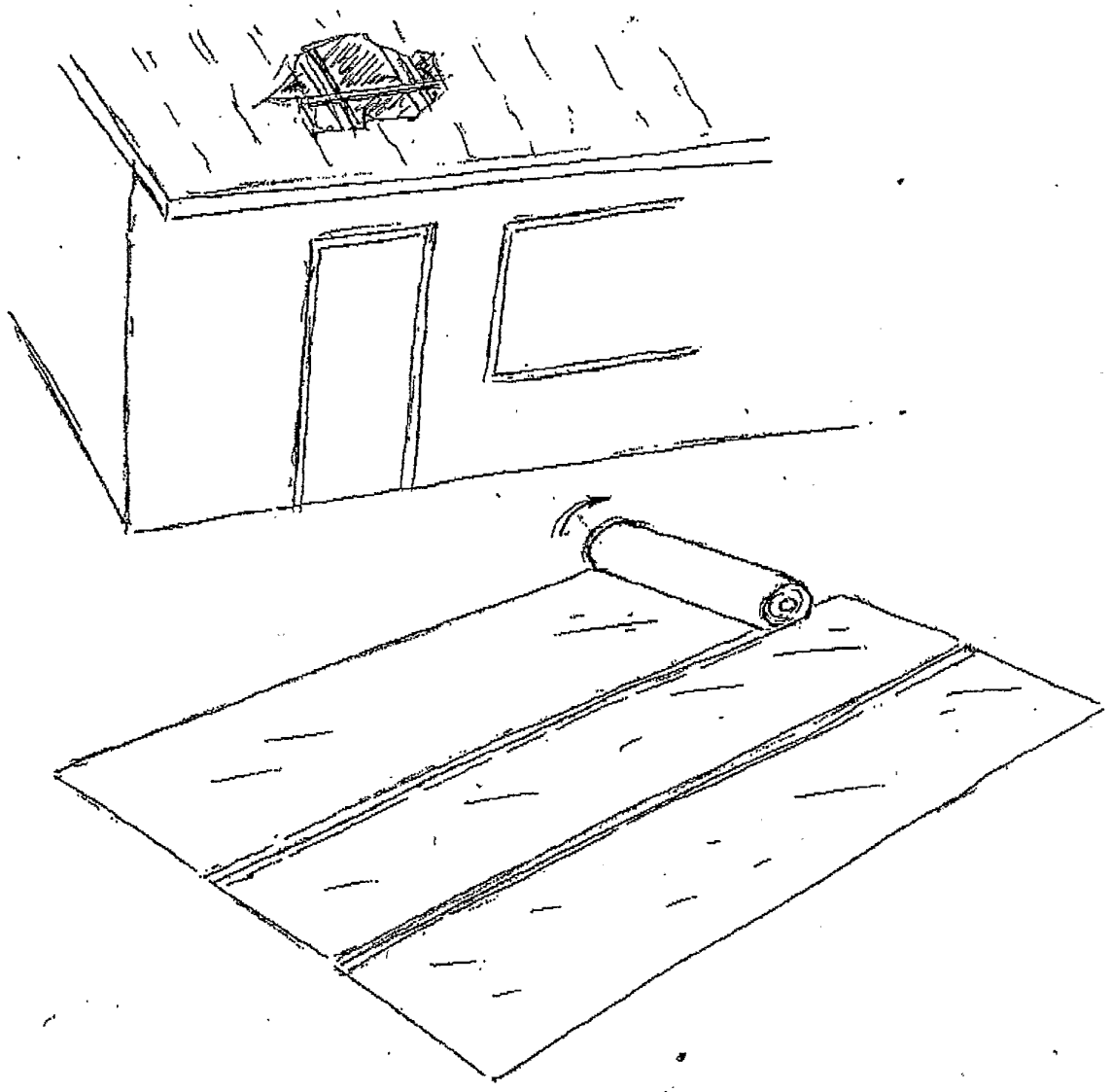


Fig. 5

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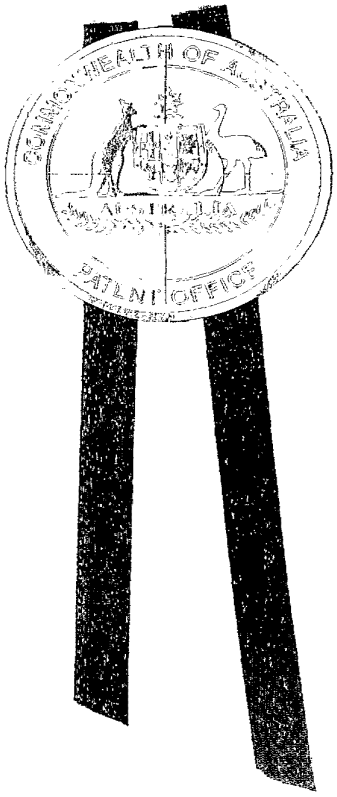
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I, MARIA LEWIS, EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Complete specification in connection with Application No. 2009200232 for a patent by CASE FILE MANAGEMENT SYSTEMS PTY LTD as filed on 22 January 2009.



WITNESS my hand this
Sixteenth day of July 2009

M. Lewis.

MARIA LEWIS
EXAMINATION SUPPORT AND SALES

2009200232 22 Jan 2009

P/00/009

Regulation 3.2

AUSTRALIA

Patents Act 1990

COMPLETE SPECIFICATION for a DIVISIONAL APPLICATION

Invention Title:

VENTED ROOF COVER SYSTEM

The invention is described in the following statement, including the best means of performing the invention known to us:

Our Ref: 082054

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VENTED ROOF COVER SYSTEM

The present invention relates to protective covering of roofs and, more particularly, to the covering of damaged or under construction roofs.

BACKGROUND

Roofs are susceptible to damage from high winds, rain or hail. Tiled roofs for example may have a considerable area of tiles either damaged from hail impact, or dislodged completely as the result of high intensity storms. Shingled roofs are liable to be similarly damaged, and even metal sheeted roofs may suffer partial or total removal of one or more sheets. Damage to roofs may also be caused by the impact of falling trees, large branches, or other objects made airborne under high wind conditions.

Storm or impact damage cannot usually be immediately repaired so that to prevent further or potential damage to the interior of the building, temporary covering must be provided. Typically canvas (or similar material) tarpaulins are placed over the damaged part of the roof and secured to the structure by ropes.

One disadvantage of this method of temporary covering is the difficulty of adequately securing a tarpaulin to the roof so that they remain very vulnerable to dislodgement should high winds prevail or recur and often require

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continuing attention and adjustment. Moreover, they are heavy and awkward to position, posing occupational health and safety issues. A further disadvantage is that they are expensive to acquire and bulky to store, and if the many roofs are damaged in one storm event, the number of tarpaulins available may be inadequate.

Buildings under construction, particularly timber framed, brick clad dwellings, are frequently constructed in a sequence where the timber frame, including that of the roof, is completed a considerable time before the roof cladding can be added. A disadvantage of this construction technique is that during this period the timber of the structure, which may even include timber or particle board flooring, is liable to deterioration from water and sun. A further disadvantage of this sequence of construction is that, if rain intervenes at the time further internal work is scheduled, the lack of roof covering may cause considerable delay and financial loss.

A system of covering a roof with a film of material for the purpose of preventing damage from wind shear was disclosed in US 2005/0217202. However this US application teaches a method of application of the film from a roll of film hoisted up onto the roof surface, the film being unrolled in situ with overlapping edges of the film being secured by the application of adhesive tape. Rolls of film are heavy and in practice the manipulation of a roll of

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film and the edge taping required on even an intact roof surface is extremely difficult, if not dangerous and is completely impractical for application to the roof framing of an uncompleted building.

It is known for both damaged roofs and uncompleted framed roofs, to prepare sufficiently assembled strips of film at ground level for subsequent application to the roof, as disclosed in the present applicant's patent AU2008203409. In practice however, it has been found that the sealing of an extensively damaged roof, or the covering of a roof still under construction by a continuous sheet of film material, can lead to unacceptable stress at the seams and attached edges of the sheet. This stress is due to wind action both passing over the sheet surface, and acting on the sheet from below.

It is an object of the present invention to address or at least ameliorate some of the above disadvantages.

Notes

1. The term "comprising" (and grammatical variations thereof) is used in this specification in the inclusive sense of "having" or "including", and not in the exclusive sense of "consisting only of".
2. The above discussion of the prior art in the Background of the invention, is not an admission that any information discussed therein is citable prior art or

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part of the common general knowledge of persons skilled in the art in any country.

BRIEF DESCRIPTION OF INVENTION

Accordingly, in a first broad form of the invention, there is provided a roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

Preferably, said heat shrinkable film provides a temporary waterproofing of a damaged roof.

Preferably, said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface.

Preferably, said heat shrinkable film forms a permanent heat reflecting layer.

Preferably, said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

Preferably, said mechanical means include a temporary batten affixed under eaves of said roof.

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Preferably, said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

Preferably, said heat shrinkable film is a film of low-density polyethylene.

Preferably, said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

In another broad form of the invention, there is provided a method of protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) attaching a trailing end of said sheet at an edge of said roof structure,

(e) taking a leading edge of said sheet to said opposite edge,

(f) attaching said leading edge of said sheet at said opposite edge,

(g) applying heat with a heat gun to said sheet of heat shrinkable film.

Preferably, said roof structure comprises an existing roof damaged through wind shear or impact.

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Preferably, said roof structure comprises unclad roof framing of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under outer ends of rafters of said roof structure.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under eaves of said roof structure; portions of each said trailing edge said leading edge wrapped around a said batten.

Preferably, said method further includes the step of:

(a) securing an outer edge of a side of said sheet of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure.

In another broad form of the invention, there is provided a vented roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet prepared with at least one vent element so as to allow communication between volumes of air

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within a roof space under said sheet and air above said sheet.

Preferably, said vent comprises a base portion and a flexible flap adapted to cover an aperture in said base portion so as to prevent ingress of rain water.

Preferably, said base portion is proved with an adhesive layer; said adhesive layer exposed by removal of a peel-off protective cover layer; said vent affixed over an aperture prepared in said sheet.

Preferably, said sheet is positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

Preferably, said heat shrinkable film provides a temporary waterproofing of a damaged roof.

Preferably, said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface.

Preferably, said heat shrinkable film forms a permanent heat reflecting layer.

Preferably, said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

Preferably, said mechanical means include a temporary batten affixed under eaves of said roof.

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Preferably, said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

Preferably, said heat shrinkable film is a film of low-density polyethylene.

Preferably, said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

In still another broad form of the invention, there is provided a method of preparing a sheet of heat shrinkable material for protecting a roof structure from water ingress; said method including the steps of:

(a) selecting a roll of heat shrinkable film of suitable width,

(b) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(c) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(d) cutting at least one aperture into said sheet of material,

(e) affixing a vent over said aperture so as to allow communication between air volumes above and below said sheet of material.

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Preferably, said method includes the further steps of:

(a) attaching a trailing end of said sheet at an edge of said roof structure,

(b) taking a leading edge of said sheet to said opposite edge,

(c) attaching said leading edge of said sheet at said opposite edge,

(d) applying heat with a heat gun to said sheet of heat shrinkable film.

Preferably, said roof structure comprises an existing roof damaged through wind shear or impact.

Preferably, said roof structure comprises unclad roof framing of a building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under outer ends of rafters of said roof structure.

Preferably, said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under eaves of said roof structure; portions of each said trailing edge said leading edge wrapped around a said batten.

Preferably, said method further includes the step of:

(a) securing an outer edge of a side of said sheet of heat shrinkable film to an edge of said roof

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structure where said side adjoins a said edge of said roof structure.

BRIEF DESCRIPTION OF DRAWINGS

Embodiments of the present invention will now be described with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a portion of a building of which the roof has sustained damage,

Figure 2 is a side sectioned view of a portion of a building and existing roof structure to which has been applied a roof cover system according to the invention,

Figure 3 is a side sectioned view of a portion of a partly completed building showing the application of a roof cover system of the invention to unclad roof framing,

Figure 4 is a further side sectioned view of the building of Figure 3 showing the roof cover system of the invention functioning as a permanent sarking layer,

Figure 5 is an illustration of the preparation of a sheet of heat shrinkable material prepared on a ground surface as an assembly of lengths of material taken from a roll of film,

Figure 6 is a perspective view of a portion of heat shrinkable material in position over a section of roof in which the sheets of material were prior prepared with air vents,

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Figure 6a is a perspective view of one preferred embodiment of the air vents of Figure 6.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The roof cover system of the present invention provides for a system and method for covering a damaged or uncompleted roof of a building. The system uses a heat shrinkable film, preferably a low-density polyethylene containing shrinking resins, UV inhibitors, anti brittling compounds and strengtheners for tear resistance. The film is preferably between 0.6 and 0.7mm in thickness and is provided in rolls of various widths and lengths. In at least one preferred form of the film, it is provided with a heat reflective surface.

First Preferred Embodiment

With reference now to Figure 1, typical damage to a tiled roof 10 of a building 12 may include the loss of a number of tiles 12 due to a high wind shear event, leaving the building 14 open to the ingress of water. Water ingress may also occur if tiles are cracked for example from heavy hail impact or falling trees or branches. Emergency temporary repair is provided by the roof cover system of the invention by applying the above described film over that portion of the roof which has sustained damage.

If required, sharp edges protruding from the roof surface may first be covered with suitable wadding and

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adhesive tape to prevent possible tearing of the film during application.

The extent of roof to be covered is measured and the most suitable available width roll of the heat shrinkable film selected. Film is cut to one or more lengths sufficient to extend from one edge of the roof to an opposite edge. With reference to Figure 2, a trailing edge of a length of film is mechanically attached at the first edge 16 of the roof 10. In one preferred method as shown in Figure 2, the trailing edge 15 of the film 18 is wrapped once around a length of batten 18, preferably as long as the width of the film, and the batten 20 mechanically fixed to the underside 22 of the eaves 24 at the first edge of the roof 10.

The leading edge is now passed over the roof to the opposite edge (not shown) of the roof and the leading edge secured to the opposite side eaves in similar manner to that already described. If the outer side edge of the length of film adjoins an edge of the roof, this may be similarly secured under the eaves along that side of the roof. Alternatively, the leading edge may be secured to the barge or fascia boards.

Heat is now applied to the film at the underside of the eaves 24 with a heat gun (not shown) to cause the film 18 to shrink securely around the batten and the undersides of the eaves. The heat gun, now attached to an extension

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arm (not shown), is then used to apply heat to the entire length of film 18 stretched over the roof surface, causing it to tightly conform to the surface and covering missing or cracked tiles 12.

If the extent of the damage requires, successive lengths of film can be applied side by side with an overlap of preferably 300mm. Heat is applied along these overlaps to seal the edges of the adjoining lengths together.

Valley areas and other discontinuities in the roof surface can be accommodated by cutting film to suit the are involve and heat sealing to adjoining film length edges. Vertical roof penetrations, such as chimney stacks ventilators and the like, are sealed by preferably a 300mm rise of film. Edges of riser sections of film can be taped or cable-tied to the penetration.

By the above means, a damaged roof can be rapidly and securely covered to prevent water ingress and damage to the inside of the building. Unlike tarpaulins which are difficult to secure an remain liable to dislodgement in high winds, the heat shrinkable film by conforming closely to the roof surface, provides a secure seal over the damage until permanent repairs can be made.

Second Preferred Embodiment

In a second preferred embodiment of the invention, a damaged section of a roof to be temporarily protected prior to permanent repair, is again covered by a heat shrinkable

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film. In this embodiment however, the method of application is different.

Instead of attempting to apply individual lengths of film, attaching a length at a first end to the eaves at one side of the roof, stretching the length over the roof to be attached at the eaves at the opposite side, and taping the edges of adjoining lengths of film together, the method of this embodiment, with reference to Figure 5 is as follows:

(a) the location of the damaged section 12 of roof 10 is assessed in relation to the nearest opposing edges of the roof,

(b) the length of film required to extend between the opposing roof edges is estimated, allowing for overhang and fixing requirements,

(c) the width of the damaged area is ascertained and the number of lengths of the available film required to cover and overlap the damaged area determined,

(d) the number of lengths of material 18 is then cut from a roll 40 of the film and laid out side by side on the ground,

(e) while on the ground, adjoining edges of the lengths of film are taped to form a waterproof assembled sheet of heat shrinkable film, sufficient to stretch from one roof edge to the opposite roof

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edges and of sufficient width to cover the damaged area.

This assembled sheet is now pulled up onto the roof, positioned so as to cover the damaged area and outer ends fastened in similar manner as previously described above.

An advantage of this method is that there is no need to lift a relatively heavy roll of heat shrinkable material onto the roof and unroll it one what may be quite steep surfaces. Moreover it has been found in practice that the arrangement described in the first preferred embodiment above of taping the edges of adjoining lengths of the material together on the roof is both difficult and dangerous. This is especially so if the damage to the roof is extensive and perhaps been rendered structurally unsafe. The method of the present described embodiment minimises activity on the roof surface, requiring only that one edge of the sheet of material be carried over the roof from a first edge to an opposite edge.

Third Preferred Embodiment

In a third preferred embodiment of the invention, a heat shrinkable film may be applied to the roof framing of an uncompleted building. In this embodiment as shown in Figure 3, the heat shrinkable film 18 is applied after the roof framing is complete but preferably prior to the attachment of facia boards.

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In this embodiment also, lengths of film are prepared from suitable width rolls sufficient to stretch from one side of the roof to an opposite side. In this case the trailing and leading edges of the length of film are preferably attached by means of battens 20 fixed to the underside of the outer ends 26 of rafters 28, that is between the outer ends of the rafters 28 and the wall frame 30.

The heat shrinkable film 18 in this embodiment, is provided with a heat reflecting upper surface 32 so that the film 18 forms a permanent sarking layer beneath the roofing cladding, either tiles 34, as shown in Figure 4, or metal sheeting. Thus in this embodiment the heat shrinkable film of the invention act both to protect the timberwork of a building under construction and provides a replacement for conventional reflective sarking.

The weatherproof nature of the heat shrinkable material applied in this way provides for internal work on the building to continue in the event of inclement weather, thus increasing productivity and economy of construction.

It will be understood that the method of application described in the second preferred embodiment above is also, indeed perhaps even more so, applicable to the present embodiment. In this case manipulating a roll of material and taping edges of lengths of material together over the open framework of the roof of a building under construction

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is even more difficult so that assembly on the ground, perhaps into a number of sheets, prior to placement over the roof framing, is clearly advantageous.

In each of the above described embodiments, the sheet of material may be further prepared, as shown in Figure 6, by adding a distribution of air vents 100 at various locations in each of the strips 18. Preferably, the vents 100, as shown in Figures 6 and 6A, take the form of one-way covers or flaps 110 which are affixed over an aperture 112 cut into the strips of film 18 at the desired location. The flaps 110 are so arranged as to prevent the ingress of rainwater while allowing the passage of air.

In one preferred form the vent 100 is pre-formed of low density polyethylene and provided with a self adhesive base 114. To apply the vent 100 after the aperture has been prepared, a protective cover 116 is peeled off the adhesive layer of base 114 and the vent 100 pressed into position.

These vents allow the exhalation of air from underneath the sheet of material, either as a result of higher air pressure arising within the roof space, for example through rising warm air or through the ingress of wind, or due to negative pressure above the sheet material.

The above describes only some embodiments of the present invention and modifications, obvious to those

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skilled in the art, can be made thereto without departing from the scope of the present invention.

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CLAIMS

1. A vented roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet prepared with at least one vent element so as to allow communication between volumes of air within a roof space under said sheet and air above said sheet.
2. The vented roof cover system of claim 1 wherein said vent comprises a base portion and a flexible flap adapted to cover an aperture in said base portion so as to prevent ingress of rain water.
3. The vented roof cover system of claim 1 or 2 wherein said base portion is proved with an adhesive layer; said adhesive layer exposed by removal of a peel-off protective cover layer; said vent affixed over an aperture prepared in said sheet.
4. The vented roof cover system of any one of claims 1 to 3 wherein said sheet is positioned on said roof and brought into conformity with surfaces of said roof through application of heat.

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5. The vented roof cover system of any one of claims 1 to 3 wherein said heat shrinkable film provides a temporary waterproofing of a damaged roof.

6. The vented roof cover system of any one of claims 1 to 3 wherein said heat shrinkable film provides a temporary waterproofing of an unclad roof of a building under construction.

7. The vented roof cover system of any one of claims 1 to 3 wherein said heat shrinkable film is provided with a heat reflecting surface.

8. The vented roof cover system of claim 7 wherein said heat shrinkable film forms a permanent heat reflecting layer.

9. The vented roof cover system of any one of claims 1 to 8 wherein said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof.

10. The vented roof cover system of claim 9 wherein said mechanical means include a temporary batten affixed under eaves of said roof.

11. The vented roof cover system of any one of claims 1 to 10 wherein said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

12. The vented roof cover system of any one of claims 1 to 11 wherein said heat shrinkable film is a film of low-density polyethylene.

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13. The vented roof cover system of claim 12 wherein said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

14. A method of preparing a sheet of heat shrinkable material for protecting a roof structure from water ingress; said method including the steps of:

(f) selecting a roll of heat shrinkable film of suitable width,

(g) cutting a required number of lengths of said film from said roll; said lengths sufficient to extend from one edge of said roof structure to an opposite edge, and sufficient to cover at least a portion of said roof,

(h) assembling at least two lengths of said heat shrinkable film laid out along a ground surface into a sheet of material,

(i) cutting at least one aperture into said sheet of material,

(j) affixing a vent over said aperture so as to allow communication between air volumes above and below said sheet of material.

15. The method of claim 12 wherein said method includes the further steps of:

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(e) attaching a trailing end of said sheet at an edge of said roof structure,

(f) taking a leading edge of said sheet to said opposite edge,

(g) attaching said leading edge of said sheet at said opposite edge,

(h) applying heat with a heat gun to said sheet of heat shrinkable film.

16. The method of claim 14 wherein said roof structure comprises an existing roof damaged through wind shear or impact.

17. The method of claim 14 wherein said roof structure comprises unclad roof framing of a building under construction.

18. The method of claim 16 wherein said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

19. The method of any one of claims 14 to 17 wherein said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under outer ends of rafters of said roof structure.

20. The method of any one of claims 14 to 18 wherein said trailing edge and said leading edge of said sheet are attached by means of a batten affixed under eaves

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of said roof structure; portions of each said trailing edge said leading edge wrapped around a said batten.

21. The method of any one of claims 14 to 19 wherein said method further includes the step of:

(b) securing an outer edge of a side of said sheet of heat shrinkable film to an edge of said roof structure where said side adjoins a said edge of said roof structure.

22. A vented roof cover system for damaged or uncompleted roofs as hereinbefore particularly described with reference to what is shown in the accompanying drawings.

23. A method of preparing a sheet of heat shrinkable material for protecting a roof structure from water ingress as hereinbefore particularly described with reference to what is shown in the accompanying drawings.

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ABSTRACT

A vented roof cover system for damaged or uncompleted roofs; said cover system including a film of heat shrinkable material stretched over a said damaged or uncompleted roof; said film formed as a sheet comprising an assembly of lengths of said heat shrinkable material prepared on a ground surface; said sheet prepared with at least one vent element so as to allow communication between volumes of air within a roof space under said sheet and air above said sheet.

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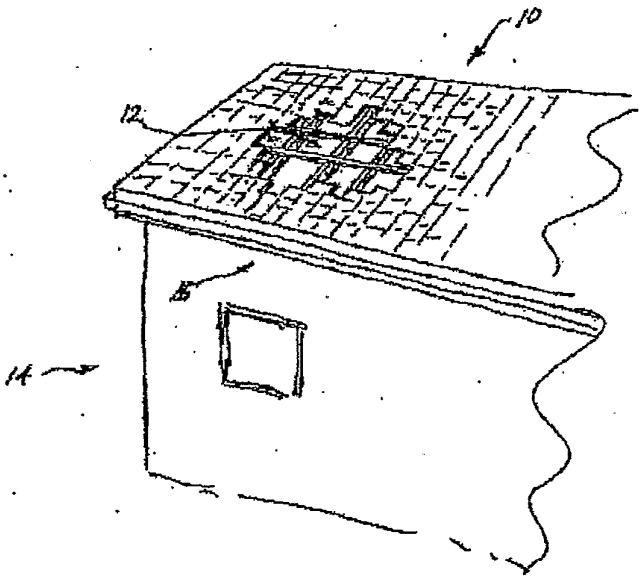


Fig. 1

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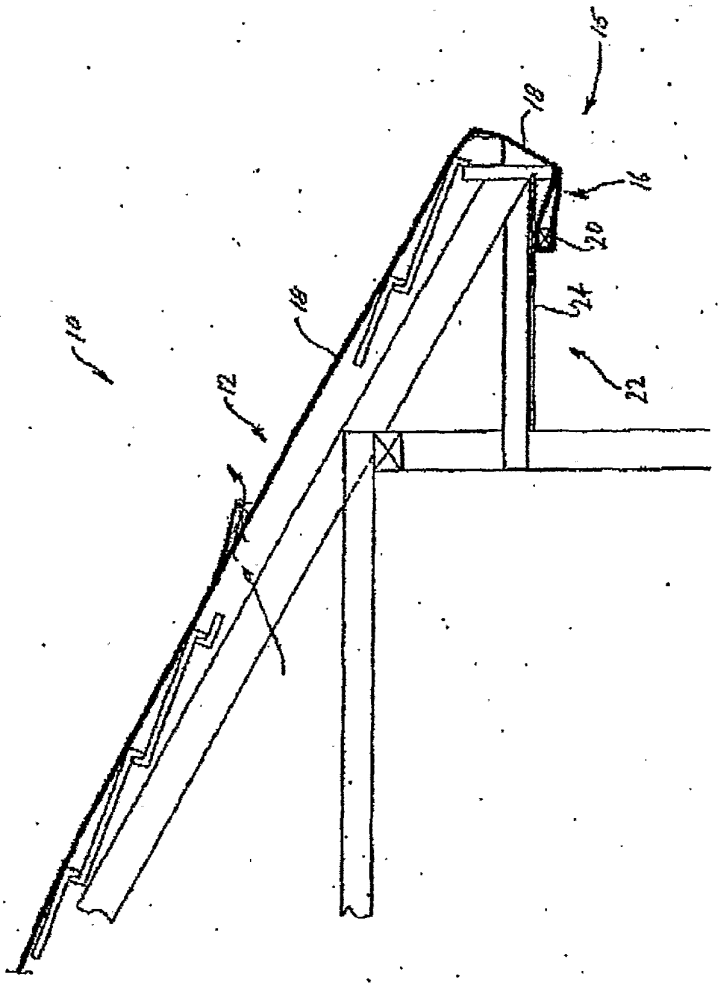


Fig. 2

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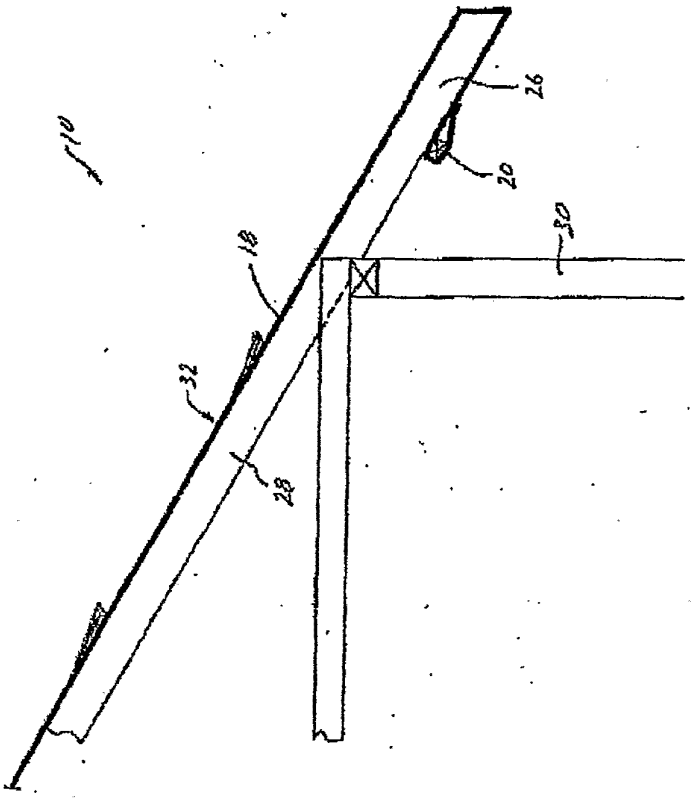


Fig. 3

COMS ID No: ARCS-220881 Received by IP Australia: Time (H:m) 15:01 Date (Y-M-d) 2009-01-22

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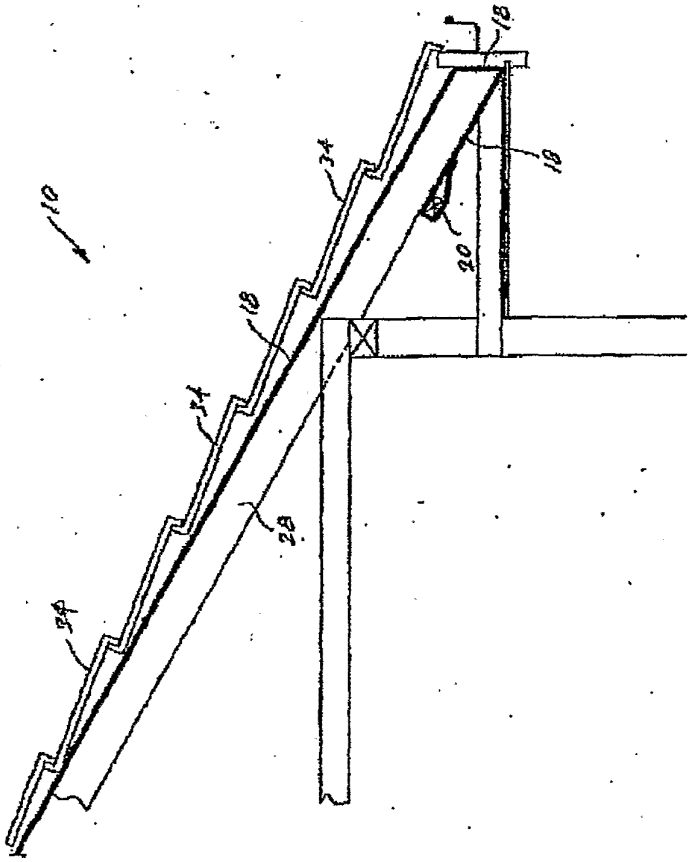


Fig. 4

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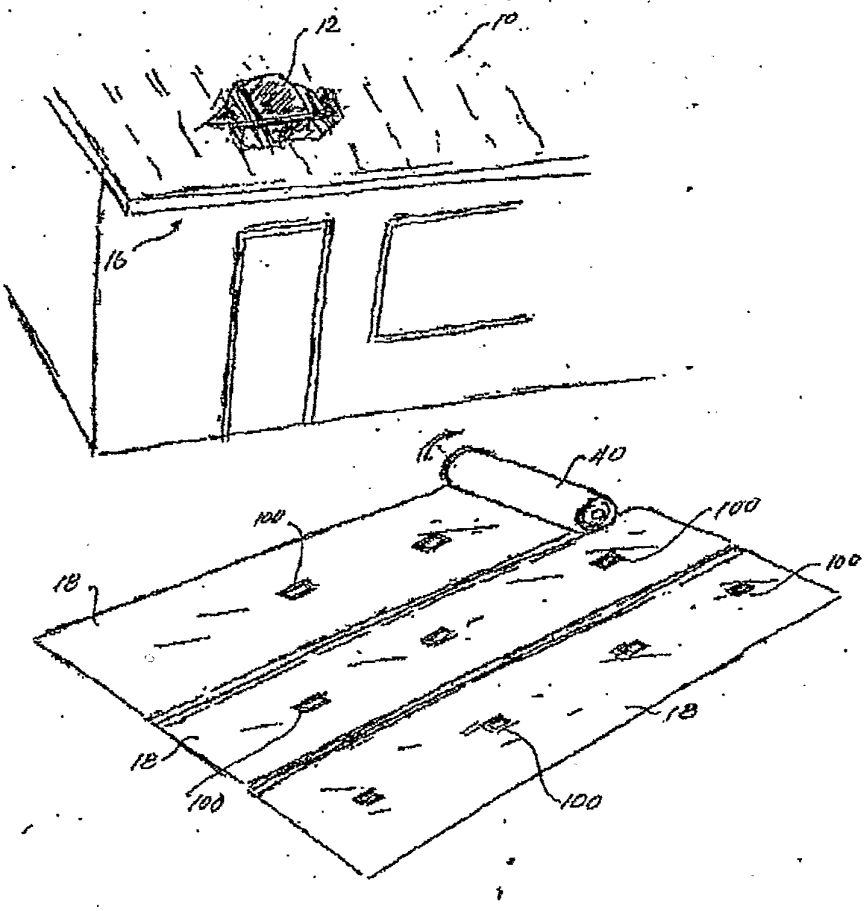


Fig. 5

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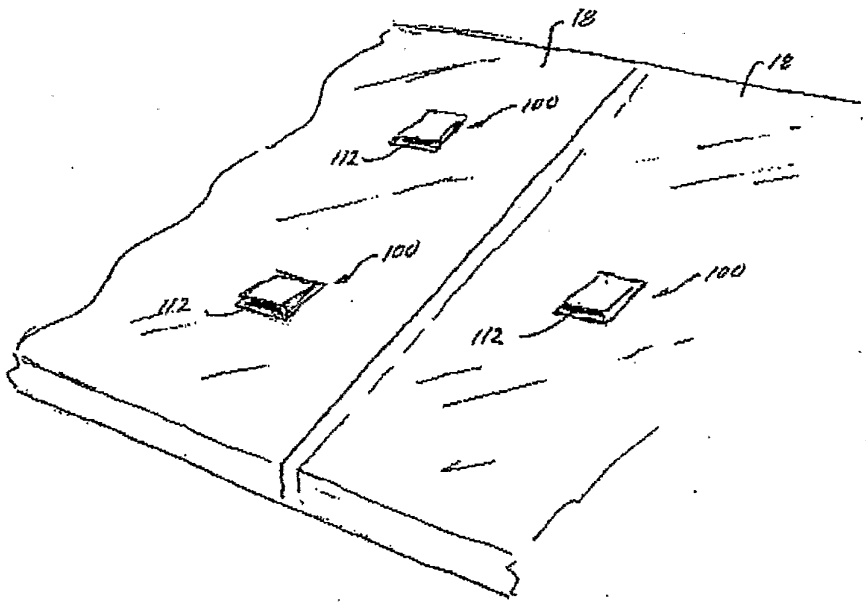


Fig. 6

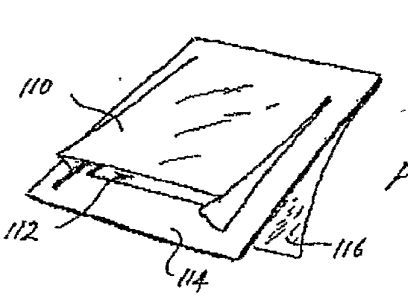


Fig. 6A

Document made available under the Patent Cooperation Treaty (PCT)

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International filing date: 02 June 2009 (02.06.2009)

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Number: 2008101060
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Date of receipt at the International Bureau: 03 August 2009 (03.08.2009)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse

Australian Government

Patent Office
Canberra

I, MICHAEL SHEEHAN, EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Complete specification in connection with Innovation Patent No. 2008101060 for a patent by RODNEY GORDON BURGE, ADAM GUY FARROW and MATTHEW JOHN LENNOX as filed on 30 October 2008.

WITNESS my hand this
Twenty-fourth day of July 2009

M J Sheehan

MICHAEL SHEEHAN
EXAMINATION SUPPORT AND SALES

2008101060 30 Oct 2008

AUSTRALIA
PATENTS ACT 1990

COMPLETE SPECIFICATION
INNOVATION PATENT

IMPROVED METHOD OF APPLYING BUILDING WRAP TO VERTICAL WALL STRUCTURES

The following statement is a full description of this invention, including the best method of performing it known to us:

IP Australia
30 OCT 2008

This invention relates to the construction and repair of buildings. More particularly it discloses an improved method of applying a weather or moisture resistant barrier or wrap to a building structure.

Such barriers or building wraps are particularly important for those structures that are constructed of timber framing. It is known to apply a weather resistant wrap over the timber studs of a building in order to resist the ingress of moisture. This moisture can cause unwanted structural movement in framework constructed from kiln dried timber. The material is typically in the form of a flexible plastic film such as polyethylene. Prior art practise for applying building wrap comprises first unrolling, measuring and cutting strips of wrap on the ground and then subsequently joining them to form a single sheet for subsequent nailing or stapling across the vertical walls or stud frame of a structure. Because of the slippery nature of the wrap material and difficulties in managing said wrap in windy conditions it is often extremely awkward or even dangerous to work at elevated locations. Also areas of slack or looseness can arise when the preformed sheet is nailed or stapled to the structure. This results in air pockets which may detract from the insulating and sealing properties of the wrap.

It is therefore an object of this invention to ameliorate the aforementioned disadvantages and accordingly a method of applying a moisture proof building wrap to a structure is disclosed, said method including the steps of :-

- procuring a roll of building wrap in the form of a heat shrinkable plastic film,

- attaching a free edge of said film to an inside perimeter edge of said structure and disposing an opposite leading edge of said film horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands of said film for fixing thereto, and

- applying heat to said bands to shrink the film tight against said structure.

Preferably a plurality of horizontal bands of film are applied in overlapping fashion to entirely cover said structure.

It is further preferred that the joints between said horizontal bands are sealed with tape.

It is further preferred that said heat is applied to the corner perimeters and top and bottom plate areas to shrink the film into sealing engagement with said structure.

It is further preferred that said bands are overlapped by about 300 mm.

It is further preferred that the film is then cut as required to accommodate wall penetrations such as windows and doors.

It is further preferred to cut around said wall penetrations allowing a minimum of 300 mm rise therearound and to subsequently apply additional

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heat to ensure film shrinkage back for a moisture tight seal against said structure.

It is further preferred to use a 150 um low density polyethylene film which contains fire retardant, reflective film, shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners. One film that is currently used is known under the brand name "Buildseal" and produced by Optimum Metallising Pty Ltd of Kings Park NSW.

One currently preferred embodiment of the invention will now be described with reference to the attached drawings in which:-

figure 1 shows a schematic perspective view of an impact or storm damaged building, and

figure 2 shows a schematic perspective view of a timber stud structure undergoing construction or renovation.

Referring first to figure 1 there is a cladded structure indicated generally as 1 with an area 2 of impact or storm damage in side wall 3. In accordance with the invention the structure is wrapped as defined above with horizontal bands 4 of a heat shrinkable polyethylene film. The bands preferably overlap by about 300 mm and are heated at the corner perimeters 4A and top and bottom plate areas 4d and 4C preferably using a hand held LPG heat gun or the like. The film then shrinks and seals tight against the building and also against itself along the overlapping joints 4D to exclude weather and moisture. Although not shown in the drawings a substructure batten type frame with diagonal bracing is preferably built over the damaged area 2 before the film is applied.

Structural Wrap Exhibit 1014, Page 189
Structural Wrap v Stormseal, IPR2024-00084

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With the timber stud structure 5 of figure 2 the building wrap is applied directly over the studs 6 in horizontal bands 1900 mm wide in a similar fashion to figure 1. While only the lower band 7 is shown adjacent the bottom plate 8 subsequent bands are applied as described earlier in overlapping fashion up to the top plate 9. Heat is then applied to the perimeter corners 10 and top and bottom plate areas to shrink the film to seal against itself along taped overlapping joints and also against the structure.

Preferably the film is provided with an outer reflective surface so as to also provide thermal insulation and a cost effective replacement for conventional wall sarking and insulation.

With both structures as mentioned earlier the film is cut after wrapping to accommodate doors, windows and other penetrations.

Other uses, benefits and advantages will become apparent from the following summary and preferred methodology for the invention.

CURRENTLY PREFERRED METHODOLOGY

- Select the correct width roll as it is important to have the least amount of welds in the sealing process
- Site measure the area which to be sealed
- Ensure any sharp object are padded
- Attach one side of the shrink wrap to the inside edge of perimeter stud work. Securely fix by a continuous batten.
- Take the leading edge of the said film across to the opposite side of the structure.
- Securely fix off the opposite side by continuous batten

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- Apply heat to the film wrapped stud in a continuous even pattern with a similar motion of a spray paint gun.
- Allow time for the film to shrink on to itself.
- Repeat this process to all vertical wall surfaces.
- Now using the heat gun extension tool apply an even continuous heat to the entirety of the vertical wall surface allowing enough passes for the shrink wrap to contract.
- Continue this process with overlapped joints of 300mm until the structure is covered entirely
- For wall penetrations such as windows and doors cut the plastic as required
- Allow to cut around all wall penetrations allowing a minimum of 300mm rise around all penetrations. Apply heat to ensure the film shrinks back onto the sub structure allowing a watertight seal
- Ensure all edges are sealed
- Continuously check for burn holes and patch as required
- For vertical impact damaged areas a sub structure frame will be required for the shrink wrap to be applied over. This is a simple batten type frame with diagonal bracing securely fixed to the structure.

USES

- Wall insulation and draught elimination
- Asbestos removal and disposal
- All weather protection during construction to eliminate lost time
- Cost effective weather seal for storm / impact damaged buildings or structures on vertical surfaces
- Replacement / substitution for Vertical tarpaulins installations
- Vertical timber framework protection during construction

BENEFITS

- Cost effective replacement for wall sarking / insualtion. Reflective surface provides excellent thermal qualities
- Provides excellent thermal insulation on walls
- Ensures kiln dried structural framework is not exposed to weather conditions eliminating structural movement
- Provides a dust free environment when removing asbestos
- Reduces residual cost and time during re construction of storm / impact damaged buildings and or structures
- Eliminates inclement weather days after main structure is in place therefore assisting productivity
- No ongoing hire cost as is for tarpaulins. Eliminates the need to re attend sites to secure tarpaulins during the reconstruction process

It will thus be appreciated that this invention at least in the form of the embodiment disclosed provides a novel and innovative method of applying building wrap to structures. Clearly however the example disclosed is only the currently preferred form of the invention and a wide variety of modifications may be made which would be apparent to a person skilled in the art. For example the type of heat shrinkable film may vary from that disclosed as well as the number, shape, overlap and configuration of the membrane strips applied to the structure.

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The claims defining the invention are as follows:-

1. A method of applying a moisture proof building wrap to a structure is disclosed, said method including the steps of :-

   - procuring a roll of building wrap in the form of a heat shrinkable plastic film,

   - attaching a free edge of said film to an inside perimeter edge of said structure and disposing an opposite leading edge of said film horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands of said film for fixing thereto, and

   - applying heat to said bands to shrink said film tight against said structure.

2. The method as claimed in claim 1 and including the further step of cutting the film to accommodate doors, windows and other penetrations.

3. The method as claimed in claim 1 wherein a plurality of bands of said film with taped overlapping joints are formed on said structure.

4. The method as claimed in claim 3 wherein said heat is applied to the perimeter corners and top and bottom plate areas of said structure.

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5. The method as claimed in claim 1 wherein said building wrap is a heat shrinkable polyethylene film.

Dated this 29th day of October 2008

Rodney Gordon Burge, Adam Guy
Farrow & Matthew John Lennox
By Their Patent Attorney
MICHAEL ANDERSON-TAYLOR

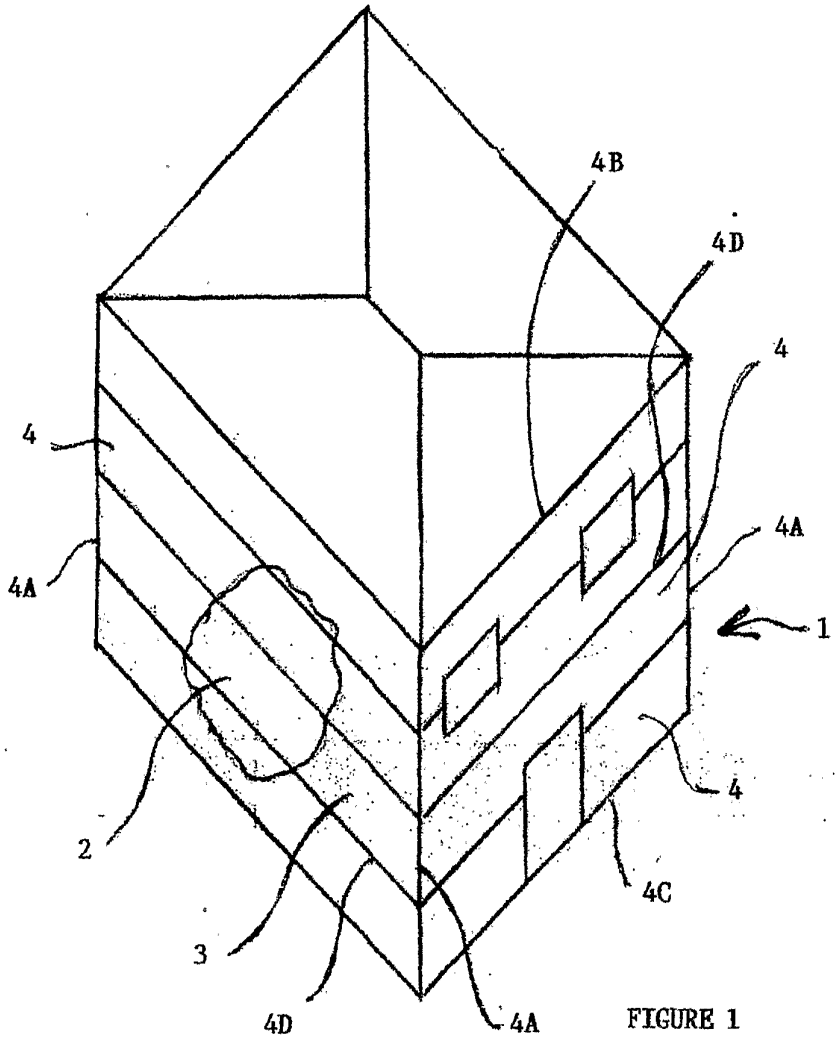


FIGURE 1

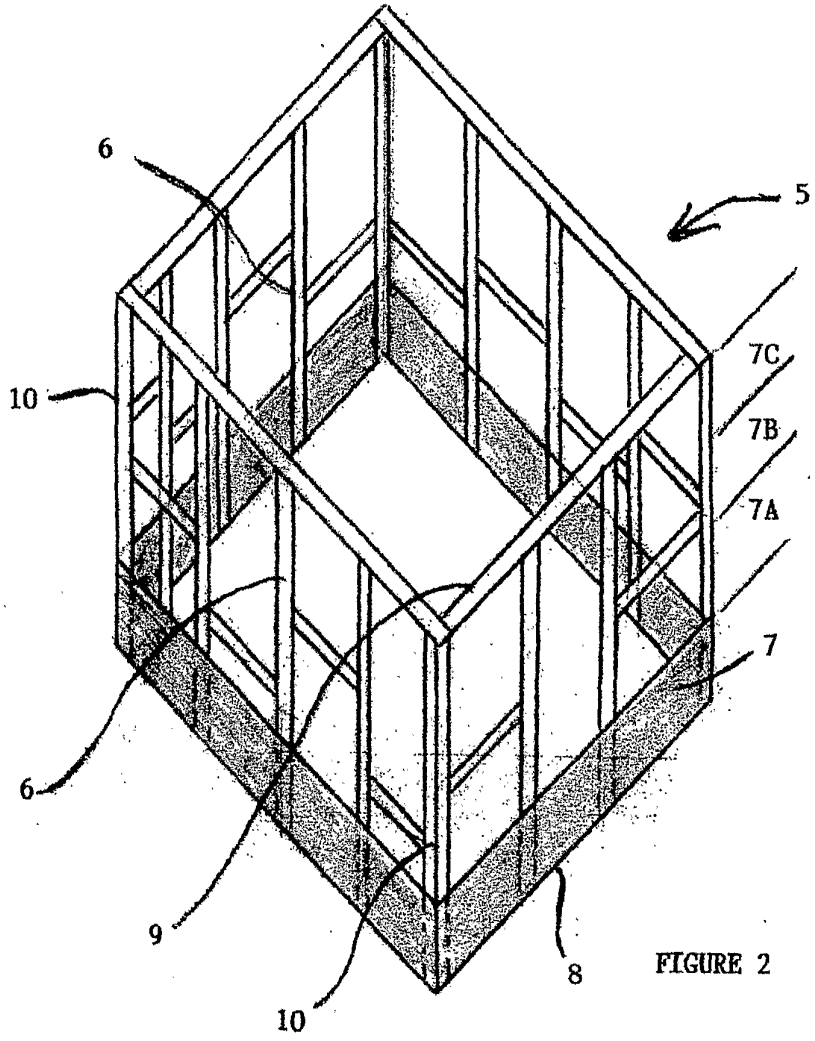


FIGURE 2

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/995,966	05/31/2011	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY ☐ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **12/02/2010**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0	X $ =		OR	X $52=	0
Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $ =		OR	X $220=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/STEVEN WHIBLEY/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET

(FOR USE WITH FORM PTO-875)

SERIAL NO.	FILING DATE
12/995,966	
APPLICANT(S)	

CLAIMS

	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT	
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1	1					
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3		1				
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TOTAL IND.		⬇	2	⬇		⬇
TOTAL DEP.		⬅	10	⬅		⬅
TOTAL CLAIMS		[redacted]	12	[redacted]		[redacted]

	AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT	
	IND.	DEP.	IND.	DEP.	IND.	DEP.
51						
52						
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100						
TOTAL IND.		⬇		⬇		⬇
TOTAL DEP.		⬅		⬅		⬅
TOTAL CLAIMS		[redacted]		[redacted]		[redacted]

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 2, 2008

Application or Docket Number: 12/995,966

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)	SMALL ENTITY RATE	SMALL ENTITY FEE	OR	LARGE ENTITY RATE	LARGE ENTITY FEE
U.S. NATIONAL STAGE FEES							
BASIC FEE	$330/ $165		BASIC FEE		OR	BASIC FEE	330
EXAMINATION FEE	$220/ $110		EXAM. FEE			EXAM. FEE	220
SEARCH FEE	$430/ $215		SEARCH FEE			SEARCH FEE	430
FEE FOR EXTRA SPEC. PGS.	minus 100 =	/ 50 =	X $ 135 =			X $ 270 =	
TOTAL CHARGEABLE CLAIMS	12 minus 20 =		X $ 26 =		OR	X $ 52 =	
INDEPENDENT CLAIMS	2 minus 3 =		X $ 110 =		OR	X $ 220 =	
MULTIPLE DEPENDENT CLAIM PRESENT	☐		+ $ 195 =		OR	+ $ 390 =	
			TOTAL		OR	TOTAL	980

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
AMENDMENT A	Total		Minus	**		X $ 26 =		OR	X $ 52 =	
	Independent		Minus	***		X $ 110 =		OR	X $ 220 =	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐					+ $ 195 =		OR	+ $ 390 =	
						TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
AMENDMENT B	Total		Minus	**		X $ 26 =		OR	X $ 52 =	
	Independent		Minus	***		X $ 110 =		OR	X $ 220 =	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐					+ $ 195 =		OR	+ $ 390 =	
						TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than "20", enter "20"

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than "3", enter "3"

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
12/995,966	Matthew LENNOX	9852-2

85936
Joseph Bain
Novak Druce & Quigg LLP
525 Okeechobee Blvd
Suite 1500
West Palm Beach, FL 33401

INTERNATIONAL APPLICATION NO.	
PCT/AU09/00685	
I.A. FILING DATE	PRIORITY DATE
06/02/2009	06/02/2008

CONFIRMATION NO. 4496
371 FORMALITIES LETTER

OC000000045181915

Date Mailed: 12/29/2010

NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as a Designated Office (37 CFR 1.494):

- Priority Document
- Copy of the International Application filed on 12/02/2010
- Copy of the International Search Report filed on 12/02/2010
- Preliminary Amendments filed on 12/02/2010
- U.S. Basic National Fees filed on 12/02/2010
- Priority Documents filed on 12/02/2010

The applicant needs to satisfy supplemental fees problems indicated below.

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

- Oath or declaration of the inventors, in compliance with 37 CFR 1.497(a) and (b), identifying the application by the International application number and international filing date.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.492(h) of $130 for a non-small entity, must be submitted with the missing items identified in this letter.

SUMMARY OF FEES DUE:

Total additional fees required for this application is $**130** for a Large Entity:

- $**130** Surcharge.

ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTHS FROM THE DATE OF THIS NOTICE OR BY 32 MONTHS FROM THE PRIORITY DATE FOR THE APPLICATION, WHICHEVER IS LATER. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.

The time period set above may be extended by filing a petition and fee for extension of time under the provisions of 37 CFR 1.136(a).

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.
https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

FORM PCT/DO/EO/905 (371 Formalities Notice)

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

NADINE V CLARK

Telephone: (703) 756-1411

FORM PCT/DO/EO/905 (371 Formalities Notice)

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 12/995,966

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	330
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	430
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	220
TOTAL CLAIMS (37 CFR 1.16(i))	12 minus 20 =	*			OR	x 52 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*				x 220 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $270 ($135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	980

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12995966
Filing Date	2010-12-02
First Named Inventor	LENNOX, Matthew
Art Unit	
Examiner Name	Not Yet Assigned
Attorney Docket Number	9852-2

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	4769962		1988-09-13	POHL, Ronald R.	
	2	6797218		2004-09-28	BICKERSTAFF, Othell	
	3	4818588		1989-04-04	OKABE, Mitsuo	
	4	6632496		2003-10-14	JOHNSON, Michael R.C.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050217202		2005-10-06	CROOK, Michael L.	
	2	20080060302		2008-03-13	BLETSOS, Ioannis V.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12995966
	Filing Date	2010-12-02
	First Named Inventor	LENNOX, Matthew
	Art Unit	
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	9852-2

	3	20080022620		2008-01-31	CROWLEY, Shawn	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	199466002	AU		1994-10-06	SMITH, Michael Frederick		☐
	2	2008202416	AU		2008-09-18	FARROW, Adam		☐
	3	2388815	GB		2003-11-26	AVRIL, David		☐
	4	2376206	GB		2002-12-11	WAIGHT, Stephen		☐
	5	0410275	EP		1991-01-30	GOTTLIEB, Ernest		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Written Opinion of the International Searching Authority, completed October 8, 2010 by the Australian Patent Office, for International Application PCT/AU2010/001026.	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12995966
	Filing Date	2010-12-02
	First Named Inventor	LENNOX, Matthew
	Art Unit	
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	9852-2

	2	English language translation of the Abstract of European Patent Application No. 0410275.	☐
	3	International Search Report of the International Searching Authority, completed October 8, 2010 by the Australian Patent Office, for International Application PCT/AU2010/001026.	☐
	4	International Search Report of the International Searching Authority, completed July 20, 2009 by the Australian Patent Office, for International Application PCT/AU2009/000685.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12995966
	Filing Date	2010-12-02
	First Named Inventor	LENNOX, Matthew
	Art Unit	
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	9852-2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/joseph w. bain/	Date (YYYY-MM-DD)	2011-02-09
Name/Print	Joseph W. Bain	Registration Number	34,290

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

AU9466002

(12) PATENT ABSTRACT (11) Document No. AU-A-66002/94
(19) AUSTRALIAN PATENT OFFICE

(Australian Petty Patent Application)

(54) Title
LAMINATE MATERIAL

(51)[5] International Patent Classification(s)
E04D 005/10 B32B 015/14 B32B 027/12 E04D 003/35
E04D 011/00

(21) Application No. : 66002/94 (22) Application Date : 27.06.94

(43) Publication Date : 06.10.94

(62) Related to Division(s) : 44376/93

(71) Applicant(s)
CSR LIMITED

(72) Inventor(s)
MICHAEL FREDERICK SMITH

(74) Attorney or Agent
SHELSTON WATERS , 55 Clarence Street, SYDNEY NSW 2000

(57) Claim

1. An insulating laminate material for use as a sarking membrane and roofing safety mesh, said laminate material comprising:

a reinforced backing sheet adhesively bonded on one side to an outer layer of foil,

said reinforced backing sheet having a water resistant coating on its outer side remote from said layer of foil.

 66002/94

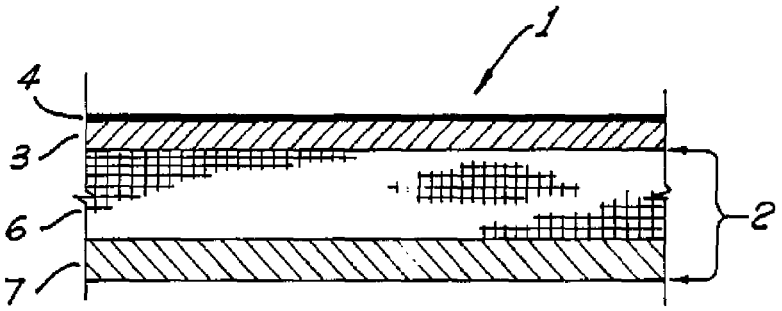


FIG. 1

(12) STANDARD PATENT (11) Application No. **AU 2008202416 B1**
(19) AUSTRALIAN PATENT OFFICE

(54) Title
Roof Cover System

(51) International Patent Classification(s)
E04G 21/28 (2006.01) ***E04D 5/06*** (2006.01)

(21) Application No: **2008202416** (22) Date of Filing: **2008.06.02**

(43) Publication Date: **2008.09.18**
(43) Publication Journal Date: **2008.09.18**
(44) Accepted Journal Date: **2008.09.18**

(71) Applicant(s)
Case File Management Systems Pty Ltd

(72) Inventor(s)
Farrow, Adam;Burge, Rodney;Lennox, Matthew

(74) Agent / Attorney
Wallington-Dummer, Suite 904 37 Bligh Street, Sydney, NSW, 2000

(56) Related Art
US2005/0217202

2008202416 04 Aug 2008

ABSTRACT

A roof cover of a building under construction; said cover comprising a heat shrinkable film stretched over the roof framing of said building under construction; said film brought into conformity with said roof framing through application of heat.

COMS ID No: ARCS-200802 Received by IP Australia: Time (H:m) 15:08 Date (Y-M-d) 2008-08-04

2008202416 02 Jun 2008

P/00/009

Regulation 3.2

AUSTRALIA

Patents Act 1990

COMPLETE SPECIFICATION

Invention Title:

ROOF COVER SYSTEM

The invention is described in the following statement, including the best means of performing the invention known to us:

Our Ref: 082024

2008202416 02 Jun 2008

ROOF COVER SYSTEM

The present invention relates to protective covering of roofs and, more particularly, to the covering of damaged or under construction roofs.

BACKGROUND

Roofs are susceptible to damage from high winds, rain or hail. Tiled roofs for example may have a considerable area of tiles either damaged from hail impact, or dislodged completely as the result of high intensity storms. Shingled roofs are liable to be similarly damaged, and even metal sheeted roofs may suffer partial or total removal of one or more sheets. Damage to roofs may also be caused by the impact of falling trees or large branches.

Storm or impact damage cannot usually be immediately repaired so that to prevent further or potential damage to the interior of the building, temporary covering must be provided. Typically canvas (or similar material) tarpaulins are placed over the damaged part of the roof and secured to the structure by ropes.

One disadvantage of this method of temporary covering is the difficulty of adequately securing a tarpaulin to the roof so that they remain very vulnerable to dislodgement should high winds prevail or recur and often require continuing attention and adjustment. Moreover, they are

2008202416 02 Jun 2008

heavy and awkward to position, posing occupational health and safety issues. A further disadvantage is that they are expensive to acquire and bulky to store, and if the many roofs are damaged in one storm event, the number of tarpaulins available may be inadequate.

Buildings under construction, particularly timber framed, brick clad dwellings, are frequently constructed in a sequence where the timber frame, including that of the roof, is completed a considerable time before the roof cladding can be added. A disadvantage of this construction technique is that during this period the timber of the structure, which may even include timber or particle board flooring, is liable to deterioration from water and sun. A further disadvantage of this sequence of construction is that, if rain intervenes at the time further internal work is scheduled, the lack of roof covering may cause considerable delay and financial loss.

It is an object of the present invention to address or at least ameliorate some of the above disadvantages.

Notes

1. The term "comprising" (and grammatical variations thereof) is used in this specification in the inclusive sense of "having" or "including", and not in the exclusive sense of "consisting only of".
2. The above discussion of the prior art in the Background of the invention, is not an admission that any

COMS ID No: ARCS-192763 Received by IP Australia: Time (H:m) 13:40 Date (Y-M-d) 2008-06-02

2008202416 04 Aug 2008

information discussed therein is citable prior art or part of the common general knowledge of persons skilled in the art in any country.

BRIEF DESCRIPTION OF INVENTION

Accordingly, in a first broad form of the invention, there is provided a roof cover of a building under construction; said cover comprising a heat shrinkable film stretched over the roof framing of said building under construction; said film brought into conformity with said roof framing through application of heat.

Preferably, said heat shrinkable film provides a temporary or permanent waterproofing of said building under construction.

Preferably, said heat shrinkable film is provided with a heat reflecting surface.

Preferably, said heat shrinkable film forms a permanent layer; said layer excluding inclement weather from said building under construction.

2008202416 04 Aug 2008

Preferably, said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof framing.

Preferably, said mechanical means include a temporary batten affixed under eaves of said roof framing.

Preferably, said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

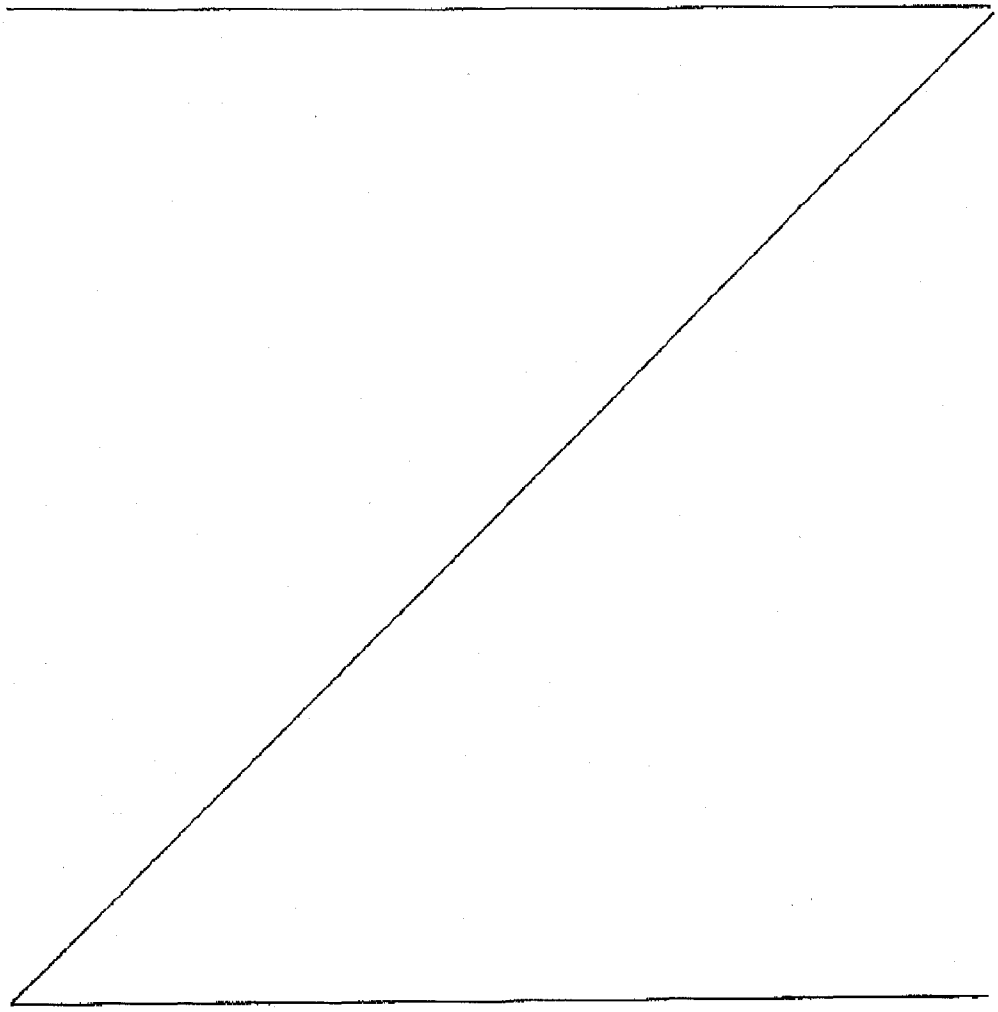
Preferably, said heat shrinkable film is a film of low-density polyethylene.

Preferably, said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

Preferably, said heat shrinkable film is retained as a permanent heat reflecting layer under subsequently applied permanent roof cladding.

COMS ID No: ARCS-200802 Received by IP Australia: Time (H:m) 15:08 Date (Y-M-D) 2008-08-04

2008202416 04 Aug 2008



BRIEF DESCRIPTION OF DRAWINGS

Embodiments of the present invention will now be described with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a portion of a building of which the roof has sustained damage,

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Figure 2 is a side sectioned view of a portion of a building and existing roof structure to which has been applied a roof cover system according to the invention,

Figure 3 is a side sectioned view of a portion of a partly completed building showing the application of a roof cover system of the invention to unclad roof framing,

Figure 4 is a further side sectioned view of the building of Figure 3 showing the roof cover system of the invention functioning as a permanent sarking layer,

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The roof cover system of the present invention provides for a system and method for covering a damaged or uncompleted roof of a building. The system uses a heat shrinkable film, preferably a low-density polyethylene containing shrinking resins, UV inhibitors, anti brittling compounds and strengtheners for tear resistance. The film is preferably between 0.6 and 0.7mm in thickness and is provided in rolls of various widths and lengths. In at least one preferred form of the film, it is provided with a heat reflective surface.

First Preferred Embodiment

With reference now to Figure 1, typical damage to a tiled roof 10 of a building 12 may include the loss of a number of tiles 12 due to a high wind shear event, leaving the building 14 open to the ingress of water. Water ingress

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may also occur if tiles are cracked for example from heavy hail impact or falling trees or branches. Emergency temporary repair is provided by the roof cover system of the invention by applying the above described film over that portion of the roof which has sustained damage.

If required, sharp edges protruding from the roof surface may first be covered with suitable wadding and adhesive tape to prevent possible tearing of the film during application.

The extent of roof to be covered is measured and the most suitable available width roll of the heat shrinkable film selected. Film is cut to one or more lengths sufficient to extend from one edge of the roof to an opposite edge. With reference to Figure 2, a trailing edge of a length of film is mechanically attached at the first edge 16 of the roof 10. In one preferred method as shown in Figure 2, the trailing edge 15 of the film 18 is wrapped once around a length of batten 18, preferably as long as the width of the film, and the batten 20 mechanically fixed to the underside 22 of the eaves 24 at the first edge of the roof 10.

The leading edge is now passed over the roof to the opposite edge (not shown) of the roof and the leading edge secured to the opposite side eaves in similar manner to that already described. If the outer side edge of the length of film adjoins an edge of the roof, this may be

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similarly secured under the eaves along that side of the roof. Alternatively, the leading edge may be secured to the barge or fascia boards.

Heat is now applied to the film at the underside of the eaves 24 with a heat gun (not shown) to cause the film 18 to shrink securely around the batten and the undersides of the eaves. The heat gun, now attached to an extension arm (not shown), is then used to apply heat to the entire length of film 18 stretched over the roof surface, causing it to tightly conform to the surface and covering missing or cracked tiles 12.

If the extent of the damage requires, successive lengths of film can be applied side by side with an overlap of preferably 300mm. Heat is applied along these overlaps to seal the edges of the adjoining lengths together.

Valley areas and other discontinuities in the roof surface can be accommodated by cutting film to suit the are involve and heat sealing to adjoining film length edges. Vertical roof penetrations, such as chimney stacks ventilators and the like, are sealed by preferably a 300mm rise of film. Edges of riser sections of film can be taped or cable-tied to the penetration.

By the above means, a damaged roof can be rapidly and securely covered to prevent water ingress and damage to the inside of the building. Unlike tarpaulins which are difficult to secure an remain liable to dislodgement in

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high winds, the heat shrinkable film by conforming closely to the roof surface, provides a secure seal over the damage until permanent repairs can be made.

Second Preferred Embodiment

In a second preferred embodiment of the invention, a heat shrinkable film may be applied to the roof framing of an uncompleted building. In this embodiment as shown in Figure 3, the heat shrinkable film 18 is applied after the roof framing is complete but preferably prior to the attachment of facia boards.

In this embodiment also, lengths of film are prepared from suitable width rolls sufficient to stretch from one side of the roof to an opposite side. In this case the trailing and leading edges of the length of film are preferably attached by means of battens 20 fixed to the underside of the outer ends 26 of rafters 28, that is between the outer ends of the rafters 28 and the wall frame 30.

The heat shrinkable film 18 in this embodiment, is provided with a heat reflecting upper surface 32 so that the film 18 forms a permanent sarking layer beneath the roofing cladding, either tiles 34, as shown in Figure 4, or metal sheeting. Thus in this embodiment the heat shrinkable film of the invention act both to protect the timberwork of a building under construction and provides a replacement for conventional reflective sarking.

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The weatherproof nature of the heat shrinkable material applied in this way provides for internal work on the building to continue in the event of inclement weather, thus increasing productivity and economy of construction.

The above describes only some embodiments of the present invention and modifications, obvious to those skilled in the art, can be made thereto without departing from the scope of the present invention.

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CLAIMS

1. A roof cover of a building under construction; said cover comprising a heat shrinkable film stretched over the roof framing of said building under construction; said film brought into conformity with said roof framing through application of heat.

2. The roof cover of claim 1 wherein said heat shrinkable film provides a temporary or permanent waterproofing of said building under construction.

3. The roof cover of claim 1 wherein said heat shrinkable film is provided with a heat reflecting surface.

4. The roof cover of claim 3 wherein said heat shrinkable film forms a permanent layer; said layer excluding inclement weather from said building under construction.

5. The roof cover of any one of claims 2 to 4 wherein said heat shrinkable film is retained by mechanical means at edges of a said damaged or uncompleted roof framing.

6. The roof cover of claim 6 wherein said mechanical means include a temporary batten affixed under eaves of said roof framing.

7. The roof cover of any one of claims 1 to 6 wherein said heat shrinkable film has a thickness of between 0.6 and 0.7mm.

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8. The roof cover of any one of claims 1 to 8 wherein said heat shrinkable film is a film of low-density polyethylene.

9. The roof cover ~~system~~ of claim 8 wherein said heat shrinkable film includes shrinking resins, UV inhibitors, anti-brittling compounds and strengtheners.

10. The roof cover of any one of claims 1 to 9 wherein said heat shrinkable film is retained as a permanent heat reflecting layer under subsequently applied permanent roof cladding.

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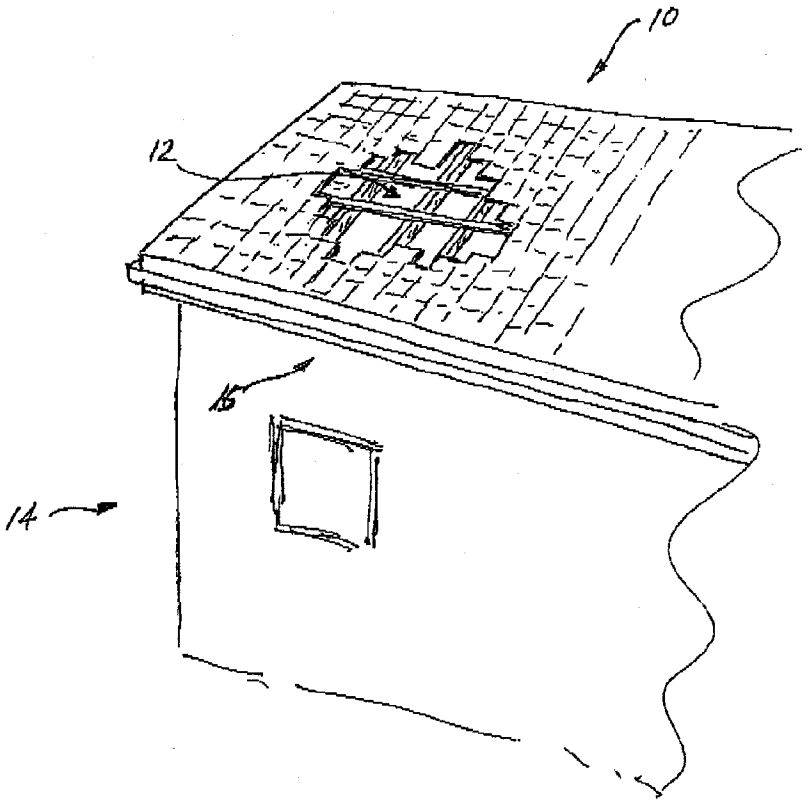


Fig. 1

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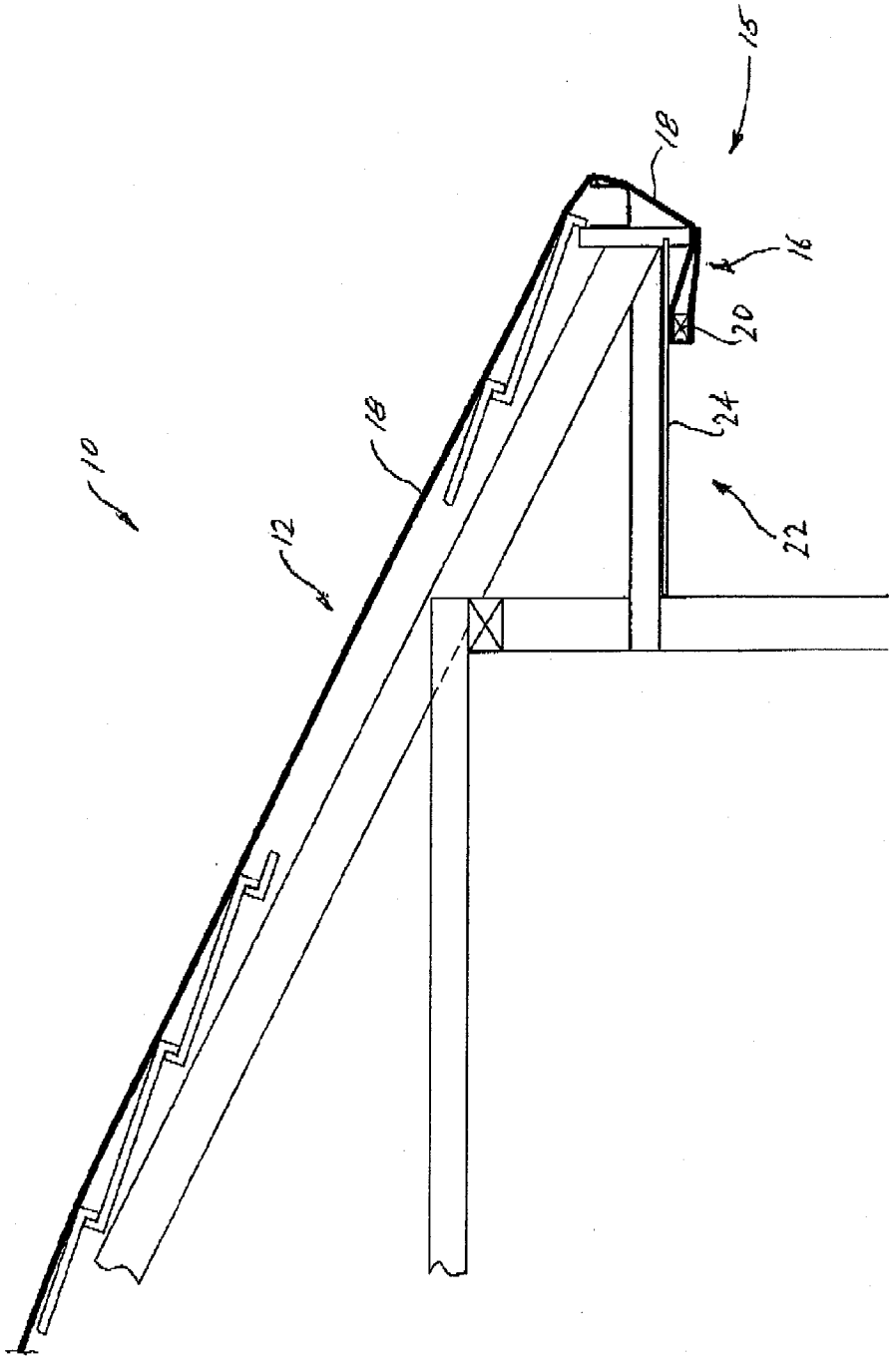


Fig. 2

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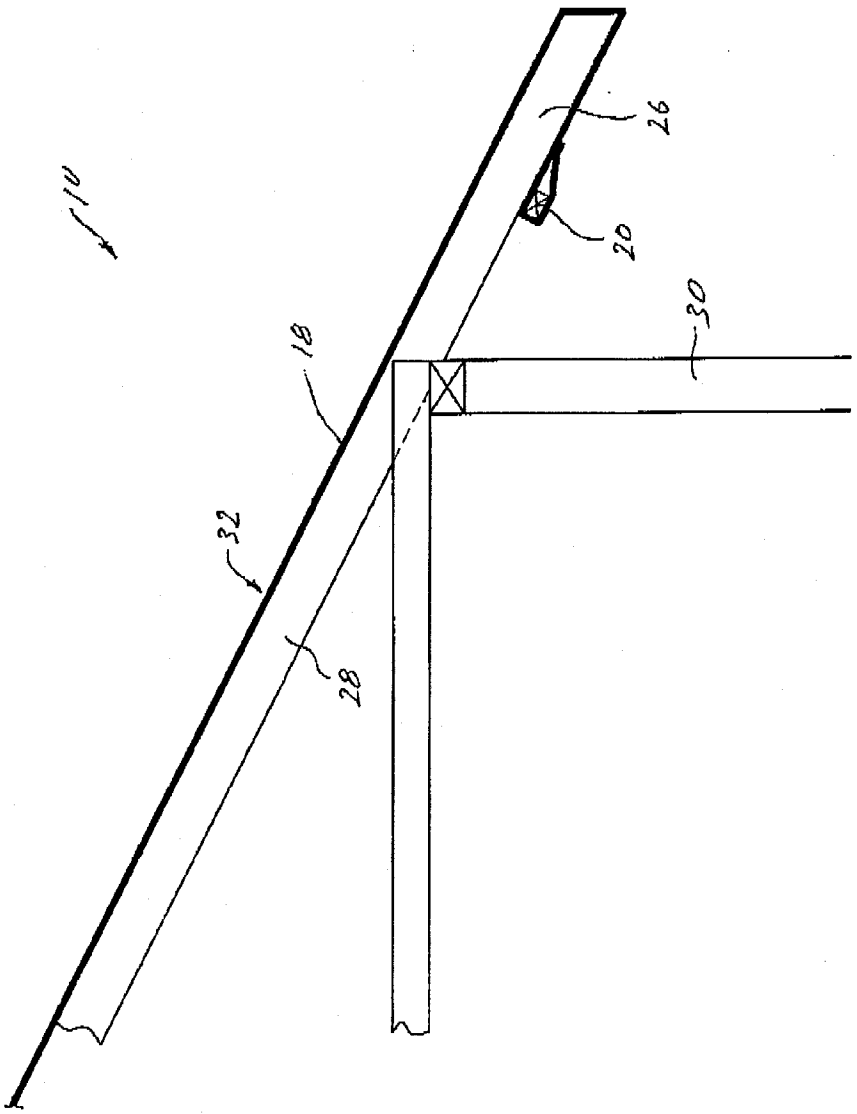


Fig. 3

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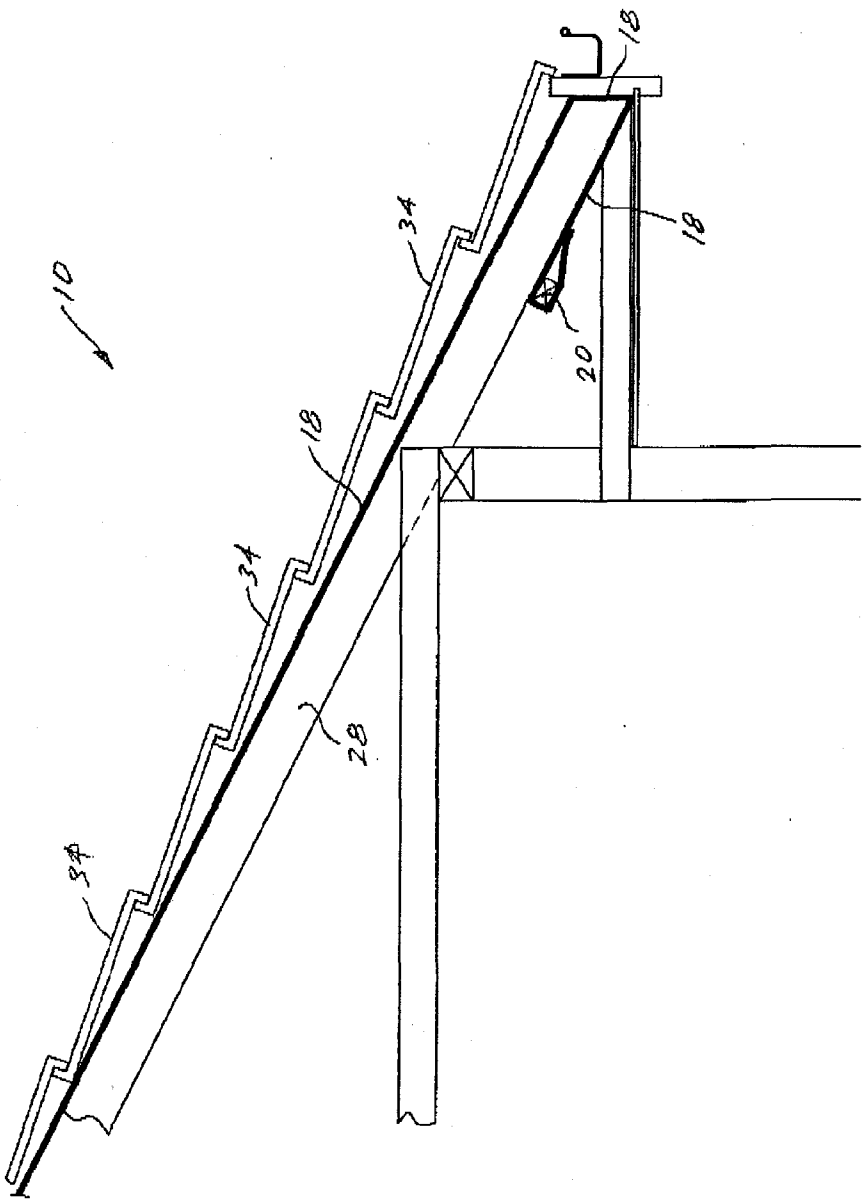


Fig. 4

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(12) UK Patent Application (19) GB (11) 2 388 815 (13) A

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(30) Priority Data:
(31) 0222005 (32) 21.09.2002 (33) GB

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(51) INT CL[7]:
B32B 27/12 // D01F 1/10 , E04B 1/62 7/00 , E04D 12/00

(52) UK CL (Edition V):
B5N N17X N17Y N175 N177 N178 N18X N180 N195 N196 N199 N20Y N207 N21Y N223 N225 N237 N244 N255 N257 N259 N261 N2712 N367 N368 N369 N37X N374 N377 N383 N389 N39Y N401 N402 N403 N418 N42X N42Y N420 N46X N463 N466 N471 N474 N477 N478 N48X N485 N488 N489 N501 N502 N503 N504 N507 N53X N53Y N55X N56X N56Y N560 N561 N564 N570 N572 N575 N577 N578 N58X N58Y N589 N59Y N591 N593 N603 N606 N614 N62X N62Y N627 N631 N632 N633 N635 N639 N648 N650 N658 N66Y N660 N661 N662 N670 N68Y N690 N70X N702 N705 N706 N707 N71Y N712 N734 N738 N76X N760 N761 N763
B5B BDF B352 B360 B363 B37Y B38Y
U1S S1591 S3023

(continued on next page)

(54) Abstract Title: **Improvements in and relating to liquid impermeable and liquid vapour/gas permeable fabrics**

(57) A vapour permeable fabric comprises a first reflective layer laminated to a second filamentous layer for example by calendering. The first reflective layer may comprise a single metallic or reflective foil, a polymeric foil with metallic (eg. aluminium or an alloy thereof) or reflective material applied thereto, or a laminate of multiple reflective foils interspersed with non reflective foils. The reflective layer may be microporous or micro perforated. The filamentous layer may comprise a non woven (eg spun-bonded) or a woven polymeric fabric. Suitable polymers for either layer include polypropylene, polyamides or polyesters. In an alternative embodiment the reflective layer comprises a filamentous layer wherein the filaments are spun from a blend comprising a polymeric material and a reflective material. Said reflective material may be supplied as a masterbatch and may comprise finely ground aluminium (or an alloy thereof) particles in a polymer matrix. The invented fabrics may be used in the construction industry for example as housewrap, as roofing or flooring underlay or in cavity wall insulation.

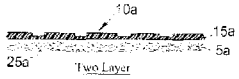


Fig. 1(a)

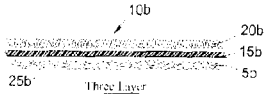


Fig. 1(b)

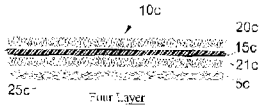


Fig. 1(c)

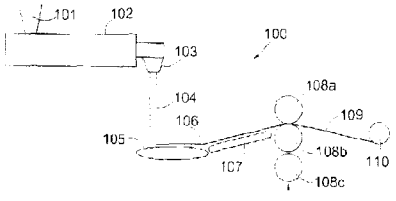


Fig. 2

GB 2 388 815 A

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

GB 2388815 A continuation

(56) Documents Cited:
GB 2294426 A
WO 1996/032252 A
US 4230057 A
EP 1331316 A1
US 4569874 A

(58) Field of Search:
UK CL (Edition V) **B5N**
INT CL[7] **B32B, E04B, E04D**
Other: **Online: EPODOC, WPI, JAPIO**

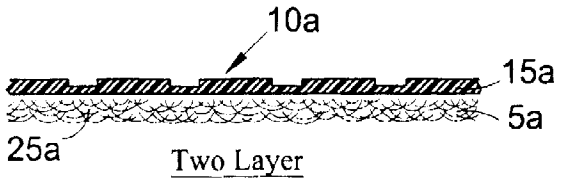


Fig. 1(a)

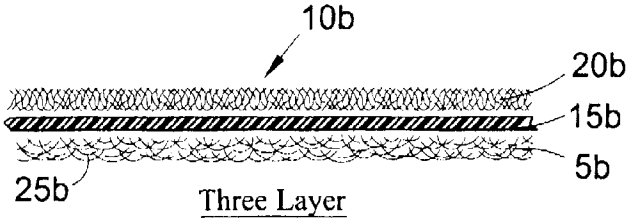


Fig. 1(b)

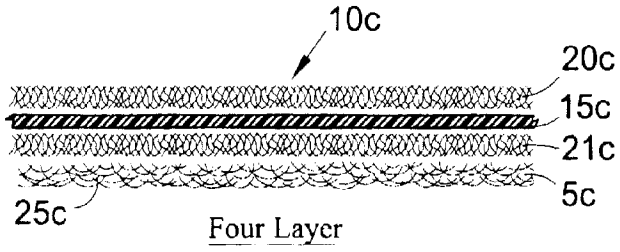


Fig. 1(c)

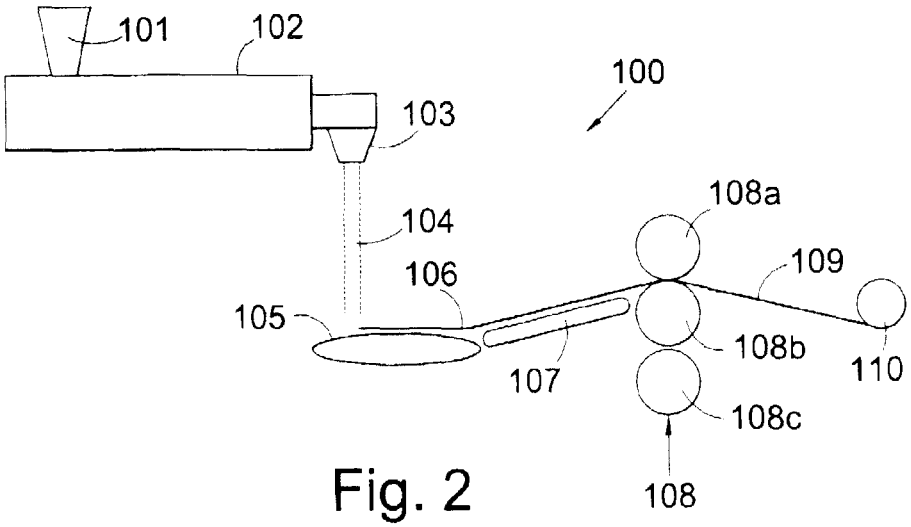

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108a
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108b
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107
108c
108

Fig. 2

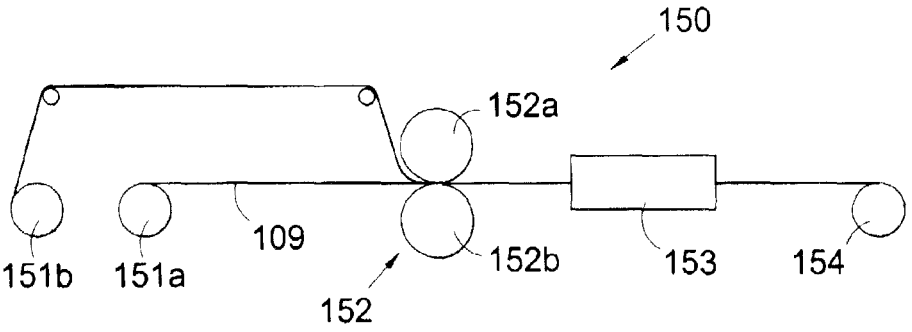

150
152a
109
151b
151a
152b
153
154
152

Fig. 3

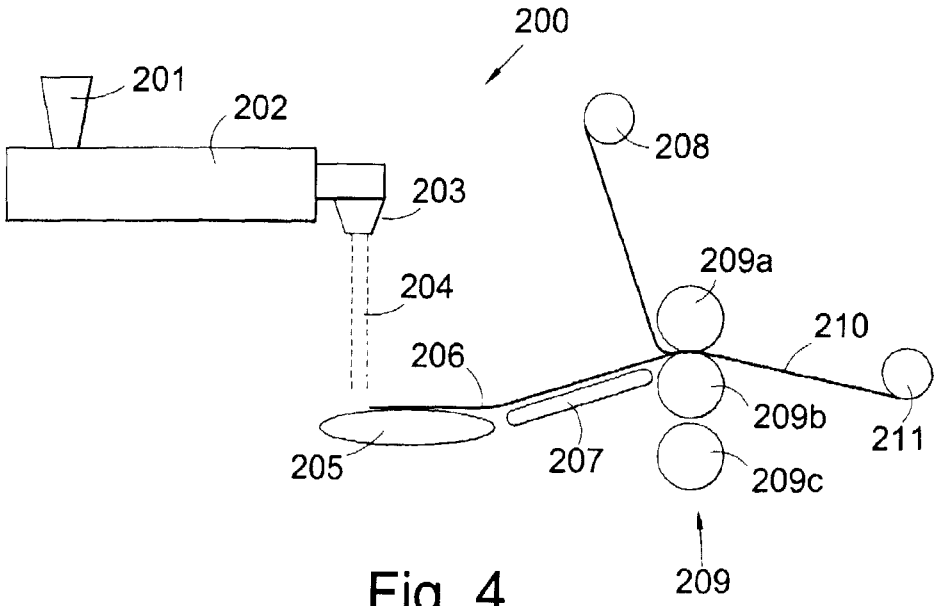

200
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202
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209a
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209b
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209c
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Fig. 4

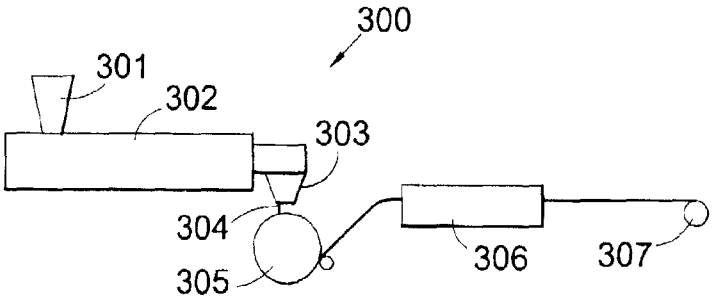

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Fig. 5

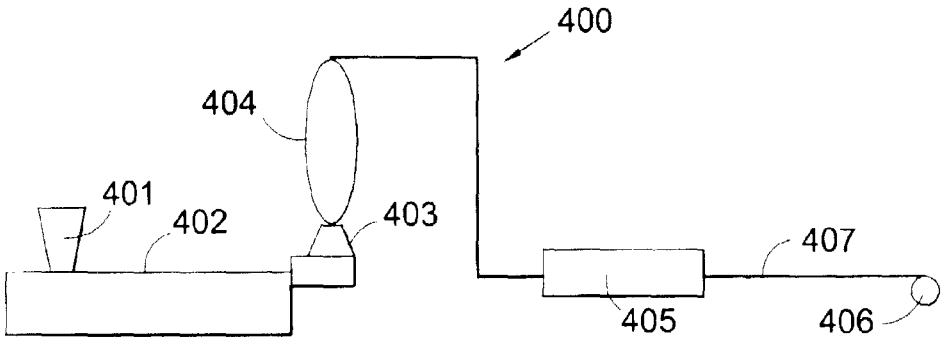


Fig. 6(a)

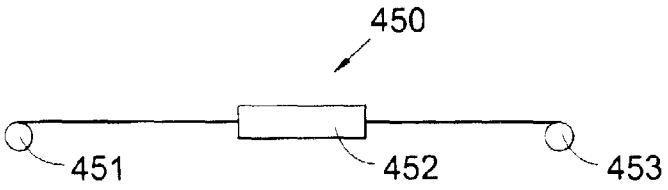


Fig. 6(b)

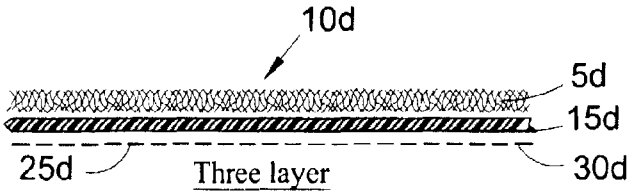


Fig. 7(a)

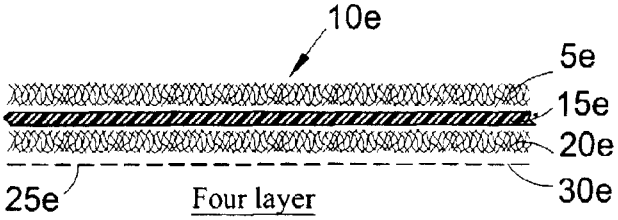


Fig. 7(b)

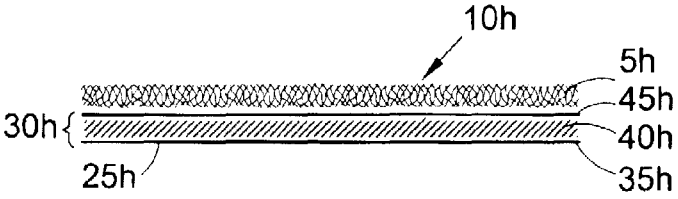


Fig. 7(c)

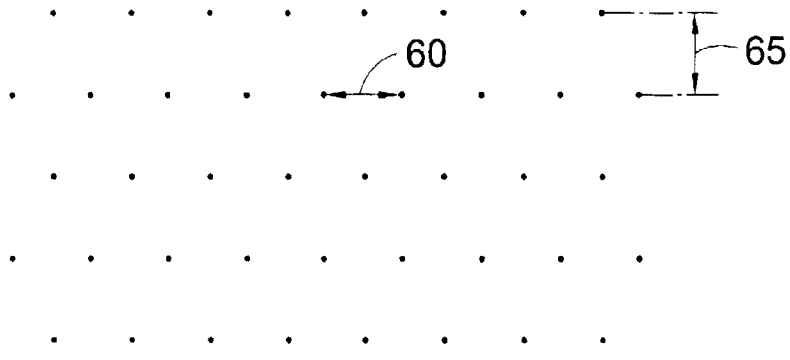


Fig. 7(d)

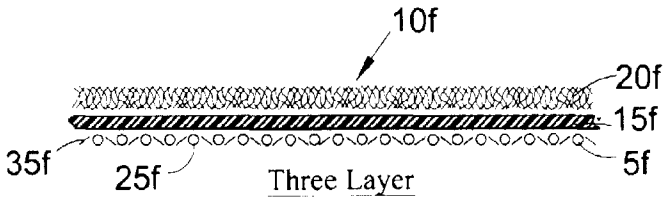

10f
20f
15f
35f
25f
5f
Three Layer

Fig. 8(a)

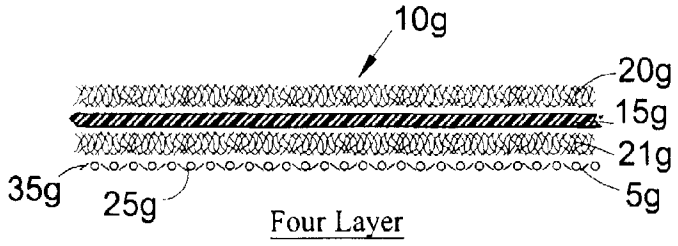

10g
20g
15g
21g
35g
25g
5g
Four Layer

Fig. 8(b)

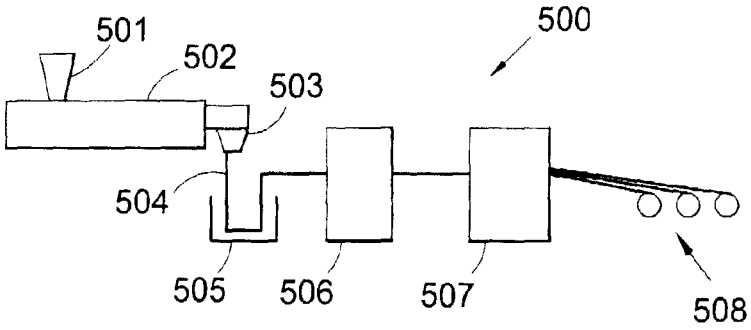

501
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Fig. 9

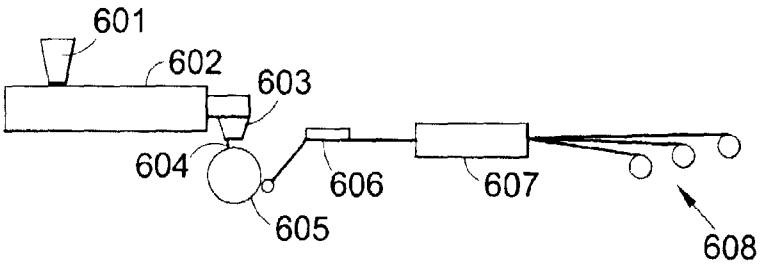

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Fig. 10

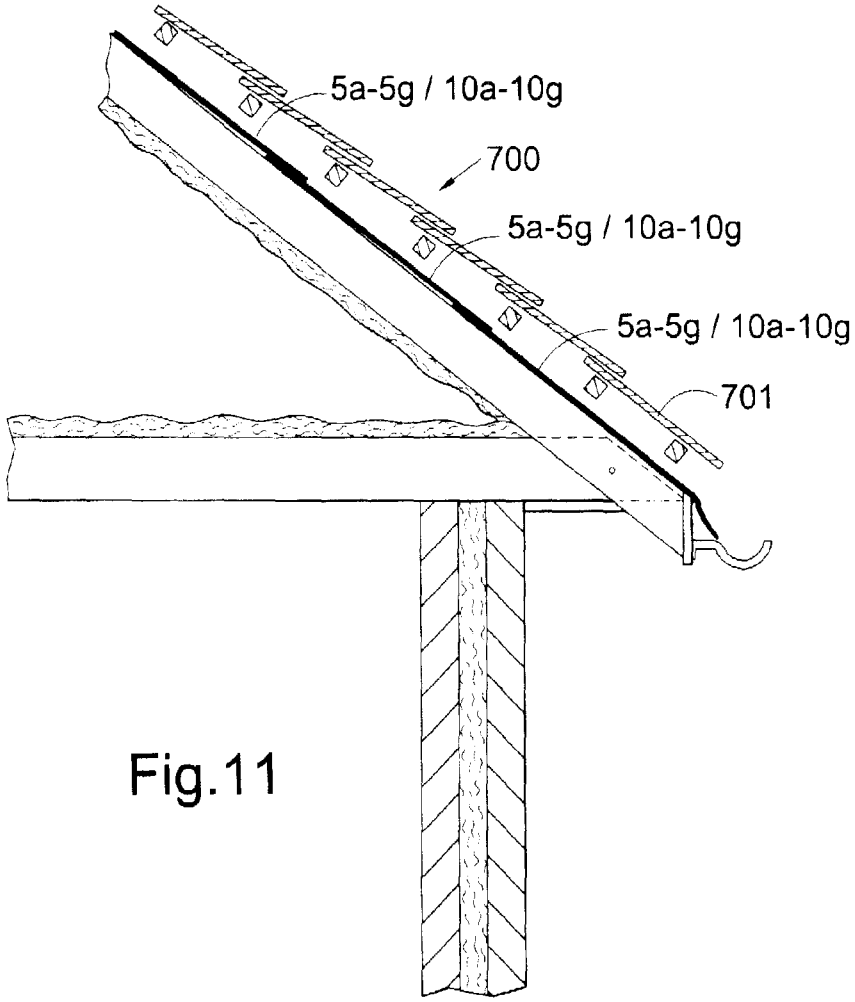


Fig.11

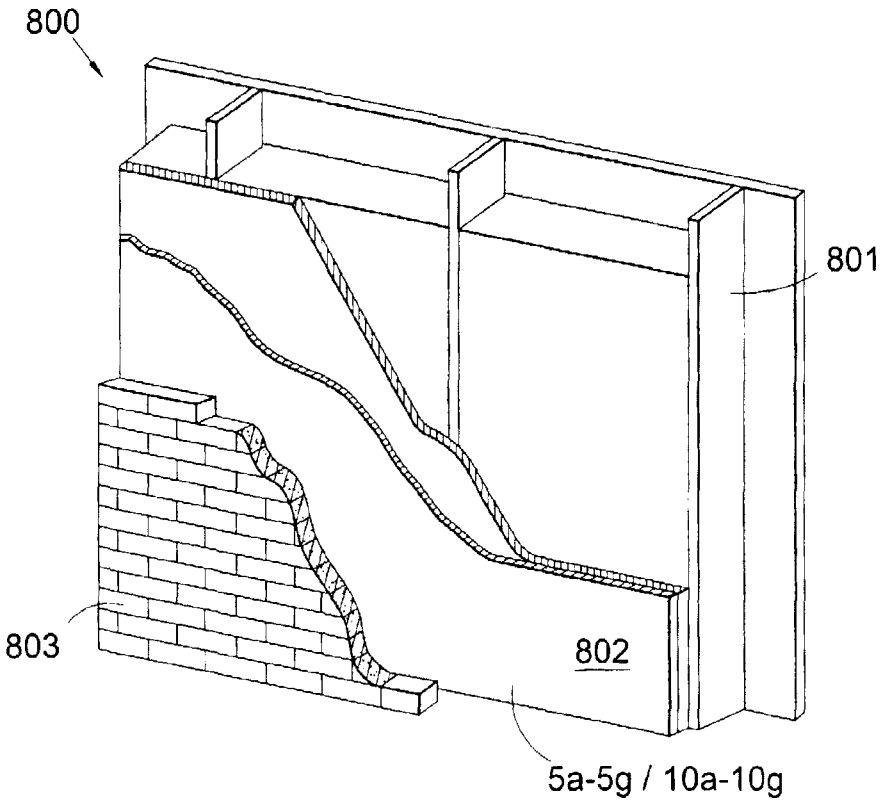


Fig. 12

IMPROVEMENTS IN AND RELATING TO LIQUID IMPERMEABLE AND LIQUID VAPOUR/GAS PERMEABLE FABRICS

FIELD OF INVENTION

The present invention relates generally to permeable fabrics such as liquid impermeable and liquid vapour/gas permeable fabrics. The invention more particularly, though not exclusively, relates to air and/or water vapour permeable fabrics. Such fabrics or materials may find particularly beneficial application as construction fabrics, such as in the building industry, e.g. as house-wrap or as roofing underlay or in flooring.

BACKGROUND TO INVENTION

Liquid impermeable and liquid vapour permeable materials, including laminates, are known.

Various films or membranes of coextruded or monolayer construction are available which, by virtue of a plurality of micropores or by molecular diffusion mechanisms, have the characteristics of providing a barrier to, for example, aqueous liquids, while at the same time allowing the passage of moisture vapour. A microporous membrane having such properties was previously made by Exxon Corporation under the trade name "EXXAIRE", a polyolefinic membrane with excellent vapour transport characteristics. Such is now available from their successor, Tredegar Film Products (formerly Exxon Films) as BF-116W. However, such membranes typically possess inadequate tensile strength properties and low resistance to tear for unsupported use, and in many applications require to be combined with other materials to improve these properties.

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EP 0 570 215 A, by the present Applicant, discloses use of a laminate as a roofing underlay material wherein said laminate comprises: a liquid impermeable and liquid vapour permeable microporous membrane; and a substrate, the membrane and substrate being intermittently bonded to preserve the liquid vapour transmission properties of the membrane. The laminate is provided with a supporting substrate on both sides of the membrane, the membrane and the substrates being intermittently bonded to preserve the liquid vapour transmission properties of the membrane. In one form one or both of the substrates of said laminate is a spunbonded polymeric non-woven material. The spunbonded non-woven substrate of said laminate is formed as a web to be subsequently calender bonded simultaneously with thermal lamination to the membrane.

EP 0 570 215 A discloses that the spunbonded polymeric non-woven material may be ultra-violet (UV) stabilised. Further, the previously available "EXXAIRE" membrane was temperature stabilised. Thus EP 0 571 215 A discloses a breathable building membrane including an under layer formed of a microporous polymeric film and a top layer formed of a filamentous polymeric fabric which is bonded to the under layer, said under and top layers being disposed in overlying relationship and being stabilised respectively against heat degradation and ultraviolet light degradation.

The content of EP 0 570 215 A is incorporated herein by reference.

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EP 0 742 305 A, also by the present Applicant, discloses use as a building material (and particularly as a roofing underlay) of a laminated fabric comprising at least two layers of non-woven sheet material, said fabric comprising:

(1) a first layer of compressed melt-blown material having an average pore size diameter in the range from 1 μm to about 8 μm; and

(2) a second layer of a material having an open porous structure,

and wherein the second layer of material is of a spun-bonded structure.

The layers comprising the fabric are bonded by a point-bonding technique, such as a calendering treatment.

The total area of said points is between 7% and 40% of the fabric area, and the compressed melt-blown material may be rendered into a compressed condition during lamination of the layers.

The content of EP 0 742 305 A is incorporated herein by reference.

GB 2 355 430 A by Hunt Technology Limited, discloses a breathable building membrane including an under layer formed of a microporous polymeric film and a top layer formed of a filamentous polymeric fabric (spunbond) which is bonded to the under layer, said under and top layers being disposed in overlying relationship and being stabilised respectively against heat degradation and ultraviolet light degradation, and said top layer having a top surface bearing a moisture vapour permeable

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reflective coating. It is suggested that the reflective coating comprises a thin metallic layer, such as aluminium, the thin metallic layer being applied by plasma deposition onto the top surface of the top fabric layer to a thickness of about 40 nm. It is reported that wherein the fabric of the top layer is made from spunbonded filaments and wherein the deposited metallic coating coats the surfaces of the individual filaments which collectively form the top surface layers of the spunbonded fabric top layer, such that the deposited metallic coating does not form a discrete layer on the top surface of the top layer.

The content of GB 2 355 430 A is incorporated herein by reference.

GB 2 355 430 A notes a number of problems in the art, e.g. condensation within a roof or cavity wall space and infra-red (IR) loading on building membranes which may lead to material degradation. GB 2 355 430 A seeks to address such problems, but in a way which gives rise to other problems, including cost and complexity of material manufacture as well as material robustness.

It is an object of at least one embodiment of at least one aspect of the present invention to obviate or at least mitigate one or more of the aforementioned problems.

It is a further object of at least one embodiment of at least one aspect of the present invention to provide an improved building material such as a synthetic breathable building membrane suitable for use as a wall

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breather membrane or housewrap, and also most preferably, for use as a roofing underlay.

It is noted by the present Applicant that roofing underlayment fabrics can rise up beneath roof tiles, causing rooftile lift in certain wind conditions. This phenomenon is measurable and is termed "wind lift". Stiff fabrics tend to address this problem by being less susceptible to lift by the wind. Stiff fabrics, however, may produce unwanted noise caused by flexing in windy conditions. A balance between fabric stiffness and noise levels is sought for building fabrics.

It is a further object of at least one embodiment of at least one aspect of the present invention to provide an improved building material which obviates or at least mitigates the abovementioned problems.

It is a yet further object of at least one embodiment of at least one aspect of the present invention to provide a building material having in combination a metallised gas permeable infra-red reflective means, ultraviolet light stabilisation means, and heat stabilisation means, which is moisture impermeable and gas and/or moisture vapour permeable to assist in guarding against roof space or cavity wall condensation, and which increases resistance of the building material to degradation, thereby increasing the life and durability of such material.

The inventors of the present invention have identified a need for an improved construction fabric, which has the following properties:

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(i) the ability to resist the ingress of wind driven rain and snow;

(ii) good moisture vapour transmission properties; and

(iii) a surface or means capable of reflecting infra-red radiation/heat.

Fabrics meeting the requirements of (i) and (ii) are taught by EP 0 570 215 A and by EP 0 742 305 A. The present invention enhances the teaching of these disclosures by providing an infra-red reflecting surface to the products described in each of these documents. A method of achieving a reflecting surface by plasma coating of aluminium is described in GB 2 355 430 A. However, a disadvantage quoted in that disclosure is that some of the aluminium coating may rub off on the calender bowl during lamination, with a subsequent loss in reflectance. It is the present inventor's belief that in one or more embodiments of one or more aspects of the present invention disclosed herein, this problem will be addressed by complete encapsulation of the metallic component. There is also an additional advantage in that the metallic component will not flake off in handling during use, e.g. the construction process or transportation.

It is a still further object of one or more embodiments of one or more aspects of the present invention to provide a breathable building fabric having means for providing ultraviolet and heat stabilisation and moisture vapour permeable reflective means which acts to reduce the infra-red loading of the entire building

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fabric, in use, thereby further increasing the resistance of the building membrane to degradation. Moreover, when the building fabric serves as a roofing underlay, during the construction or repair of a roof when the underlay can be totally exposed for periods, e.g. of three months or more, and affords the only protection to the building, the moisture vapour permeable reflective means enhances this protection.

SUMMARY OF INVENTION

According to a first aspect of the present invention there is provided a filamentous polymeric fabric, filaments of which comprise a polymeric material and a reflective material.

The filamentous polymeric material may be formed from a "spunbond" process, and may therefore be termed a spunbond fabric.

Preferably the filamentous polymeric fabric is breathable, that is to say moisture vapour permeable and preferably air/gas permeable.

Preferably the reflective material is capable of reflecting at least infra-red (IR) radiation and/or heat. Infra-red radiation is normally taken to be in the wavelength region 0.75 μm to 1,000 μm, and most particularly herein 5 μm to 50 μm.

The filamentous polymeric fabric preferably has an emissivity of about 0.1 to about 0.6, and preferably about 0.1 to 0.3.

Emissivity is a measure of reflectance, with a totally absorbing surface having an emissivity of 1

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(one), and a totally reflecting surface having an emissivity of 0 (zero).

The reflective material may substantially comprise a metal or metallic based material, e.g. aluminium or an alloy thereof.

The polymeric material may comprise additives such as ultra-violet (UV) stabilisers, hydrophobic additives, flame retardants, pigments (e.g. colour pigments), and/or plasticisers.

The polymeric material may be a thermoplastic polymer, e.g. selected from polypropylene, polyamide or polyester.

According to a second aspect of the present invention there is provided a filamentous polymeric fabric filaments of which comprise a polymeric material having a metallic material added thereto.

According to a third aspect of the present invention there is provided a breathable fabric comprising a filamentous polymeric fabric according to the first or second aspects.

Preferably the breathable fabric comprises a laminate material including a first layer comprising the filamentous polymeric fabric and a second layer comprising a breathable polymeric membrane, e.g. a microporous or microperforated polymeric membrane. The microporous or microperforated polymeric membrane may be vapour permeable and liquid impermeable.

Preferably the first and second layers are intermittently bonded together. The first layer may

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comprise a top (outer) layer, and the second layer may comprise an under (inner) layer.

The first and second layers may be stabilised respectively against ultra-violet light degradation and heat degradation.

The breathable polymeric membrane may comprise an ultra-violet (UV) stabilised breathable membrane which may or may not have a hydrophobic treatment applied via the melt or topically.

The breathable polymeric membrane may comprise a melt-blown film or a microporous or microperforated film. Such may provide good water hold-out properties combined with good moisture vapour transmission properties.

The membrane may be made from a thermoplastic polymer selected from: polypropylene, polyolefins, polyesters or polyamides.

The filamentous polymeric fabric may be made from a thermoplastic polymer selected from: polypropylene, polyolefins, polyesters or polyamides.

Preferably the breathable polymeric membrane comprises: a liquid impermeable and liquid vapour permeable membrane; and the filamentous polymeric fabric comprises a substrate, the membrane and substrate being intermittently bonded to preserve the liquid vapour transmission properties thereof.

The laminate may be provided with a supporting substrate on both sides of the membrane, the membrane and the substrates being intermittently bonded to preserve the liquid vapour transmission properties thereof.

The laminate may include a woven fabric layer.

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The woven fabric of said laminate may be in the form of a scrim intermittently bonded to one of the other laminate components.

The woven fabric of said laminate may be bonded to the membrane.

In one form, one or both of the substrates of said laminate is a spunbonded polymeric non-woven material. The spunbonded non-woven substrate of said laminate may be formed as a web to be calender bonded either simultaneously (ON-LINE) or subsequently (OFF-LINE) with thermal lamination to the membrane. The web of said laminate may be of a weight of between 10 g/m^2 and 200 g/m^2. The web of said laminate may be of a weight of between 30 g/m^2 and 90 g/m^2.

The membrane of said laminate may be of monolayer or multilayer construction.

The layers of the laminate may be thermally bonded. The bonded area of said laminate may form between 5% and 50% of the surface area of the laminated layers, e.g. around 7½%. The bonded area of said laminate may form between 14% and 20% of the surface area of the laminated layers, and preferably around 19%.

The filamentous polymeric fabric may comprise a first spunbond fabric, and the breathable fabric may comprise the first spunbond fabric, the breathable polymeric membrane and a second spunbond fabric.

The first spunbond fabric and breathable polymeric membrane may be intermittently bonded by a first bonding pattern, and the breathable polymeric membrane and the second spunbond fabric may be intermittently bonded by a

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second bonding pattern. The first bonding pattern and the second bonding pattern may be similar or may be dissimilar.

According to a fourth aspect of the present invention there is provided a breathable building or construction material comprising a filamentous polymeric fabric according to the first or second aspects, or a breathable fabric according to the third aspect.

The breathable building material may be adapted for use as a roofing underlay. However, the breathable building material may be advantageously adapted for use as a housewrap, e.g. in timber frame constructions, or as a wall breather membrane, or in other construction uses such as a temporary cover, e.g. a building cover or scaffolding cover, tent, tarpaulin or the like. The breathable building material may also find use as a flooring material.

According to a fifth aspect of the present invention there is provided use as a building or construction material of a filamentous polymeric fabric according to the first or second aspects or a breathable fabric according to the third aspect.

According to a sixth aspect of the present invention there is provided a method of manufacturing a filamentous polymeric fabric comprising the steps of:

providing a polymeric material and a reflective material; and

forming the polymeric material and the reflective material into a filamentous polymeric fabric.

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Preferably the step of forming is carried out using a spunbond process.

Preferably the reflective material is a metallic material or a metal, and the polymeric material and reflective material are provided as a metallised polymer masterbatch, e.g. in pelletised form.

Advantageously the metal, e.g. aluminium, is finely ground and added to a polymeric melt used to produce the spunbond material.

The reflective component may be an aluminiumised/aluminised masterbatch.

Preferably the step of forming includes the further step of:

calendering the filamentous polymeric fabric, e.g. with a first point embossing pattern.

According to a seventh aspect of the present invention there is provided a method of manufacturing a filamentous polymeric fabric comprising the steps of:

providing a polymeric material having a metallic material added thereto; and

forming the polymeric material and the metallic material into a filamentous polymeric fabric.

According to an eighth aspect of the present invention there is provided a method of manufacturing a breathable fabric comprising the steps of:

forming a filamentous polymeric fabric according to the method of the sixth or seventh aspects;

providing a breathable polymeric membrane; and

laminating the filamentous polymeric fabric and the breathable polymeric membrane one to the other.

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In one implementation (so-called "OFF-LINE") the filamentous polymeric fabric is formed and rolled prior to lamination.

In such method, the step of forming includes the steps of:

laying down filaments so as to form the filamentous polymeric fabric; and

calendering the filamentous polymeric fabric, e.g. with a first point embossing pattern.

Calendering is a thermal bonding technique involving the application of a combination of heat and pressure.

Further, in such method the steps of laminating includes the step of:

calendering the filamentous polymeric fabric and membrane together, e.g. with a second point emboss pattern.

The first and second point emboss patterns may be selected to be substantially the same or different.

In a second implementation (so-called "ON-LINE") the membrane is laid down on the (loose), i.e. unembossed or unbonded, filamentous polymeric fabric or vice versa.

In such method the step of laminating includes the step of:

calendering the filamentous polymeric fabric and membrane together, e.g. with a first point emboss pattern.

According to a ninth aspect of the present invention there is provided a building construction including a filamentous polymeric fabric according to the first or

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second aspects, or a breathable fabric according to the third aspect.

The building construction comprises a roof such as a tiled roof structure. Alternatively, the building construction may comprise a timber frame or a cavity wall. Alternatively the building construction comprises a floor.

According to a tenth aspect of the present invention there is provided a building including a building construction according to the ninth aspect.

According to an eleventh aspect of the present invention there is provided a laminated breathable fabric having as a layer thereof a reflective film or membrane.

Preferably, the reflective film may comprise a breathable (moisture vapour permeable and optionally air/gas permeable) film, e.g. a microperforated or microporous metallised film. Microperforated film is believed by the Applicant to be advantageous to microporous film as microperforated films typically have a greater reflectance and, therefore, better infra-red (IR) performance.

The microperforated metallised film may comprise microperforations of 0.1 mm to 15 mm in diameter.

The microperforations or micropores may advantageously have a size of, e.g. around 0.1 mm to 1.0 mm, and preferably around 0.6 mm, and preferably also a surface coverage of around 2% to 10%.

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Typically, there may be provided around 30 microperforated holes/inch^2.

The membrane may comprise a polymeric material and a reflective material.

Preferably the reflective material is capable of reflecting at least infra-red radiation and/or heat.

Preferably the reflective film or membrane has an emissivity of about 0.1 to about 0.6, and preferably about 0.1 to about 0.3.

The reflective material may substantially comprise a metal or metallic based material, e.g. aluminium or an alloy thereof.

The reflective membrane may comprise a single layer membrane.

Alternatively the reflective membrane may comprise a multiple layer membrane, e.g. a three layer membrane wherein a middle layer includes the reflective material. The membrane in such cases may be of an "AB" or "ABA" type, wherein "A" is a first polymeric material advantageously including a UV stabiliser, and "B" is a second polymeric material including the reflective material.

The reflective material may be provided as an additive to a polymeric material melt used to produce the membrane, e.g. as a finely ground metal, or metallic based material, e.g. aluminium or a material including aluminium.

In a multiple layer membrane, the melt additive may be used to provide a layer "B" of second polymer material

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including the reflective material of an "AB" or "ABA" type membrane.

As another alternative, the reflective membrane may comprise a multiple layer membrane, e.g. a three layer membrane wherein a middle layer comprises the reflective material deposited onto one of the layers. For example, the membrane may be of an "AC" or "ACA" type in which "A" is a first polymeric material, advantageously including a UV stabilizer, and "C" is a reflective material deposited onto one of the first polymer material layers "A".

The first polymeric layer "A" may be around 10 μm to 30 μm in thickness, and preferably around 15 μm thick.

The reflective material "C" may be around 10 nm to 100 nm thick, and preferably around 40 nm thick.

The reflective material may be deposited by a deposition process, e.g. vacuum vapour deposition or plasma deposition.

The polymeric material(s) may comprise one or more additives such as ultra-violet (UV) stabilisers, hydrophobic additives, flame retardants, pigments (e.g. colour pigments), and/or plasticisers.

The polymeric material(s) may be a thermoplastic polymer(s), e.g. selected from polypropylene, polyamide or polyester.

The fabric may also comprise at least one breathable polymeric film or membrane layer, and/or at least one filamentous polymeric fabric layer.

Advantageously, in one embodiment the reflective film may be laminated to the at least one breathable polymeric membrane. In another embodiment the reflective

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film may be laminated to the at least one filamentous polymeric fabric layer.

In one advantageous implementation, the laminated breathable fabric may comprise the reflective film, a breathable polymeric membrane and a filamentous polymeric fabric layer comprising a spunbond layer.

Preferably the film, membrane and spunbond layers are intermittently bonded to preserve the moisture vapour transmission properties thereof.

In a modification, a further spunbond layer is provided between the film and membrane. The further spunbond layer may provide additional strength.

Preferably the further spunbond layer contains an ultra-violet stabiliser and/or a hydrophobic additive.

Preferably the film, further spunbond layer membrane and spunbond layer are intermittently bonded to preserve the moisture vapour transmission properties thereof.

The laminated breathable fabric may include a woven fabric layer.

The woven fabric of said laminated breathable fabric may be in the form of a scrim intermittently bonded to one of the other laminate components.

The woven fabric of said laminated breathable fabric may be bonded to the at least one breathable polymeric film or membrane layer, or to the at least one filamentous polymeric fabric layer, or to the reflective membrane.

According to a twelfth aspect of the present invention there is provided a laminated breathable fabric

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having as a layer thereof a metal or metallised film or membrane.

According to a thirteenth aspect of the present invention there is provided a breathable building or construction material comprising a laminated breathable fabric according to the eleventh or twelfth aspects.

The breathable building material may be adapted for use as a roofing underlay. Alternatively the breathable building material may be advantageously adapted for use as a housewrap e.g. for use in timber frame constructions, or as a wall breather membrane, or in other construction uses such as a temporary cover, e.g. a building cover or scaffolding cover, tent, tarpaulin or the like. The breathable building material may also find use as a flooring material.

According to a fourteenth aspect of the present invention there is provided use as a building or construction material of a laminated breathable fabric according to the eleventh or twelfth aspects.

According to a fifteenth aspect of the present invention there is provided a method of manufacturing a laminated breathable fabric comprising the steps of:

providing a reflective film;

providing a filamentous polymeric fabric; and

forming the reflective film and filamentous polymeric fabric into a laminated breathable fabric.

Preferably the step of forming is carried out by calendering.

Preferably, the reflective film is a microperforated film, e.g. of an "AB", "ABA", "AC" or "ACA" construction,

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and the step of providing the film comprises the steps of forming the film and then microperforating the film.

According to a sixteenth aspect of the present invention there is provided a method of manufacturing a laminated breathable fabric comprising the steps of:

providing a metal or metallised film;

providing a filamentous polymeric fabric layer; and

forming the metal or metallised film and filamentous polymeric fabric into a laminated breathable fabric.

Preferably the step of forming is carried out by calendering.

According to a seventeenth aspect of the present invention there is provided a building construction including a laminated breathable fabric according to the eleventh or twelfth aspects.

The building construction comprises a roof such as a tiled roof structure. Alternatively, the building construction may comprise a timber frame or a cavity wall. Alternatively the building construction comprises a floor.

According to an eighteenth aspect of the present invention there is provided a building, including a building construction according to the seventeenth aspect.

According to a nineteenth aspect of the present invention there is provided a laminated breathable fabric comprising at least one breathable polymeric film or membrane layer, laminated to at least one filamentous polymeric fabric layer, wherein a reflective material is

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provided on the breathable polymeric film or membrane layer.

The reflective material may comprise a layer of reflective material, and may be provided by a deposition process, e.g. vacuum vapour deposition or plasma deposition.

The reflective material may substantially comprise a metal or metallic based material, e.g. aluminium or an alloy thereof.

The filamentous polymeric fabric layer may substantially comprise a spunbond layer.

The breathable polymeric film may be provided between the reflective material and the at least one filamentous polymeric fabric layer.

Alternatively and advantageously the reflective material may be provided between the breathable polymeric film and the at least one filamentous polymeric fabric layer.

According to a twentieth aspect of the present invention there is provided a laminated breathable fabric comprising at least one breathable polymeric film or membrane layer, laminated to at least one filamentous polymeric fabric layer, wherein a metallic material is provided on the breathable polymeric film or membrane layer.

According to a twenty first aspect of the present invention there is provided a woven polymeric fabric,

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strands of which comprise a polymeric material and a reflective material.

Preferably the strands are in the form of tapes.

Preferably the reflective material is preferably capable of reflecting at least infra-red (IR) radiation and/or heat.

Preferably the woven polymeric fabric has an emissivity of about 0.1 to about 0.6, and preferably about 0.1 to about 0.3.

The reflective material may substantially comprise a metal or metallic based material, e.g. aluminium or an alloy thereof.

The polymeric material may comprise additives such as ultra-violet (UV) stabilisers, hydrophobic additives, flame retardants, pigments (e.g. colour pigments) and/or plasticisers.

The tapes may be of a mono-layer construction.

Alternatively, the tapes may be of a multi-layer construction. In a multi-layer construction the reflective material may be added to an inner layer of a co-extruded tape.

In one embodiment the multi-layered tape may be a three layer construction wherein a centre layer contains the reflective material and the outer layers contain a UV stabiliser.

According to a twenty second aspect of the present invention there is provided a woven polymeric fabric strands of which comprise a polymeric material and a metallic material added thereto.

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According to a twenty third aspect of the present invention there is provided a breathable fabric comprising a woven polymeric fabric according to the twenty first or twenty second aspects.

Advantageously the construction of the woven fabric is selected so as not to impair moisture vapour transmission properties of the fabric.

Preferably the breathable fabric comprises a laminate material including a first layer comprising the woven polymeric fabric and a second layer comprising a breathable polymeric membrane.

Preferably the first and second layers are intermittently bonded together, preferably to preserve the moisture vapour transmission properties thereof.

Preferably the breathable fabric further comprises a third layer of filamentous polymeric material, the first, second and third layers being intermittently bonded together preferably to preserve the moisture vapour transmission properties thereof.

Preferably the breathable fabric comprises a laminate material including a first layer comprising the woven polymeric fabric, and a second layer comprising a breathable polymeric membrane.

Preferably the first and second layers are bonded together. The first layer may comprise a top (outer) layer and the second layer may comprise an under (inner) layer.

The first and second layers may be stabilised respectively against ultra-violet light degradation, and heat degradation.

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The breathable polymeric membrane may comprise an ultra-violet stabilised breathable membrane which may or may not have a hydrophobic treatment applied via the melt or topically.

According to a twenty fourth aspect of the present invention there is provided a breathable building or construction material comprising a woven polymeric fabric according to the seventeenth or eighteenth aspects, or a breathable fabric according to the twenty second aspect.

The breathable building material may be adapted for use as a roofing underlay. Alternatively the breathable building material may be advantageously adapted for use as a housewrap, e.g. in timber frame constructions, or as a wall breather membrane, or in other construction uses such as a temporary cover, e.g. a building cover or scaffolding cover, tent, tarpaulin or the like. The breathable building material may also find use as a flooring material.

According to a twenty fifth aspect of the present invention there is provided use as a building or construction material of a woven polymeric fabric according to the twenty first or twenty second aspects, or a breathable fabric according to the twenty third aspect.

According to a twenty sixth aspect of the present invention there is provided a method of manufacturing a woven polymeric fabric comprising the steps of:

providing a polymeric material and a reflective material;

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forming the polymeric material and the reflective material into strands, e.g. tapes or threads;

weaving the strands together.

Preferably the reflective material is a metallic material or a metal, and the polymeric material and reflective material are provided as a metallised polymer masterbatch.

Advantageously the metal, e.g. aluminium, is finely ground and added to a polymeric melt used to produce the strands.

The reflective component may be an aluminiumised/aluminised masterbatch.

According to a twenty seventh aspect of the present invention there is provided a method of manufacturing a woven polymeric fabric comprising the steps of:

providing a polymeric material and a metallic material;

forming the polymeric material and the metallic material into strands; and

weaving the strands together.

According to a twenty eighth aspect of the present invention there is provided a method of manufacturing a breathable fabric comprising the steps of:

forming a woven polymeric fabric according to the method of the twenty fifth or twenty sixth aspects;

providing a breathable polymeric membrane; and

laminating the woven polymeric fabric and the breathable polymeric membrane one to the other.

According to the twenty ninth aspect of the present invention there is provided a building construction

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including a woven polymeric fabric according to the seventeenth or eighteenth aspects, or a breathable fabric according to the twenty first aspect.

The building construction comprises a roof such as a tiled roof structure. Alternatively, the building construction may comprise a timber frame or a cavity wall. Alternatively the building construction comprises a floor.

According to a thirtieth aspect of the present invention there is provided a building including a building construction according to the twenty sixth aspect.

In a modification the breathable fabric further comprises a fourth layer of filamentous polymeric material between the woven polymeric fabric and the membrane.

Preferably the first layer, fourth layer, second layer and third layer are intermittently bonded, preferably to preserve the moisture vapour transmission properties thereof.

According to a thirty first aspect of the present invention there is provided strands, threads or tapes adapted for use in manufacture of the woven polymeric fabric of the twenty first or twenty second aspects or the breathable fabric of the twenty third aspect.

According to a thirty second aspect of the present invention there is provided a fabric comprising:

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a polymeric fabric comprising a polymeric material and a reflective material, or

a polymeric material layer having formed thereon a continuous breathable layer comprising or including a reflective material.

The polymeric fabric or the polymeric material layer may advantageously be a filamentous polymeric fabric, or alternatively a breathable polymeric film or a woven polymeric fabric.

Preferably the polymeric fabric is made from a masterbatch comprising a polymeric material and a reflective material.

According to a thirty third aspect of the present invention there is provided a fabric comprising:

a polymeric fabric comprising a polymeric material and a metallic material, or

a polymeric material layer having formed thereon a continuous breathable layer comprising or including a metallic material.

According to a thirty fourth aspect of the present invention there is provided a breathable fabric comprising a fabric according to the thirty second or thirty third aspects.

According to a thirty fifth aspect of the present invention there is provided a breathable building or construction material comprising a fabric according to the thirty second or thirty third aspects.

According to a thirty sixth aspect of the present invention there is provided use as a building or

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construction material of a fabric according to the thirty second or thirty third aspects.

According to a thirty seventh aspect of the present invention there is provided a method of manufacturing a polymeric fabric comprising the steps of:

providing a polymeric material and a reflective material;

forming the polymeric material and reflective material into a polymeric fabric.

Preferably the reflective material is added to the polymeric material as a melt additive.

According to a thirty eighth aspect of the present invention there is provided a method of manufacturing a polymeric fabric comprising the steps of:

providing a polymeric material and a metallic material;

forming the polymeric material and metallic material into a polymeric fabric.

According to a thirty ninth aspect of the present invention there is provided a method of manufacturing a breathable fabric comprising the steps of:

forming a polymeric fabric according to the method of the thirty seventh or thirty eighth aspects;

providing at least one breathable layer;

laminating the polymeric fabric and breathable layer one to the other.

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BRIEF DESCRIPTION OF DRAWINGS

Embodiments of the present invention will now be described by way of example only, and with reference to the accompanying drawings, which are:

Figures 1(a), (b), (c) schematic sectional side views of first, second and third embodiments of breathable fabrics according to the present invention;

Figure 2 a schematic diagram of an apparatus for manufacture of filamentous polymeric fabrics according to the present invention;

Figure 3 a schematic diagram of a lamination apparatus for manufacture of breathable fabrics according to the present invention;

Figure 4 a schematic diagram of an apparatus for manufacture of filamentous polymeric fabrics and lamination thereof to manufacture breathable fabrics

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according to the present invention;

Figure 5 a schematic diagram of an apparatus for manufacture of a polymeric membrane in the form of a microperforated film for use in the breathable fabrics of Figures 1(a), (b) or (c);

Figures 6(a), (b) schematic diagrams of a production apparatus and a microperforation apparatus, respectively, for manufacture of a polymeric membrane in the form of a melt-blown film for use in the breathable fabrics of Figures 1(a), (b) or (c).

Figures 7(a), (b), (c) schematic sectional side views of fourth, fifth and sixth embodiments of breathable fabrics according to the present invention;

Figure 7(d) a schematic representation of a pattern of microperforations in a fabric according to the present invention.

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Figures 8(a), (b) schematic sectional side views of seventh and eighth embodiments of breathable fabrics according to the present invention;

Figure 9 a schematic diagram of an apparatus for manufacture of strands (tapes) for manufacture of the breathable fabrics of Figures 8 (a) or (b);

Figure 10 a schematic diagram of an alternative apparatus for manufacture of strands (tapes) for manufacture of the breathable fabrics of Figures 8(a) or (b);

Figure 11 a cross-sectional side view of a part of a roof including the fabric of Figures 1(a), (b) or (c), Figures 7(a), (b), (c) or Figures 10(a) or (b); and

Figure 12 a cut-away perspective view of a wall including the fabric of Figures 1(a), (b) or (c), Figures 7(a), (b), (c) or Figures 10(a) or (b).

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DETAILED DESCRIPTION OF DRAWINGS

FIRST EXAMPLE

Referring to Figure 1(a), there is illustrated a filamentous polymeric fabric 5a according to a first embodiment of the present invention. Filaments of the filamentous polymeric fabric 5a comprise a polymeric material and a reflective metallic material.

The filamentous polymeric material 5a is formed from a "spunbond" process as will hereinafter be described in greater detail, and is therefore termed a "spunbond" fabric.

The filamentous polymeric fabric 5a is breathable, that is to say moisture vapour permeable and air permeable, and the reflective material is capable of reflecting at least infra-red (IR) radiation and/or heat. The reflective material typically substantially comprises a metal or metallic based material, and in this embodiment comprises aluminium or an alloy thereof.

The polymeric material can comprise additives such as an ultra-violet (UV) stabiliser, hydrophobic additives, flame retardants, pigments (e.g. colour pigments), and/or plasticisers. The polymeric material is a thermoplastic polymer, e.g. selected from polypropylene, polyamide or polyester, and in this embodiment is polypropylene.

A breathable fabric 10a comprises in part filamentous polymeric fabric 5a. The breathable fabric 10a comprises the filamentous polymeric fabric 5a and a

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second layer comprising a breathable, e.g. microperforated or microporous polymeric membrane 15a. The breathable polymeric membrane 15a is vapour permeable and liquid impermeable.

The first and second layers 5a, 15a are intermittently bonded together, the first layer 5a comprising a top (outer) layer, and the second layer 15a comprising an under (inner) layer. The first and second layers 5a, 15a are advantageously stabilised respectively against UV light degradation and heat degradation. In this example the breathable polymeric membrane 15a comprises a UV stabilised breathable membrane, which may or may not have a hydrophobic treatment applied via the melt or topically. The breathable polymeric membrane 15a is selected from one of a melt-blown film or a microporous or microperforated film. Further, the membrane 15a is made from a thermoplastic polymer selected from: polypropylene, polyolefins, polyesters or polyamides, and in this embodiment polypropylene.

A melt blown fabric comprises a mass of micro-filaments, typically 1 μm to 5 μm diameter. This mass of filaments may or may not be calendered, i.e. the mass may be subjected to pressure with or without the application of heat. The calender rollers may be smooth, or a combination of smooth and embossed. The degree of calendering applied will depend on the required balance of properties of water hold out versus moisture vapour transmission.

A microporous film is prepared from a polyolefin/filler mix. The filler may be Calcium

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Carbonate, Titanium Dioxide or similar. The film is stretched either mono-axially or bi-axially in such a way that micropores of approximately 0.2 μm are formed through the film. Such a process is described in the EP 0 309 073 A to Exxon.

The Applicant considers the addition of a UV stabiliser to prevent ultraviolet degradation on exposure to light to be beneficial. In addition, the properties of the membrane 15a may be enhanced by a hydrophobic agent which may be added to the melt or applied topically. The Applicant considers the use of a hydrophobic agent to be particularly beneficial in the case of a melt blown fabric, where it will improve the water holdout properties of the final product. In addition, contact with house timbers, which have been treated with water based timber treatments can have an adverse effect on the water hold out properties. This can be minimised by the application of a suitable hydrophobic treatment.

Thus the breathable polymeric membrane 15a comprises: a liquid impermeable and liquid vapour permeable membrane; and the filamentous polymeric fabric 5a comprises a substrate, the membrane and substrate being intermittently bonded to preserve the liquid vapour transmission properties thereof.

In a modification the breathable fabric 5a comprises only the filamentous polymeric fabric. Such may be sufficient for some less demanding applications, e.g. housewrap.

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In a second embodiment shown in Figure 1(b), the laminate 10b is provided with a supporting substrate 5b, 20b on both sides of the membrane 15b, the membrane 15b and the substrates 5b, 20b being intermittently bonded to preserve the liquid vapour transmission properties thereof. The further supporting substrate 20b is also a filamentous polymeric fabric, the same or similar to the substrate 5b.

The laminate 10a, 10b optionally includes a woven fabric layer (not shown). The woven fabric of said laminate can be in the form of a scrim intermittently bonded to one of the other laminate components. The woven fabric of said laminate 10a;10b can be bonded to the membrane 15a;15b. In one form, one or both of the substrates 5a; 5b, 20b of said laminate 10a;10b is a spunbonded polymeric non-woven material. The spunbonded non-woven substrate 5a; 5b, 20b of said laminate 10a; 10b is/are formed as a web(s) to be subsequently calender bonded simultaneously with thermal lamination to the membrane 15a;15b. The web(s) of said laminate 10a; 10b are typically of a weight of between 10 g/m^2 and 200 g/m^2, and particularly between 30 g/m^2 and 90 g/m^2. The membrane 15a;15b of said laminate 10a;10b can be of monolayer or multilayer construction.

The layers of the laminate 10a; 10b are in this embodiment thermally calender bonded. The bonded area of said laminate 10a;10b forms between 5% and 50% of the surface area of the laminated layers, particularly between 14% and 20%, and advantageously around 19%.

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In the second embodiment the filamentous polymeric fabric 5b comprises a first spunbond fabric, and the breathable fabric 10b comprises the first spunbond fabric 5b, the breathable polymeric membrane 15b and a second spunbond fabric 20b. The first spunbond fabric 5b and breathable polymeric membrane 15b are intermittently bonded together by a first bonding pattern, and the breathable polymeric membrane 15b and the second spunbond fabric 20b are intermittently bonded by a further bonding pattern. The bonding pattern and the further bonding pattern may be similar or may be dissimilar.

In a third embodiment shown in Figure 1(c) the laminate 10c is further provided with a third spunbond fabric 21c between the first spunbond fabric 5c and the membrane 15c.

The filamentous polymeric fabric 5a;5b;5c/ breathable fabric 10a;10b;10c find use as a breathable building or construction material 25a;25b;25c. The breathable building material 25a;25b;25c can be adapted for use as a roofing underlay. However, the breathable building material 25a;25b;25c can also advantageously be adapted for use as a housewrap, or alternatively wall breather membrane, or alternatively as a temporary cover, e.g. a building cover or scaffolding cover, or tent, tarpaulin or the like. The breathable building material 25a, 25b, 25c can also find use as a flooring material.

The filamentous polymeric fabric 5a;5b;5c is manufactured by a method comprising the steps of: providing a polymeric material and a reflective material; and forming the polymeric material and the reflective

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material into the filamentous polymeric fabric 5a;5b;5c. The step of forming is carried out using a spunbond process. The reflective material is a metallic material or a metal, and the polymeric material and reflective material are provided as a metallised polymer masterbatch. Advantageously the metal (in this embodiment aluminium) is finely ground and added to a polymeric melt used to produce the spunbond material. The reflective component can be an aluminiumised/aluminised masterbatch such as SILVET® 210-30-E1 or ARX V 01/015 IR.

SILVET® 210-30-E1 available from Silberline Plastics Limited is an aluminised polymer masterbatch offering: very fine particle size aluminium flake pigment; low dusting, dry granular delivery form; compatibility with a wide range of thermoplastics. SILVET® 210-30-E1 provides a very fine particle size aluminium flake pigment in a free flowing, non-dusting, meterable, granular form. It provides direct pigmentation of extruded articles and colouration of masterbatch and compound, where its high metal content offers considerable formulating flexibility. This grade is compatible with a wide range of thermoplastics, including styrenics, polyolefins, polyamides, polycarbonates, polyesters and acetals. Due to its fine particle size, SILVET® 210-30-E1 has very high opacity. Loadings of 0.3% to 1.2% in the final pigmented article are typical. It is normally sufficient to tumble blend the granules with polymers and any other colorants and additives before processing. As with all aluminium flake pigments, the use of high shear forces

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should be minimised as they cause loss of brightness and metallic effect.

Properties of SILVET® 210-30-E1 are:

Aluminium pigment content	= 69.0% minimum by weight
Carrier content	= 29.0% minimum by weight
Non-volatile content	= 98.5% minimum at 100°C
Median flake diameter	= approximately 8 μm.

ARX V 01/015 IR available from ARGUS Additive Plastics GmbH is an Infra-red-reflector-Masterbatch having an absorption region within the IR range.

The step of forming normally includes the further step of: calendering the filamentous polymeric fabric, e.g. with a point emboss pattern.

The breathable fabric 10a;10b;10c is manufactured by a method comprising the steps of: forming the filamentous polymeric fabric 5a;5b;5c; providing the breathable polymeric membrane 15a;15b;15c; and laminating the filamentous polymeric fabric 5a;5b;5c and the breathable polymeric membrane 15a;15b;15c one to the other.

Referring to Figures 2 and 3, in one implementation (so-called "OFF-LINE") the filamentous polymeric fabric 5a;5b;5c is formed and rolled prior to lamination. The filamentous polymeric fabric 5a;5b;5c is formed by spunbond apparatus 100, and laminated by laminator 150, as will hereinafter be described.

In such method, the step of forming includes the steps of: laying down filaments so as to form the filamentous polymeric fabric 5a;5b;5c and calendering the filamentous polymeric fabric 5a;5b;5c, e.g. with a first point emboss pattern. Calendering is a thermal bonding

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technique involving the application of a combination of heat and pressure.

Further, in such method the steps of laminating includes the step of calendering the filamentous polymeric fabric 5a;5b;5c and membrane 15a;15b;15c together, e.g. with a second point emboss pattern.

The first and second point emboss patterns can be selected to be substantially the same or different.

The spunbond apparatus 100 comprises a polymer feed for forming filaments and a plurality of filament spinners 103. Additives such as the reflective material can be introduced in the polymer feed prior to melting and subsequent mixing in an extruder. Filaments are cooled by cooling means 104 and loose laid as a web 106 on a spinbelt 105. A conveyor 107 conveys the web 106 to a point bonding calender 108. The calender 108 has three embossing bowls, a first embossing bowl 108a with a 19% embossing area (so-called STANDARD BOND) and a diamond embossing pattern, a second bowl 108b which is smooth, and a third bowl 108c with a 72% embossing area (so-called LO-BOND) with a round embossing pattern. The web 106 is selected to be passed between the first and second bowls 108a, 108b or the second and third bowls 108b, 108c dependent upon the embossing pattern to be selected. After calendering the web 106 forms a spun fabric 109, i.e., the filamentous polymer fabric 5a, 5b, 20b; 5c, 20c, 21c. The spunbond fabric 109 is then rolled on wind-up roller 110.

The spunbonding processing thus involves passing a polymer melt through a die with a plurality of holes, to

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form a mass of filaments. The filaments are stretched, cooled, and formed into a loose web on a conveyor belt, and then passed through a calender. The calender comprises a smooth roller and an embossed roller, the embossing pattern of which may typically cover from 72% to 35% of the surface area, and which may be a diamond, round or other shape. The smooth bowl of the calender should be of the swim roll type, i.e. is capable of being 'bent' to accommodate variations in thickness of the web. Both bowls of the calender should be heated, the temperature selected being dependent on the type of polymer being processed, and on the balance of properties required in the end product.

The laminator 150 comprises unwind stands 151a,151b from which a reel of spunbond fabric 109 and membrane 15a;15b;15c, respectively are unrolled and passed through a laminating calender 152. The calender 152 has two embossing bowls, a first embossing bowl 152a with an embossed pattern and a second bowl 152b which is smooth. The embossed pattern may be the same as that of one of the embossed bowls 108a, 108c of the spunbond apparatus 100 or may be different. The laminator 150 also comprises an accumulator 153 and a winder 154.

Referring to Figure 4, in a second implementation (so-called "ON-LINE") the filamentous polymeric fabric 5a;5b;5c is laid down (loose) on the membrane. The filamentous polymeric fabric 5a;5b;5c is formed and laminated by spunbond/laminator apparatus 200.

In such method the step of laminating includes the step of calendering the filamentous polymeric fabric

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5a;5b;5c and membrane 15a;15b;15c, e.g. with a point emboss pattern.

The spunbond/laminator apparatus 200 is similar to the spunbond apparatus 100 of Figure 2. However, in the apparatus 200 there is provided a film unwind stand from which a roll of membrane 15a;15b;15c is unwound and laminated to unbonded web 206.

In the case where the membrane 15a;15b;15c is a microperforated film, the membrane 15a;15b;15c can be manufactured by cast film apparatus 300 shown in Figure 5. The cast film apparatus 300 comprises a polymer feed 301, an extruder 302 including a film extrusion means 303 for forming a film 304 (membrane 15a;15b;15c), a chill roll 305, a film orientation means 306 (mono or bi-axial) and a film winder 307.

Alternatively in the case where the membrane 15a;15b;15c is a microperforated film the membrane 15a;15b;15c can be manufactured by blown film apparatus 400 and microperforation apparatus 450 shown in Figures 6(a) and (b) respectively. Blown film apparatus 400 comprises a polymer feed 401, extruder 402 including film extruder means 403 for forming a blown film bubble 404 to provide film 407 (membrane 15a:15b:15c), a film orientation means 405 (mono- or bi-axial) and a film winder 406.

Microperforation apparatus 450 comprises an unwind stand 451, microperforation means 452 and wind up stand 453.

It will be appreciated that the filamentous polymeric fabrics 5a;5b;5c forming part of a laminate of

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an embodiment of the present invention may be used as a single layer product. In such case the filamentous polymeric fabric may have a weight of around 100 g/m^2 to 150 g/m^2. In other cases, e.g. the two-layer fabric 5a, the filamentous polymeric fabric may have a weight of around 60 g/m^2 to 100 g/m^2 and the membrane 15a may have a weight of around 30 g/m^2 (and typically a thickness of around 30 microns).

SECOND EXAMPLE

Referring to Figure 7(a) there is illustrated a laminated breathable fabric 10d according to a fourth embodiment of the present invention having as a layer thereof a reflective film or membrane 30d.

The reflective film 30d comprises a breathable (moisture vapour permeable and optionally air permeable) film, and in this embodiment a microperforated metallised film. The reflective film 30d advantageously contains a UV stabiliser. In this embodiment, the reflective film 30d comprises a gas barrier polypropylene film having a metal (e.g. aluminium) foil laminated thereto.

The reflective film 30d typically has a thickness of 25 μm to 30 μm, and is manufactured by a cast or blown method. The reflective film 30d is microperforated so as to be gas permeable and then laminated to the at least one breathable polymeric membrane 15d. The microperforations are typically of the order of 0.1 mm to 1.0 mm in diameter.

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The fabric 10d comprises the at least one breathable polymeric membrane layer 15d, and also at least one filamentous polymeric fabric layer 5d.

As illustrated in Figure 7(a) the reflective film 30d is laminated to the at least one breathable polymeric membrane 15d. In a modification, however, the reflective film 30d is laminated to the at least one filamentous polymeric fabric layer 5d.

As shown in Figure 7(a) the laminated breathable fabric 10d comprises the reflective film 30d, the breathable polymeric membrane 15d and the spunbond filamentous polymeric fabric layer 5d. The film 30d, membrane 15d and spunbond 5d are intermittently bonded to preserve the moisture vapour transmission properties thereof.

In a fifth embodiment shown in Figure 7(b) a further spunbond layer 20e is provided between the film 30e and membrane 15e. The further spunbond layer 20e provides additional strength.

A sixth embodiment is shown in Figure 7(c) which illustrates a laminated breathable fabric 10h having as a layer thereof a reflective film 30h. The reflective film 30h comprises a three layer structure comprising a first polyolefin polymer layer 35h formed, e.g. of polypropylene or a copolymer of polyethylene and polypropylene, upon which is deposited a second layer 40h of metal, such as aluminium, e.g. by vacuum vapour or plasma deposition. Third layer 45h comprises a polymer layer also formed of polypropylene or a copolymer of polyethylene and polypropylene.

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The reflective film 30h typically has a thickness of 25 μm to 30 μm, and is typically manufactured by a cast or blown method employing the apparatus of Figures 5 or 6(a).

The reflective film 30h is made by, for example, forming a first polymer layer 35h, followed by vacuum vapour or plasma deposition of a layer 40h of aluminium metal upon the polymer layer 35h. The polymer layer 35h with the metal deposit layer 40h formed thereon is then laminated to a second polymer layer 45h using a calender with, for example, heated smooth rolls. The polymer layers 35h and 45h typically have a thickness of approximately 15 um. The metal layer 40h typically has a thickness of the order of 40 nm.

The fabric 10h also comprises at least one spunbond filamentous polymer fabric layer 5h.

The three layer reflective film 30h is formed and microperforated, e.g. employing the apparatus of Figure 6(b), prior to lamination to the at least one spunbond filamentous polymer fabric layer 5h. The microperforations are typically of the order of 0.1 mm to 1.0 mm in diameter.

Typically the reflective film 30h has an optical density of 2 to 2.5, as measured by a Tobias Densitometer.

The emissivity of the microperforated reflective film 30h was measured according to ASTM C 1371-98, giving a value of typically 0.23 to 0.28, and in one case 0.14.

Figure 7(d) shows a typical pattern of microperforations in the reflective film 30h which are

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spaced apart, typically at around 4.5 mm and 5 mm, in an offset pattern as shown by arrows 60 and 65 respectively. The microperforated offset pattern assists in maintaining the strength of the reflective film 30h.

As shown in Figure 7(c) the laminated breathable fabric 10h comprises the reflective film 30h and the spunbond filamentous polymeric fabric layer 5h. The film 30h and spunbond 5h are intermittently bonded to preserve the moisture vapour transmission properties thereof in a similar manner to the first and second embodiments. Such bonding may be performed using an embossed calender.

During lamination of the reflective film 30h to the spunbond layer 5h, the polymer layer 45h of the reflective film 30h is optionally caused to melt and thereby adhere to the spunbond layer 5h. In this way, polymer layer 45h can be considered to be a so-called hot melt adhesive.

Like layers of the fabrics 10d;10e;10h comprise the same material as those of the fabrics 5a;5b of the first and second embodiments. Particularly the spunbond layers 5d;5e;15e;5h can contain a UV stabiliser and/or a hydrophobic additive.

Also the film 30d;30e, further spunbond 20d, membrane 15d;15e, and spunbond 5d;5e are intermittently bonded to preserve the moisture vapour transmission properties thereof, in a similar manner to the first and second embodiments.

The laminated breathable fabric 10d;10e;10h finds use as a breathable building or construction material 25d;25e;25h. The breathable building material

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25d;25e;25h can be adapted for use as a roofing underlay. However, alternatively the breathable building material 25d;25e;25h can advantageously be adapted for use as a housewrap or wall breather membrane, or alternatively as a temporary cover, e.g. a building cover or scaffolding cover, or tent, tarpaulin or the like. The breathable building material 25d, 25e, 25h may also find use as a flooring material.

The laminated breathable fabric 10d;10e;10h is manufactured by a method comprising the steps of: providing the reflective film 30d;30e;30h forming a filamentous polymeric fabric 5d;5e;5h and forming the reflective film 30d;30e;30h and filamentous polymeric fabric 5d;5e;5h into the laminated breathable fabric 10c;10d;10h. The step of providing the reflective film 30d;30e;30h may be carried out using the apparatus of Figure 5 or Figures 6(a) and (b).

In respect of reflective film 30d;30e, the reflective material is a metallic material or a metal, and the polymeric material and reflective material are provided as a metallised polymer master-batch. The metal, e.g. aluminium, is finely ground and added to a polymeric melt used to produce the reflective membrane. The manufacture of such a membrane comprising a microporous polypropylene film is described in EP 0283 200 A by Exxon. The aluminised masterbatch is a concentrate of finely ground aluminium particles in a suitable carrier to give good dispersion throughout the melt.

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The step of forming is carried out by calendering. Such method may be carried out "OFF-LINE" using the apparatus of Figures 2 and 3 or "ON-LINE" using the apparatus of Figure 4.

The fabric 10d may comprise a reflective film 30d having a weight of around 30 g/m^2, a membrane 15d having a weight of around 25 g/m^2 to 35 g/m^2 and a filamentous polymeric fabric layer 5d having a weight of around 60 g/m^2 to 100 g/m^2.

The fabric 10h may comprise a reflective film 30h having a weight of around 30 g/m^2 and a filamentous polymeric fabric layer 5h having a weight of around 60 g/m^2 to 100 g/m^2.

It will be understood that breathable membranes are typically inherently weak, and in order to achieve the high tensile and nail tear properties required by the construction industry, the membrane can be reinforced by combining it with a reinforcing layer or layers. The preferred reinforcing layer(s) as disclosed is a nonwoven fabric produced by a spunbonding process referred to herein as a 'spunbond', but other types of reinforcing, such as a carded nonwoven fabric or a woven fabric or scrim, may be provided, either in place of the spunbond or in addition to the spunbond.

THIRD EXAMPLE

Referring to Figure 8(a) there is illustrated a woven polymeric fabric 5f according to a seventh embodiment of the present invention, strands of which

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comprise a polymeric material and a reflective material. The strands are in the form of tapes 35f.

The reflective material is capable of reflecting at least infra-red (IR) radiation/heat. The reflective material typically substantially comprises a metal or metallic based material, and in this embodiment comprises aluminium or an alloy thereof.

The polymeric material can comprise additives such as ultra-violet (UV) stabiliser, hydrophobic additives, flame retardants, pigments (e.g. colour pigments) and/or plasticisers.

The tapes 35f can be of a mono-layer construction. Alternatively, the tapes 35f can be of a multi-layer construction. In a multi-layer construction the reflective material can be added to an inner layer of a co-extruded tape 35f. In one embodiment the multi-layered tape 35f is a three layer construction, wherein a centre layer contains the reflective material and the outer layers contain a UV stabiliser.

A breathable fabric 10f comprises in part woven polymeric fabric 5f. The construction of the woven fabric 5f is selected so as not to impair moisture vapour transmission properties of the fabric 10f.

The breathable fabric 10f comprises a laminate material including a first layer comprising the woven polymeric fabric 5f and a second layer comprising a breathable polymeric membrane 15f. The first and second layers 5f,15f are intermittently bonded together preferably to preserve the moisture vapour transmission properties thereof.

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The breathable fabric 10f comprises a third layer of filamentous polymeric material 20f, the first, second and third layers 5f,15f,20f being intermittently bonded together to preserve the moisture vapour transmission properties thereof.

The breathable fabric 10f thus comprises a laminate material including a first layer comprising the woven polymeric fabric 5f, and a second layer comprising a breathable polymeric membrane 15f. The first layer 5f comprises a top layer and the second layer 15f comprises an under layer. The first and second layers 5f,15f are stabilised respectively against ultra-violet light degradation and heat degradation. The breathable polymeric membrane 15f comprises a UV stabilised breathable membrane, which may or may not have a hydrophobic treatment applied via the melt or topically.

In an eighth embodiment as shown in Figure 8(b) the laminate 10g is further provided with a further spunbond fabric 21g between the woven fabric 5g and the membrane 15g. Thus in the seventh embodiment the breathable fabric 10g further comprises a fourth layer of filamentous polymeric material 21g between the woven polymeric fabric 5g and the membrane 15g.

The first layer 5g, fourth layer 21g, second layer 15g and third layer 20g are advantageously intermittently bonded preferably to preserve the moisture vapour transmission properties thereof.

The woven polymeric fabric 5f;5g/breathable fabric 10f;10g find use as a breathable building material 25f;25g. The breathable building material 25f;25g can be

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adapted for use as a roofing underlay. However, the breathable building material 25f;25g can advantageously be adapted for use as a housewrap or wall breather membrane, or alternatively as a temporary cover, e.g. a building cover or scaffolding cover, tent, tarpaulin or the like. The breathable building material may also find use as a flooring material.

The woven polymeric fabric 5f;5g is manufactured by a method comprising the steps of: providing a polymeric material and a reflective material; forming the polymeric material and the reflective material into strands, e.g. tapes or threads; and weaving the strands together. The reflective material is a metallic material or a metal, and the polymeric material and reflective material are provided as a metallised polymer masterbatch as is the first example.

The breathable fabric 10f;10g is manufactured by a method comprising the steps of: forming the woven polymeric fabric 5f;5g; providing a breathable polymeric membrane 15f;15g; and laminating the woven polymeric fabric 5f;5g and the breathable polymeric membrane 15f;15g one to the other.

Such method can be carried out using either of the tape forming apparatus 500, 600 of Figures 9 or 10, a weaving loom (not shown), either of the membrane forming apparatus 300; 400, 450 of Figure 5 or Figures 6(a) and (b), respectively, and the lamination apparatus 150 of Figure 3.

The tape forming apparatus 500 of Figure 9 comprises a spinneret apparatus having a polymer feed 501, an

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extruder 502 including a tape extrusion means 503 for forming spun tapes 504, a quencher 505, an accumulator 506, an orientation/annealing means 507 and wind up spools 508.

The tape forming apparatus 600 of Figure 10 comprises a slit film apparatus having a polymer feed 601, an extruder 602 including a tape extrusion means 603 for forming a cast film 604, a chill roll 605, a film slitting means 606, an orientation/annealing means 607 and wind up spools 609 for tapes 610.

The fabric 10f,10g may comprise a woven fabric 25f,25g, having a weight of around 50 g/m^2, a membrane 15f,15g having a weight of around 30 g/m^2, and a filamentous polymeric fabric 20f,20g having a weight of around 30 g/m^2 to 100 g/m^2.

Referring now to Figure 11, there is shown a cross-sectional side view of part of a building construction comprising a roof 700, e.g. a tiled roof, including a filamentous polymeric fabric 5a-5g/ breathable fabric 10a-10g as a roofing underlay and a plurality of tiles 701. As can be seen, the roof 700 may include a plurality of overlapping lengths of fabric 5a-5g, 10a-10g.

Referring finally to Figure 12, there is shown a cross-sectional side view of part of a building construction comprising a cavity wall 800 of a timber frame 801, including a filamentous polymeric material 5a-5g/breathable fabric 10a-10g as a "housewrap", (i.e. an outermost skin 802 of a timber frame 801), the construction being finished by external skin 803

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comprising bricks or the like. The building is typically constructed by erecting the timber frame 801 with outermost skin 802 and thereafter finished with the external skin 803.

It will be appreciated that the embodiments of the present invention hereinbefore described are given by way of example only, and are not meant to limit the scope of the invention in any way.

It will be understood that although the fabrics of the present invention find particularly advantageous use in the building and/or construction industry, the fabrics of the invention may also find use in other sectors. Normally in such use, including roofing and housewrap, the reflecting layer can be disposed so as to be outer facing, e.g. to keep heat in and/or out. However, it will be appreciated that a reflective side of the breathable fabrics according to the present invention may be disposed outermost or innermost, e.g. in construction or building applications.

Also, a non-reflective/non-metallic side of a laminated fabric of the present invention may be non-pigmented or pigmented. For example, the colour white is preferred to augment the non-IR absorptive aspect of the fabric. Alternatively, the non-reflective/non-metallic side may be coloured, e.g. green.

Further, although the disclosed examples suggest calendering as the preferred lamination technique, other techniques may be suitable, e.g. ultrasonic spot welding or adhesive bonding.

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The preferred disclosed lamination process is a thermal bond technique; hence one should select polymers for the membrane and reinforcing fabric(s), which are thermally compatible. The lamination process may be carried out in line, i.e. during the spunbond manufacturing process, when the membrane is fed on to the web on unbonded fibres prior to calendering. The mass is then passed through the calender where the fibres are bonded to each other and to the membrane simultaneously.

Alternatively and beneficially the lamination may be carried out of line, i.e. as a totally independent process, where each component is already partly or wholly bonded, or is a microporous film. Components are passed simultaneously through a free standing calender with a smooth and embossed roller. In either case, the embossed roller should have an embossing area of 72% to 35% of the surface area, and should have a diamond, round or other shape. The smooth roll should be of the swim roll type.

Other lamination methods, such as ultrasonic or adhesive may be used, but it is desired that, whatever method is selected, bonding is carried out at discrete points only, so as not to impair the Moisture Vapour Transmission properties of the end product.

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CLAIMS

1. A laminated breathable fabric having as a layer thereof a reflective film or membrane.

2. A laminated breathable fabric as claimed in claim 1, wherein the reflective film or membrane comprises a moisture vapour permeable and air/gas permeable film.

3. A laminated breathable fabric as claimed in either of claims 1 or 2, wherein the reflective film or membrane comprises a microperforated or microporous metallised film.

4. A laminated breathable fabric as claimed in claim 3, wherein the microperforated or microporous metallised film comprises microperforations or micropores of around 0.1 mm to 15 mm in diameter.

5. A laminated breathable fabric as claimed in either of claims 3 or 4, wherein the microperforations or micropores have a size of around 0.1 mm to 1.0 mm.

6. A laminated breathable fabric as claimed in any of claims 3 to 5, wherein the miroperforations or micropores are around 0.6 mm in diameter.

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7. A laminated breathable fabric as claimed in any of claims 3 to 6, wherein the microperforations or micropores have a surface coverage of around 2% to 10%.

8. A laminated breathable fabric as claimed in any of claims 3 to 7, wherein there are provided around 30 microperforated holes/inch^2.

9. A laminated breathable fabric as claimed in any preceding claim, wherein the reflective film or membrane comprises a polymeric material and a reflective material.

10. A laminated breathable fabric as claimed in claim 9, wherein the reflective material is capable of reflecting at least infra-red radiation and/or heat.

11. A laminated breathable fabric as claimed in any preceding claim, wherein the reflective film or membrane has an emissivity of about 0.1 to about 0.6.

12. A laminated breathable fabric as claimed in claim 11, wherein the reflective film or membrane has an emissivity of about 0.1 to about 0.3.

13. A laminated breathable fabric as claimed in any claim 9, wherein the reflective material substantially comprises a metal or metallic based material.

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14. A laminated breathable fabric as claimed in claim 13, wherein the metal or metallic based material comprises aluminium or an alloy thereof.

15. A laminated breathable fabric as claimed in any preceding claim, wherein the reflective film or membrane comprises a single layer film or membrane or a multiple layer film or membrane.

16. A laminated breathable fabric as claimed in any preceding claim when dependent upon claim 9, wherein the reflective film or membrane comprises a three layer film or membrane, wherein a middle layer includes the reflective material.

17. A laminated breathable fabric as claimed in either of claims 15 or 16, wherein the reflective film or membrane is of an "AB" or "ABA" type, wherein "A" is a first polymeric material optionally including a UV stabiliser, and "B" is a second polymeric material including the reflective material.

18. A laminated breathable fabric as claimed in claim 9, or any of claims 10 to 17 when dependent upon claim 9, wherein the reflective material is provided as an additive to a polymeric material melt used to produce the reflective film or membrane.

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19. A laminated breathable fabric as claimed in either of claims 15 or 16 when dependent upon claim 9, wherein the reflective film or membrane comprises a multiple layer film or membrane, wherein a middle layer comprises the reflective material deposited onto one of the layers.

20. A laminated breathable fabric as claimed in either of claims 15 or 16 when dependent upon claim 9, or claim 19, wherein the reflective film or membrane is of an "AC" or "ACA" type in which "A" is a first polymeric material, optionally including a UV stabilizer, and "C" is a reflective material deposited onto one of the first polymer material layers "A".

21. A laminated breathable fabric as claimed in claim 20, wherein the first polymeric layer "A" is around 10 μm to 30 μm in thickness.

22. A laminated breathable fabric as claimed in either of claims 20 or 21, wherein the reflective material layer "C" is around 10 nm to 100 nm thick.

23. A laminated breathable fabric as claimed in any of claims 19 to 22, wherein the reflective material layer is deposited by a deposition process such as vacuum vapour deposition or plasma deposition.

24. A laminated breathable fabric as claimed in claim 9, wherein the polymeric material(s) comprises one or more

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additives selected from ultra-violet (UV) stabilisers, hydrophobic additives, flame retardants, pigments, colour pigments, and/or plasticisers.

25. A laminated breathable fabric as claimed in either of claims 9 or 24, wherein the polymeric material(s) is a thermoplastic polymer(s) selected from polypropylene, polyamide or polyester.

26. A laminated breathable fabric as claimed in any preceding claim, wherein the fabric comprises at least one breathable polymeric film or membrane layer and/or at least one filamentous polymeric fabric layer.

27. A laminated breathable fabric as claimed in claim 26, wherein the reflective film or membrane is laminated to the at least one breathable polymeric membrane or the reflective film or membrane is laminated to the at least one filamentous polymeric fabric layer.

28. A laminated breathable fabric as claimed in either of claims 26 to 28, wherein the laminated breathable fabric comprises the reflective film, a breathable polymeric membrane and a filamentous polymeric fabric layer comprising a spunbond layer, the film, membrane and spunbond layer being intermittently bonded to preserve the moisture vapour transmission properties thereof.

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29. A laminated breathable fabric as claimed in claim 28, wherein a further spunbond layer is provided between the film and membrane, the further spunbond layer providing additional strength, the further spunbond layer containing an ultra-violet stabiliser and/or a hydrophobic additive, and the film, further spunbond layer, membrane and spunbond layer being intermittently bonded to preserve the moisture vapour transmission properties thereof.

30. A laminated breathable fabric as claimed in any preceding claim, wherein the laminated breathable fabric includes a woven fabric layer.

31. A laminated breathable fabric having as a layer thereof a metal or metallised film or membrane.

32. A breathable building or construction material comprising a laminated breathable fabric as claimed in any of claims 1 to 30 or claim 31.

33. A breathable building material as claimed in claim 32, wherein the breathable building material is adapted for use as a roofing underlay, a housewrap, a wall breather membrane, or for other construction uses such as a temporary cover or as a flooring material.

34. Use as a building or construction material of a laminated breathable fabric as claimed in any of claims 1 to 30 or claim 31.

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35. A method of manufacturing a laminated breathable fabric comprising the steps of:

providing a reflective film;

providing a filamentous polymeric fabric; and

forming the reflective film and filamentous polymeric fabric into a laminated breathable fabric.

36. A method of manufacturing a laminated breathable fabric as claimed in claim 35, wherein the step of forming is carried out by calendering.

37. A method of manufacturing a laminated breathable fabric as claimed in claim 36, wherein the reflective film is a microperforated film such as an "AB", "ABA", "AC" or "ACA" construction, and the step of providing the film comprises the steps of forming the film and then microperforating the film.

38. A method of manufacturing a laminated breathable fabric comprising the steps of:

providing a metal or metallised film;

providing a filamentous polymeric fabric layer; and

forming the metal or metallised film and filamentous polymeric fabric into a laminated breathable fabric.

39. A building construction including a laminated breathable fabric as claimed in any of claims 1 to 30 or claim 31.

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40. A building construction including a laminated breathable fabric as claimed in claim 39, wherein the building construction comprises: a roof, a tiled roof, a pitched roof, a timber frame, a cavity wall or a floor.

41. A building including a building construction as claimed in either of claims 39 or 40.

42. A laminated breathable fabric comprising at least one breathable polymeric film or membrane layer laminated to at least one filamentous polymeric fabric layer, wherein a reflective material is provided on the breathable polymeric film or membrane layer.

43. A laminated breathable fabric comprising at least one breathable polymeric film or membrane layer, laminated to at least one filamentous polymeric fabric layer, wherein a metallic material is provided on the breathable polymeric film or membrane layer.

44. A filamentous polymeric fabric, filaments of which comprise a polymeric material and a reflective material.

45. A filamentous polymeric fabric filaments of which comprise a polymeric material and a metallic material.

46. A woven polymeric fabric strands of which comprises a polymeric material and a reflective material.

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47. A woven polymeric fabric strands of which comprise a polymeric material and a metallic material.

48. A fabric comprising:

a polymeric fabric comprising a polymeric material and a reflective material, or

a polymeric material layer having formed thereon a continuous breathable layer comprising or including a reflective material.

49. A fabric comprising:

a polymeric fabric comprising a polymeric material and a metallic material, or

a polymeric material layer having formed thereon a continuous breathable layer comprising or including a metallic material.

50. A laminated breathable fabric as hereinbefore described with reference to the accompanying drawings.

51. A breathable building or construction material as hereinbefore described with reference to the accompanying drawings.

52. Use as a building or construction material of a laminated breathable fabric as hereinbefore described with reference to the accompanying drawings.

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53. A method of manufacturing a laminated breathable fabric as hereinbefore described with reference to the accompanying drawings.

54. A building construction including a laminated breathable fabric as hereinbefore described with reference to the accompanying drawings.

55. A building including a laminated breathable fabric as hereinbefore described with reference to the accompanying drawings.

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Application No:	GB 0314282.5	**Examiner:**	Richard Gregson
Claims searched:	1-43, 48, 49, 50-55 in part	**Date of search:**	21 October 2003

Patents Act 1977 : Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance	
X	1-3,9, 10-14,23-27,30-36,38-43,48,49 at least	EP 1331316 A1	(THERMAL ECONOMICS) - see diagrams, abstract and column 4, paragraphs 29-35 in particular.
X	1-3,9,10, 13-15,23, 24-27,30-36,39-43 48,49 at least.	US 4230057 A	(KURZ) - see diagrams, abstract and column 1, line 46 to column 2, line 45 in particular.
X	1-3,9,10 13,14,15, 22,23,25-28,31,35, 36-38,42 48,49 at least.	GB 2294426 A	(DERMOT) - see diagrams, abstract and page 3, line 5 to page 5, line 10 in particular.
X	1-3,9,10 13,14,15, 22,23,25-28,31,35, 36-38,42 48,49 at least.	WO 96/32252 A	(GORE) - see diagrams, abstract and page 3 ,line 35 to page 5, line 8 in particular.
X	1-3,9,10 13,14,15, 22,23,25-28,31,35-38,42,48, 49 at least.	US 4569874 A	(KUZNETZ) - see diagrams, abstract and column 3, line 60 to column 4, line 29 in particular.

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Application No:	GB 0314282.5	**Examiner:**	Richard Gregson
Claims searched:	1-43, 48, 49, 50-55 in part	**Date of search:**	21 October 2003

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC[V]:

B5N

Worldwide search of patent documents classified in the following areas of the IPC[7] :

B32B : E04B : E04D

The following online and other databases have been used in the preparation of this search report :

EPODOC, WPI, JAPIO

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B5N N0328 N0706 N1508 N1520 N195 N196 N199 N20Y N207 N21X N21Y N222 N223 N224 N255 N256 N257 N258 N259 N26X N26Y N389 N46Y N477 N480 N484 N515 N517 N524 N527 N534 N537 N552 N564 N573 N58X N58Y N589 N59X N60X N648 N657 N658 N66Y N661 N670 N672 N681 N682 N684 N695 N70X N71Y N712 N725 N76X
E1D DCF D106 D1071 D1072 D2044 D401 D402 D427
U1S S1405 S1707 S3011

(56) Documents Cited
GB 2370049 A GB 2367839 A

(58) Field of Search
UK CL (Edition T) B5N
INT CL[7] B32B 3/28 15/08, E04B 1/64
Other: Online: EPODOC, WPI, JAPIO, RM25

(54) Abstract Title
Cavity wall lining sheet

(57) A cavity wall lining sheet 10 comprises a vacuum formed bubble sheet 11,12 laminated to the first face of metal foil 15. The bubble sheet may be constructed from polyethylene and the foil may comprise aluminium, with a polyethylene or lacquer corrosion resistant coating. Optionally the second face of the foil may be heat bonded to a further polyethylene sheet (150) which is tinted or otherwise treated to reduce glare from the metal foil during installation of the liner sheet. In use, vertical overlaps between adjacent lining sheets are sealed with tape, whereas horizontal overlaps are left unsealed. The liner provides cavity insulation with improved breathability due to air circulation around bubble cells 13.

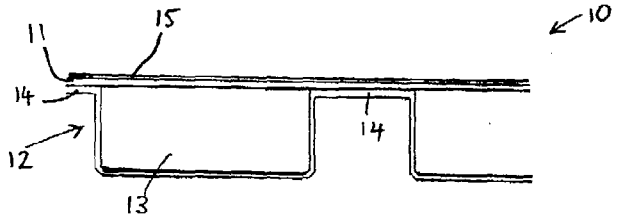


FIGURE 2

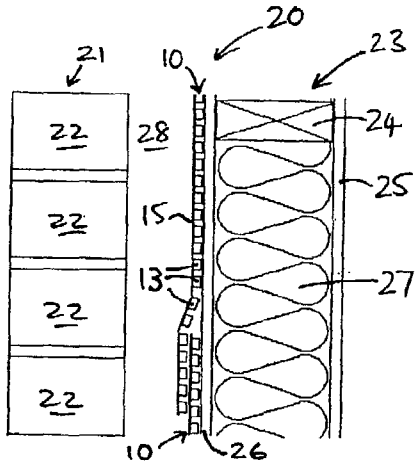


FIGURE 3

GB 2 376 206 A

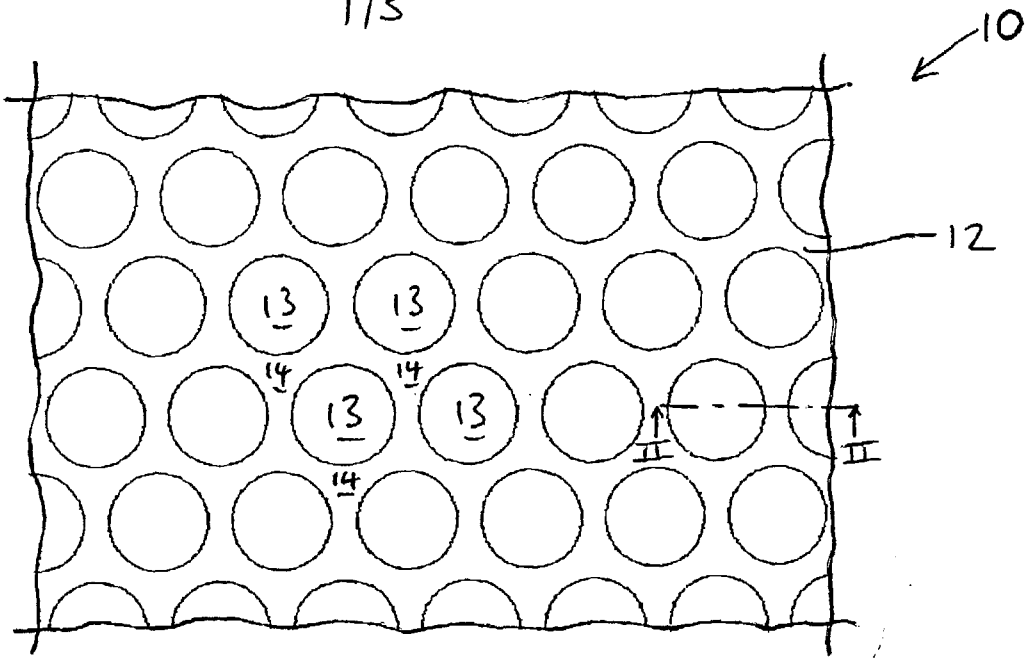


FIGURE 1

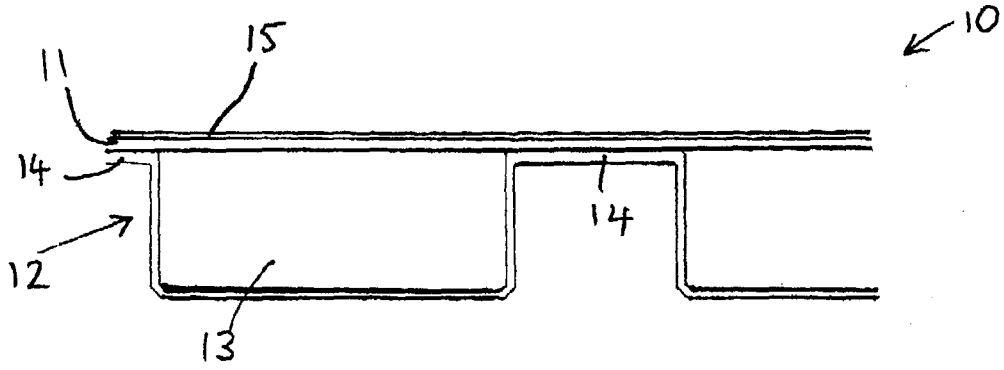


FIGURE 2

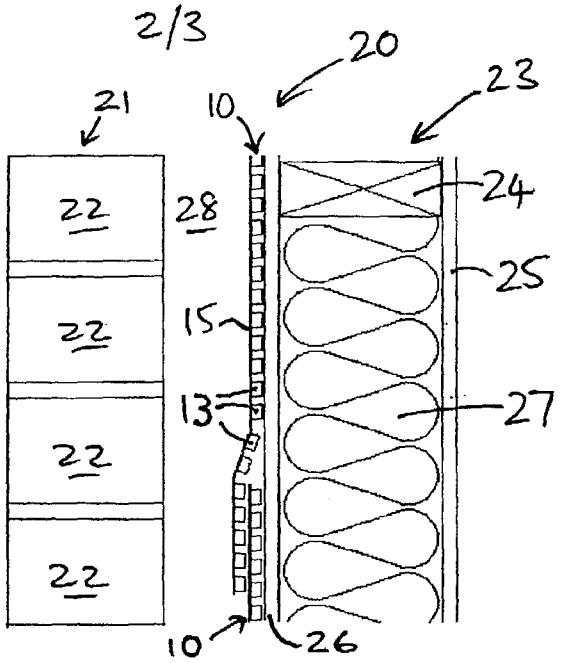


FIGURE 3

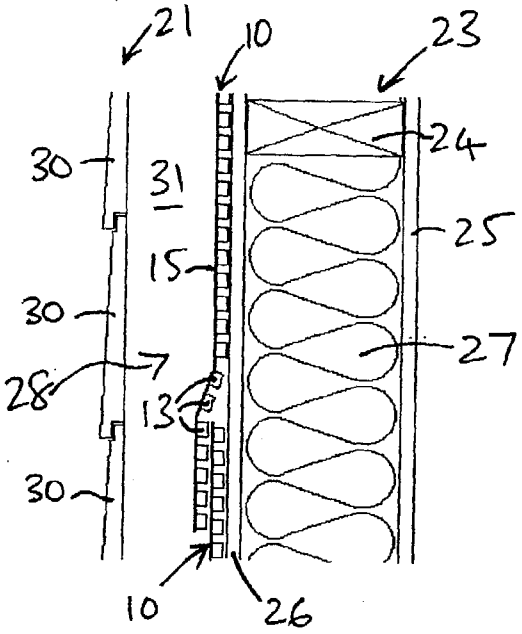


FIGURE 4

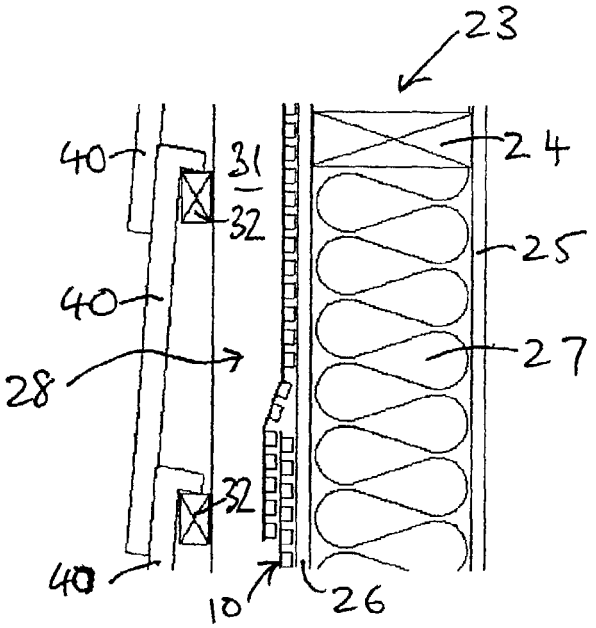


FIGURE 5

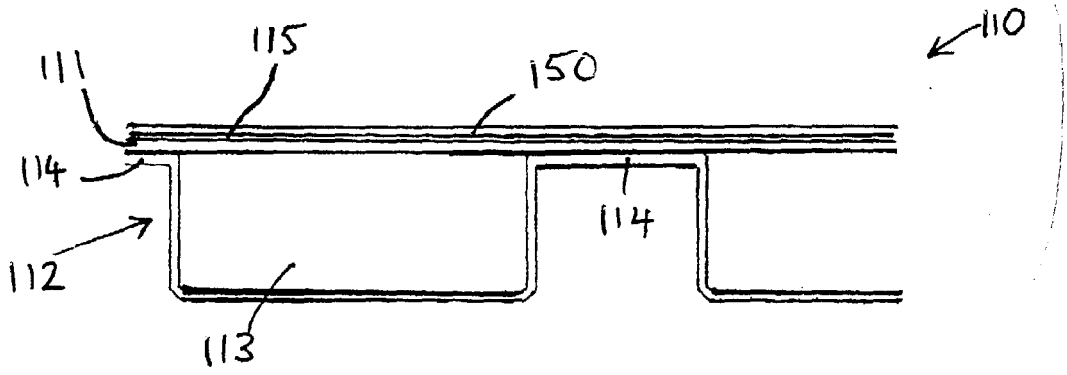


FIGURE 6

CAVITY WALL LINING SHEET

The present invention relates to cavity wall lining sheets and cavity wall constructions incorporating such lining sheets.

Cavity walls are well known and provide inner and outer walls which are spaced from each other to provide some degree of thermal insulation and a barrier to water penetrating the inner wall. The term cavity wall should, in the context of this specification, be taken to include cavity roof sections and angled walls as well as generally vertical walls.

According to a first aspect of the present invention there is provided a cavity wall lining sheet comprising a bubble sheet laminated on one major side only with a metal foil, the other major side being open thereby exposing the bubbles and allowing air to flow in the spaces between the bubbles.

Preferably the bubbles are circular in cross-section and also cylindrical in shape. In preferred arrangements the metal foil is a coated aluminium foil. It is a further preferred feature that the bubble sheet comprises a thermoplastic film laminated to a vacuum formed thermoplastic sheet. The thermoplastic film and sheet may, for example, be made of low-density polyethylene.

In preferred embodiments a further sheet is peelably attached to the exposed surface of the metal foil. With some arrangements said further sheet is made from polyethylene which is heat sealed to the exposed surface of the metal foil and also the further sheet is coloured or otherwise treated whereby glare from the metal foil is reduced.

According to a second aspect of the present invention there is provided a cavity wall construction having an inner wall and a spaced outer wall, the inner wall having attached to its outward facing surface a lining sheet as described above, the metal foil facing outwardly.

In some arrangements the outer wall is made of brick. In other arrangements the outer wall is made of tiles or cladding which are

mounted on battens attached to the inner wall with the lining sheet disposed between the battens and the inner wall. With these other arrangements the battens comprise first battens and second cross battens attached to the outward facing surfaces of the first battens.

With some cavity wall constructions, the inner wall comprises a structural frame of timber or other material having a sheathing board secured to its outermost surface. Usually wall ties link the inner and outer walls.

Preferred features are that vertical joints between adjacent lining sheets have an overlap and are taped with foil tape and also that horizontal joints between adjacent lining sheet have an upper lining sheet overlapping a lower lining sheet with the overlap left open.

Embodiments of the present invention will now be described in more detail. The description makes reference to the following drawings in which:

Figure 1 is a view from one side of a section of cavity wall lining sheet according to the present invention,

Figure 2 is an enlarged sectional view on line II-II of figure 1,

Figure 3 is a vertical section through a cavity wall construction incorporating the lining sheet shown in figures 1 and 2.

Figure 4 is a vertical section through an alternative cavity wall construction,

Figure 5 is a vertical section through a further alternative cavity wall construction, and

Figure 6 is a sectional view similar to figure 2 of a modified cavity wall lining sheet according to the present invention.

Figures 1 and 2 show a cavity wall lining sheet 10 comprising a thermoplastic film 11, which in this embodiment is a low-density polyethylene film, laminated on one major side to a vacuum formed thermoplastic sheet 12, which in this embodiment is also a low-density

polyethylene sheet. The thermoplastic sheet is vacuum formed to provide generally cylindrical bubble cells 13 arranged across the surface. As is known, the thermoplastic film 11 is laminated to those areas 14 which are not formed as cells. It is clear from the figures, the areas 14 result in space around the bubble cells 13 which enable passage of air/vapours around the bubble cells.

Laminated to the other major side of the thermoplastic film 11 is an aluminium foil 15 which has been coated, for example with polyethylene, to prevent corrosion. An alternative coating would be a thin coating of lacquer which improves the foil reflectivity and thus improves the insulation value of the construction described herein. The bubble cell side of the lining sheet 10 is, however, left open.

Figure 3 shows a cavity wall construction 20 comprising an outer wall 21 made from bricks 22 and an inner wall 23. The inner wall 23 in this embodiment comprises a timber frame 24 having an inner wall lining 25 and a sheathing board 26 attached to the outside of the timber frame 24. Insulation material 27 is provided between the inner wall lining 25, which may, for example, be plasterboard, and the sheathing board 26, which may, for example, be plywood, oriented strand board or wood particle board.

On the outward facing side of the sheathing board 26 is attached the cavity wall lining sheet 10, perhaps with staples or nails. The lining sheet 10 is attached with the bubble cells 13 against the sheathing board 26 such that the foil 15 faces outwardly into the cavity 28.

It is envisaged that wall ties would be provided at suitable locations to connect the inner and outer walls 23, 21, as is standard practise with cavity wall constructions. The wall ties are not, however, shown.

Ideally, the lining sheet 10 is fixed to the sheathing board 26 horizontally in strips perhaps 1000 mm wide, with each upper sheet 10 overlapping a lower sheet 10 as is clearly shown in figure 3. The overlap is left open at its lower edge. The amount of overlap is preferably about 75 mm but this could be longer or shorter. If sheets 10 are to meet vertically then again there should be an overlap of perhaps 100 mm and preferably the overlapping edge should be taped closed with foil tape of a suitable width.

It will be appreciated that the lining sheet 10, by virtue of its foil film 15, provides a flame retardant property for the inner wall 23. The lining sheet 10 also creates a wind-tight, draught-free, weather-sealed wall, providing a complete barrier to moisture moving inwards. However, the open nature of the cell structure lying against the sheathing boards 26 allows any water vapour present in the inner wall to exit via the channels between the cells 13 and into the cavity 28. Once in the cavity, the water vapour can exit the cavity via weep vents (not shown) in the brick work.

When the cavity wall is being constructed, the lining sheet 10 also offers some protection from the weather prior to construction of the outer wall 21 and the addition of a roof structure.

Figure 4 shows an alternative arrangement and like parts have been given the same reference numerals. In the alternative arrangement, the outer wall 21 is not made of bricks, but comprises external cladding 30. A set of vertical battens 31 are attached to the timber frame 24 through the lining sheet 10 at spaced locations horizontally along the wall. The external cladding 30 is then attached to the vertical battens 32 thus leaving a cavity 28 between the inner wall 23 and the external cladding 30. The lining sheet 10, therefore, performs the same functions and has the same effects as in the figure 3 arrangement.

Figure 5 shows a further alternative arrangement which is similar in some respects to figure 4. Like reference numerals have, therefore, been given to like parts. However, the external cladding panels 30 have been replaced by individual tiles 40 which are located on and secured to spaced horizontal counter battens 32 which are attached to the vertical battens 31. Again, this results in a cavity 28 between the inner walls 23 and the tiles 40. The lining sheet 10, therefore, performs the same functions and has the same effects as described above.

Figure 6 is similar in many respects to figure 2 and so like parts have been given like reference numerals with the addition of a "1" prefix. A further sheet 150 is included in the figure 6 embodiment. The further sheet 150 is made for example from polyethylene and is affixed to the exposed side of the foil 115 by a heat seal to form a light bond. The further sheet 150 is also coloured or otherwise treated so as to reduce glare from the foil surface, particularly during installation of the cavity wall lining sheet 110. Once the lining sheet 110 has been installed, or indeed at any other chosen time, the further sheet 150 can be peeled off the surface of the foil 115 to leave the foil surface exposed save for the corrosion prevention layer. Other methods of forming the peelable, light bond can be envisaged but heat sealing has been found to be acceptable.

It will be appreciated that the lining sheet 10 can be used in other cavity wall constructions not described above. Also the cavity wall constructions need not necessarily be vertical but could be angled, for example in roof situations.

Although the bubble cells 13 described above are cylindrical in shape, it will be understood that other shapes and sections are possible. Also the staggered arrangement of the rows of cells 13 could be varied provided there is still space around them for passage of air/vapour between the cells when the open side of the lining sheet 10 lies against the sheathing board 26.

CLAIMS

1. A cavity wall lining sheet comprising a bubble sheet laminated on one major side only with a metal foil, the other major side being open to expose the bubbles and allow air to flow in the spaces between the bubbles.

2. A cavity wall lining sheet as claimed in claim 1 wherein the bubbles are circular in cross-section.

3. A cavity wall lining sheet as claimed in claim 1 or claim 2 wherein the bubbles are cylindrical in shape.

4. A cavity wall lining sheet as claimed in any one of claims 1 to 3 wherein the metal foil is a coated aluminium foil.

5. A cavity wall lining sheet as claimed in any one of claims 1 to 4 wherein the bubble sheet comprises a thermoplastic film laminated to a vacuum formed thermoplastic sheet.

6. A cavity wall lining sheet as claimed in claim 5 wherein the thermoplastic film and sheet are made of low-density polyethylene.

7. A cavity wall lining sheet as claimed in any one of claims 1 to 6 wherein a further sheet is peelably attached to the exposed surface of the metal foil.

8. A cavity wall lining sheet as claimed in claim 7 wherein said further sheet is made from polyethylene which is heat sealed to the exposed surface of the metal foil.

9. A cavity wall lining sheet as claimed in claim 7 or claim 8 wherein the further sheet is coloured or otherwise treated whereby glare from the metal foil is reduced.

10. A cavity wall lining sheet as claimed in any one of claims 1 to 9 wherein the foil has a corrosion prevention coating of lacquer or polyethylene.

11. A cavity wall construction having an inner wall and a spaced outer wall, the inner wall having attached to its outward facing surface a lining sheet as claimed in any one of claims 1 to 10, the metal foil facing outwardly.

12. A cavity wall construction as claimed in claim 11 wherein the outer wall is made of bricks.

13. A cavity wall construction as claimed in claim 11 or claim 12 wherein wall ties link the inner and outer walls.

14. A cavity wall construction as claimed in claim 11 wherein the outer wall is made of tiles or cladding which are mounted on battens attached to the inner wall with the lining sheet disposed between the battens and the inner wall.

15. A cavity wall construction as claimed in claim 14 wherein the battens comprise first battens and second cross battens attached to the outward facing surfaces of the first battens.

16. A cavity wall construction as claimed in any one of claims 11 to 15 wherein the inner wall comprises a structural frame having a sheathing board secured to its outermost surface.

17. A cavity wall was claimed in claim 16 wherein the structural frame is made of timber.

18. A cavity wall construction as claimed in any one of claims 11 to 17 wherein vertical joints between adjacent lining sheets have an overlap and are taped with foil tape.

19. A cavity wall construction as claimed in any one of claims 11 to 18 wherein horizontal joints between adjacent lining sheets have an upper lining sheet overlapping a lower lining sheet with the overlap left open.

Application No: GB 0207775.8 **Examiner:** Richard Gregson
Claims searched: 1-19 **Date of search:** 3 October 2002

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): B5N

Int Cl (Ed.7): B32B (3/28, 15/08) : E04B (1/64)

Other: Online: EPODOC, WPI, JAPIO, RM25

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
E,X	GB 2370049 A	(YORKSHIRE BUILDING) - see whole document.	1,5
E,X	GB 2367839 A	(YORKSHIRE BUILDING) - see whole document.	1,2,4,5,11 12,14,17,19 at least.

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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(54) **Dichtungsbahn für die Bauwerksabdichtung.**

(57) Es wird eine Dichtungsbahn für die Bauwerksabdichtung mit einer Sperrschicht für Wasser und Wasserdampf beschrieben. Die Dichtungsbahn enthält wenigstens eine biaxial streckorientierte und hitzefixierte Folie aus thermoplastischem Kunststoff, die wenigstens einseitig metallisiert ist.
Außerdem wird ein Verfahren zur Verhinderung des Eindringens von Feuchtigkeit in Wärmedämmschichten von Bauwerken beschrieben. Zwischen dem Mauerwerk oder der äußeren Bauwerksverkleidung und dem zu schützenden Wärmedämmaterial wird dabei eine biaxial streckorientierte, hitzefixierte und wenigstens einseitig metallisierte Folie aus thermoplastischem Kunststoff angeordnet.

EP 0 410 275 A1

DICHTUNGSBAHN FÜR DIE BAUWERKSABDICHTUNG

Die vorliegende Erfindung betrifft eine Dichtungsbahn für die Bauwerksabdichtung mit einer Sperrschicht für Wasser und Wasserdampf.

Lang andauernde Einwirkung von Wasser und Wasserdampf kann bekanntlich die Qualität und Lebensdauer einer Wärmeisolierung an Dächern oder Wänden von Bauwerken, die üblicherweise aus geschäumten Kunststoffen oder Steinwolle besteht, beträchtlich mindern. Deshalb werden zum Schutz solcher Wärmedämmschichten in der Praxis zusätzliche Dichtungsbahnen vorgesehen. Für viele Anwendungen lassen allerdings die üblichen Dichtungsbahnen noch zu wünschen übrig.

Aus der EP-A-0 045 893 ist eine bituminöse Dichtungsbahn für die Dachabdeckung bekannt, die eine Sperrschicht aus Kunststoff-Metall-Verbundfolie enthält. Aluminium ist jedoch ein teurer und energieintensiver Rohstoff, und es besteht das Bestreben, hier wirksame Einsparungen vorzusehen, ohne daß aber die Sperrwirkung der Dichtungsbahn nachläßt.

Aufgabe der Erfindung war es daher, eine Dichtungsbahn für die Bauwerksabdichtung, insbesondere zum Schutz von Wärmedämmschichten, zu schaffen, die eine wirksame Sperre gegenüber Wasser und Wasserdampf darstellt und die gleichzeitig in großem Umfang preisgünstig und umweltfreundlich herzustellen ist.

Gelöst wird diese Aufgabe durch eine Dichtungsbahn der eingangs genannten Gattung, deren Kennzeichenmerkmal darin besteht, daß die Dichtungsbahn wenigstens eine biaxial streckorientierte und hitzefixierte Folie aus thermoplastischem Kunststoff enthält, die wenigstens einseitig metallisiert ist.

Als thermoplastischer Kunststoff sind prinzipiell alle Kunststoffe geeignet, die sich zu biaxial orientierten Folien verarbeiten lassen. Beispiele hierfür sind Polyolefine, Polystyrol, Polyamide, Polyvinylchlorid oder Polyester. Bevorzugt im Rahmen der Erfindung sind Polyolefine, insbesondere Polypropylen, und Polyester, insbesondere Polyethylenterephthalat.

Als eine Metallisierung soll im Rahmen der Erfindung eine ultradünne Metallbelegung einer Oberfläche verstanden werden, die üblicherweise durch Metallaufdampfung im Vakuum erzeugt wird. Die Dicke der Metallisierung liegt im Bereich von 20 bis 200 nm, als Metalle können Zink, Aluminium, Eisen, Chrom, Nickel u. a. verwendet werden, wobei Aluminium bevorzugt ist.

In einer bevorzugten Ausführungsform der erfindungsgemäßen Dichtungsbahn ist die Metallisierung durch eine zusätzlich auf der freien Oberfläche der Metallisierung angeordnete Kunststoffschicht vor mechanischer Beschädigung geschützt. Diese Schutzschicht kann aus Polyethylen, Polypropylen oder aus Polyester bestehen. Sie kann durch Aufkaschieren (Aufkleben) oder durch Aufextrudieren aufgebracht werden.

Wenn die erfindungsgemäße Dichtungsbahn für die Dachabdeckung Verwendung finden soll, kann sie ein- oder beidseitig mit einer Bitumenschicht kombiniert werden.

Für manche Anwendungszwecke ist es wünschenswert, einen Flammschutz für die erfindungsgemäße Dichtungsbahn vorzusehen. Dafür kann in einer besonderen Ausgestaltung der Erfindung der Rohstoff für die biaxial streckorientierte und hitzefixierte Folie zusätzlich flammhemmende Mittel enthalten. Solche Mittel sind üblicherweise Verbindungen, die Halogene, Phosphor oder Aluminium in jeweils wirksamen Konzentrationen enthalten.

Darüber hinaus können dem Kunststoff Additive wie z. B. UV-Stabilisatoren zugefügt werden, falls die Dichtungsbahn bei ihrem bestimmungsgemäßen Einsatz der direkten Witterung und dem Sonnenlicht ausgesetzt werden soll.

Die Dichtungsbahn wird gemäß der Erfindung so zwischen dem Mauerwerk oder der äußeren Bauwerksverkleidung und dem zu schützenden Wärmedämmaterial angeordnet, daß ein wirksamer Schutz gegen das Eindringen von Feuchtigkeit in das Wärmedämmaterial gewährleistet ist. Hierzu ist es vorteilhaft, die erfindungsgemäße Dichtungsbahn in Überlappungsbereichen mit geeigneten Klebern, die insbesondere auch witterungsbeständig sein sollen, zu verkleben. Die Verwendung der erfindungsgemäßen biaxial streckorientierten, hitzefixierten und metallisierten Dichtungsbahn zur Verhinderung des Eindringens von Feuchtigkeit in Wärmedämmschichten bei Bauwerken ist deshalb besonders vor teilhaft, weil die erfindungsgemäße Dichtungsbahn wegen der Streckorientierung eine besonders gute Reißfestigkeit besitzt und weil sie infolge der Hitzefixierung auch eine ausreichend hohe Dimensionsstabilität unter der Einwirkung üblicher witterungsbedingter Temperaturunterschiede über einen Zeitraum von mehreren Jahren gewährleistet.

Die Erfindung wird nachfolgend beispielhaft durch die Zeichnung näher erläutert. Die einzige Figur zeigt in seitlicher Ansicht einen senkrechten Schnitt durch eine erfindungsgemäße Dichtungsbahn. Mit Bezugsziffern sind insbesondere die biaxial streckorientierte und hitzefixierte Folie aus Kunststoff 1, die Metallisierung 2 und die Deckschicht 3 hervorgehoben.

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Ansprüche

1. Dichtungsbahn für die Bauwerksabdichtung mit einer Sperrschicht für Wasser und Wasserdampf, dadurch gekennzeichnet, daß die Dichtungsbahn wenigstens eine biaxial streckorientierte und hitzefixierte Folie aus thermoplastischem Kunststoff enthält, die wenigstens einseitig metallisiert ist.

2. Dichtungsbahn nach Anspruch 1, dadurch gekennzeichnet, daß der thermoplastische Kunststoff Polypropylen oder Polyethylenterephthalat ist.

3. Dichtungsbahn nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Metallisierung eine durch Vakuumaufdampfung erzeugte Aluminiumschicht ist.

4. Dichtungsbahn nach Anspruch 1, dadurch gekennzeichnet, daß auf der freien Oberfläche der Metallisierung eine zusätzliche Kunststoffschicht angeordnet ist.

5. Dichtungsbahn nach Anspruch 4, dadurch gekennzeichnet, daß die zusätzliche Kunststoffschicht aus Polypropylen, Polyethylen oder Polyethylenterephthalat besteht.

6. Dichtungsbahn nach Anspruch 1 bis 5, dadurch gekennzeichnet, daß sie wenigstens einseitig mit einer Bitumenschicht überzogen ist.

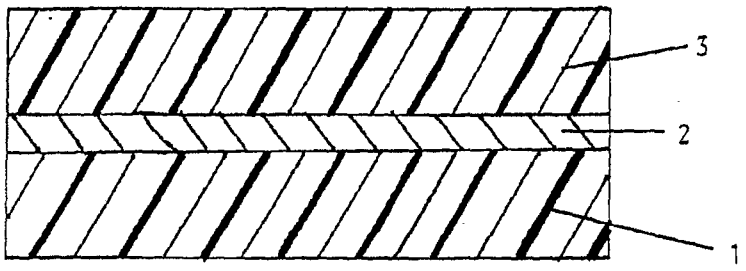
7. Dichtungsbahn nach Anspruch 1 bis 6, dadurch gekennzeichnet, daß sie zusätzlich flammhemmende Mittel enthält.

8. Dichtungsbahn nach Anspruch 1 bis 6, dadurch gekennzeichnet, daß sie zusätzlich UV-Stabilisatoren enthält.

9. Verfahren zur Verhinderung des Eindringens von Feuchtigkeit in Wärmedämmschichten von Bauwerken, bei dem zwischen dem Mauerwerk oder der äußeren Bauwerksverkleidung und dem zu schützenden Wärmedämmaterial eine biaxial streckorientierte, hitzefixierte und wenigstens einseitig metallisierte Folie aus thermoplastischem Kunststoff angeordnet wird.

10. Verwendung einer biaxial streckorientierten, hitzefixierten und wenigstens einseitig metallisierten Folie aus thermoplastischem Kunststoff zur Verhinderung des Eindringens von Feuchtigkeit in Wärmedämmschichten bei Bauwerken.

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Europäisches Patentamt

EUROPÄISCHER RECHERCHENBERICHT

Nummer der Anmeldung

EP 90 11 3709

EINSCHLÄGIGE DOKUMENTE

Kategorie	Kennzeichnung des Dokuments mit Angabe, soweit erforderlich, der maßgeblichen Teile	Betrifft Anspruch	KLASSIFIKATION DER ANMELDUNG (Int. Cl.5)
X	DE-A-3 708 354 (HOECHST AG) * Spalte 1, Zeile 64 - Spalte 4, Zeile 62; Spalte 5, Zeile 56 - Spalte 6, Zeile 31 *	1-3	E 04 B 1/66
Y		4-6,9,10	
Y,D	EP-A-0 045 893 (WOLFF WALSRODE AG) * Insgesamt *	4-6,9,10	
X	US-A-4 622 950 (G. GREENBAUM) * Spalte 1, Zeilen 36-68; Spalte 6, Zeile 37 - Spalte 7, Zeile 9; Anspruch 19; Figuren 11,12 *	1,2	
A		3-5	
A	EP-A-0 129 809 (BEIERSDORF AG) * Seite 2, Zeilen 7-10; Seite 3, Zeilen 5-7; Ansprüche 1,3 *	1,2	
A	JAPANESE PATENT GAZETTE, week 8322, 13. Juli 1983, Sektion Ch, Klasse A, Seite 1, Zusammenfassung Nr. 83-52522K/22, Derwent Publications Ltd, London, GB; & JP-A-58 067 411 (TEIJIN K.K.) 22-04-1983 * Das ganze Dokument *	7,8	
A	DE-A-3 513 526 (HOECHST AG)		RECHERCHIERTE SACHGEBIETE (Int. Cl.5) E 04 B

Der vorliegende Recherchenbericht wurde für alle Patentansprüche erstellt

Recherchenort	Abschlußdatum der Recherche	Prüfer
Den Haag	24 Oktober 90	KAPPOS A.

KATEGORIE DER GENANNTEN DOKUMENTE

X: von besonderer Bedeutung allein betrachtet
Y: von besonderer Bedeutung in Verbindung mit einer anderen Veröffentlichung derselben Kategorie
A: technologischer Hintergrund
O: nichtschriftliche Offenbarung
P: Zwischenliteratur
T: der Erfindung zugrunde liegende Theorien oder Grundsätze

E: älteres Patentdokument, das jedoch erst am oder nach dem Anmeldedatum veröffentlicht worden ist
D: in der Anmeldung angeführtes Dokument
L: aus anderen Gründen angeführtes Dokument

&: Mitglied der gleichen Patentfamilie, übereinstimmendes Dokument

PATENT COOPERATION TREATY

From the:
INTERNATIONAL SEARCHING AUTHORITY

To:

Peter C DUMMER
Wallington-Dummer
GPO Box 3888
SYDNEY, NSW 2001

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	13 OCT 2010
Applicant's or agent's file reference 105002	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/AU2010/001026	13 August 2010	14 August 2009

International Patent Classification (IPC) or both national classification and IPC

Int. Cl.

E04B 1/74 (2006.01) *B32B 27/00* (2006.01)
E04D 5/10 (2006.01) *C23C 14/24* (2006.01)

Applicant

STORM HOLDING (AUST) PTY LTD et al

1. This opinion contains indications relating to the following items:

[X]	Box No. I	Basis of the opinion
[ ]	Box No. II	Priority
[ ]	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
[ ]	Box No. IV	Lack of unity of invention
[X]	Box No. V	Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
[ ]	Box No. VI	Certain documents cited
[ ]	Box No. VII	Certain defects in the international application
[X]	Box No. VIII	Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA	Date of completion of this opinion	Authorized Officer
AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. +61 2 6283 7999	08 October 2010	**RAJEEV DESHMUKH** AUSTRALIAN PATENT OFFICE (ISO 9001 Quality Certified Service) Telephone No. +61 3 9935 9622

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/AU2010/001026

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   [X] The international application in the language in which it was filed

   [ ] A translation of the international application into, , which is the language of a translation furnished for the purposes of international search (under Rules 12.3(a) and 23.1(b)).

2. [ ] This opinion has been established taking into account **the rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

      [ ] on paper

      [ ] in electronic form

   b. (time)

      [ ] in the international application as filed

      [ ] together with the international application in electronic form

      [ ] subsequently to this Authority for the purposes of search

4. [ ] In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/AU2010/001026

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	**4, 7, 13–14, 18–19**	**YES**
	Claims	**1–3, 5–6, 8–12, 15–17, 20–24**	**NO**
Inventive step (IS)	Claims	**NONE**	**YES**
	Claims	**1–24**	**NO**
Industrial applicability (IA)	Claims	**1–24**	**YES**
	Claims	**NONE**	**NO**

2. Citations and explanations:

US 2008/0060302 A1 (BLETSOS, IV et al.) 13 March 2008. BLETSOS (abstract) discloses a composite sheet material is suitable for use as a building construction wrap such as roof lining and house wrap. The metallized composite sheet is formed by coating a moisture vapour permeable sheet with at least one metal layer and at least one outer organic coating layer. Paragraph [0034] discloses that sheets used in the construction industry are typically formed from polyolefins such as polypropylene or high density polyethylene, polyesters, or polyamides. Paragraph [0044] states that vacuum vapour deposition methods known in the art are preferred for depositing the metal and organic coatings. Paragraph [0047] states that suitable compositions for the organic coating layer(s) include polyacrylate polymers and oligomers. Even though the sheet material appears to be quite similar to that claimed in the present claims, BLETSOS does not disclose the sheet material to be heat shrinkable. Thermoplastic polymers such as polyolefins are eminently suitable and are very widely used for making heat shrinkable films (by heating and stretching the film, and cooling it while stretched; such film will recover i.e. shrink on reheating). However BLETSOS does not make any reference to stretching, recovery, or shrinkability and is therefore considered to be a document defining the general state of the art which is not considered to be of particular relevance.

GB 2 388 815 A (DON & LOW LTD.) 26 November 2003. DON & LOW discloses fabrics or materials that may find particularly beneficial application as construction fabrics, such as in the building industry, e.g. as house-wrap or as roofing underlay or in flooring. DON & LOW (page 15, lines 3 to 12) discloses that *"The membrane may comprise a polymeric material and a reflective material. Preferably the reflective material is capable of reflecting at least infra-red radiation and/or heat. Preferably the reflective film or membrane has an emissivity of about 0.1 to about 0.6, and preferably about 0.1 to about 0.3. The reflective material may substantially comprise a metal or metallic based material, e.g. aluminium or an alloy thereof."* DON & LOW (page 16, lines 3 to 30) further discloses that *"As another alternative, the reflective membrane may comprise a multiple layer membrane, e.g. a three layer membrane wherein a middle layer comprises the reflective material deposited onto one of the layers. For example, the membrane may be of an "AC" or "ACA" type in which "A" is a first polymeric material, advantageously including a UV stabilizer, and "C" is a reflective material deposited onto one of the first polymer material layers "A". The first polymeric layer "A" may be around 10 μm to 30 μm in thickness, and preferably around 15 μm thick. The reflective material "C" may be around 10 nm to 100 nm thick, and preferably around 40 nm thick. The reflective material may be deposited by a deposition process, e.g. vacuum vapour deposition or plasma deposition. The polymeric material(s) may comprise one or more additives such as ultra-violet (W) stabilizers, hydrophobic additives, flame retardants, pigments (e.g. colour pigments), and/or plasticizers. The polymeric material(s) may be a thermoplastic polymer(s), e.g. selected from polypropylene, polyamide or polyester. The fabric may also comprise at least one breathable polymeric film or membrane layer, and/or at least one filamentous polymeric fabric layer. Advantageously, in one embodiment the reflective film may be laminated to the at least one breathable polymeric membrane."* Even though the membrane appears to be quite similar to that claimed in the present claims, DON & LOW does not disclose the membrane to be heat shrinkable, and is therefore considered to be a document defining the general state of the art which is not considered to be of particular relevance.

... continued in Supplemental Box 1

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. The statement of the claims as a whole are not clear. Independent claim 1 defines a deposited metallic reflective layer, but the method of independent claim 15 is silent about "depositing" a metallic layer, and independent claim 23 is silent about the layer of vapour deposited metal being reflective. On the other hand, independent claim 13 defines a top coat protecting a layer of vapour deposited layer but the independent claim s 1 and 15 are silent about a top coat. Independent claim 1 refers to a film "for weatherproofing" but independent claims 15 and 23 make no reference to weatherproofing.
2. Claims 1 to 14 and 23 to 24 are product claims but are not clear because they are defined by intended purpose of the product (e.g. adapted for weather proofing, adapted for heat insulation, located between ..., adapted for packaging), or by method of manufacturing the product (e.g. provided with a deposited metallic reflective layer, a protective top layer is applied over said metallic reflective layer, heat applied to said film subsequent to fixing to said building shrinks the film). Such claims would have been clearer had they been drafted as method claims, or as product claims defined by features of the product itself.

Supplemental Box 1

In case **the space in any of the preceding boxes is not sufficient.**

Continuation of: Box No. V

GB 2 376 206 A (BRITISH SISALKRAFT LIMITED) 11 December 2002 discloses a cavity wall lining sheet comprising a vacuum formed bubble sheet laminated to a metal foil. The metal foil may comprise aluminium, with a polyethylene or lacquer corrosion resistant coating (abstract). BRITISH SISALKRAFT is considered to be a document defining the general state of the art which is not considered to be of particular relevance.

US 6,632,496 B1 (JOHNSON, MRC et al.) 14 October 2003 (column 3, lines 26 to 42, and claims 1, 7–9) discloses a metallised heat shrinkable polymer film 40, the film including a layer of vapour deposited metal and inner layer 30. The inner layer 30 is not considered to be a "top coat" because the two layers 40 and 30 are brought into close proximity only after heat shrinking. JOHNSON is considered to be a document defining the general state of the art which is not considered to be of particular relevance.

US 2008/0022620 A1 (CROWLEY, S) 31 January 2008 discloses a flexible weather resistant building wrap having multiple layers (including a metallized polymeric layer, e.g. polyester metallized with aluminium). Figure 3 and paragraphs [0034]–[0035] disclose a metallized polymeric layer 19,20 joined to a polyethylene foam layer 22 by means of an adhesive layer 21. CROWLEY dos not disclose that the wrap is heat shrinkable. CROWLEY is considered to be a document defining the general state of the art which is not considered to be of particular relevance.

NOVELTY (N)

US 4,818,588 A (OKABE, M et al.) 4 April 1989. OKABE discloses a metallised heat-shrinkable polymer film (abstract; column 4, lines 15 to 26); said film including a layer of vapour deposited metal (column 5, lines 12 to 21) and a top coat protecting said layer (column 6, lines 4 to 24); said film adapted for packaging of items (abstract) subject to detrimental effect of light and/or heat (column 1, lines 6 to 18). The film includes an externally applied, non electrically conductive coating thereby to render the film non electrically conductive (column 6, lines 4 to 24). Therefore the subject matter of claims 23 and 24 is not new and does not meet the requirements of Article 33(2) of the PCT with regard to novelty.

EP 0 410 275 A1 (HOECHST AKTIENGESELLSCHAFT) 30 January 1991. HOECHST (abstract) discloses a damp-proof sheet for the sealing of buildings having a barrier layer for water and water vapour. The damp-proof sheet contains at least one biaxially stretch-oriented and heat-set sheet of thermoplastic material which is metallised on at least one side. In addition, a method of preventing the ingress of moisture into heat insulating layers of buildings is described. In this method, a biaxially stretch-oriented, heat-set sheet of thermoplastic material which is metallised on at least one side is arranged between the masonry or the outer facing of the building and the heat insulating material to be protected. Figure 3 shows the biaxially stretch-oriented and heat-set plastic foil 1, the metallization 2, and the covering layer 3. According to column 1, lines 36 to 51, *"In principle all plastics which can be converted to biaxial oriented films are suitable as thermoplastic resin. Examples for this are polyolefins, polystyrene, polyamides, polyvinyl chloride or polyester. Preferred ones in the scope of the invention are polyolefins, in particular polypropylenes, and polyesters, in particular polyethylene terephthalate. As a metallization, an ultra-thin metal coating of a surface is to be understood to be within the scope of the invention, which is usually generated by metal evaporation in the vacuum. The thickness of the metallization is appropriate within the range of 20 to 200 Nm, when zinc, aluminium, iron, chromium, nickel and others are used as metals, wherein aluminium is preferred. In a preferable embodiment of the sealing sheet according to invention the metallization is protected by an additional plastic layer against mechanical damage, arranged on the free surface of the metallization. This protective layer can consist of polyethylene, polypropylene or of polyester. It can be applied by gluing on or by extrusion. If the sealing sheet according to invention for the roof cover it can be used alone or be combined with a bitumen layer combined."*

... *continued in Supplemental Box 2*

Supplemental Box 2

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Supplemental Box 1

It is considered that a metallized aluminium layer would be inherently reflective; the externally applied *"additional plastics layer"* consisting possibly of *"polyethylene, polypropylene or of polyester"* would be inherently electrically non-conductive, thereby rendering the film electrically non-conductive; and the biaxially stretch-oriented thermoplastic films are inherently heat shrinkable. It is also considered that the *"metal evaporation in the vacuum"* referred to in HOECHST inherently discloses the process steps of claim 16 which are conventional. Therefore the subject matter of claims 1–3, 5–6, 8–12, 15–17 and 20–22 is not new and does not meet the requirements of Article 33(2) of the PCT with regard to novelty.

Claims 4, 7, 13–14 and 18–19 are considered to be novel because the cited prior art does not disclose features of electron beam deposition (claim 4), low-density polyethylene film (claim 7), damaged portion of a building (claims 13, 18 and 19), or heat shrinking of the film into close conformity with surfaces defined by the framing (claim 14). Therefore the subject matter of these claims is new and meets the requirements of Article 33(2) of the PCT with regard to novelty.

INVENTIVE STEP (IS)

Claims 1–3, 5–6, 8–12, 15–17 and 20–24 also lack an inventive step for the reasons given above. An invention is necessarily obvious in the light of its disclosure. Therefore the subject matter of claims 1–3, 5–6, 8–12, 15–17 and 20–24 is obvious and does not meet the requirements of Article 33(3) of the PCT with regard to inventive step.

It is considered that electron beam deposition as claimed in claim 4 is an obvious alternative to evaporative deposition disclosed in HOECHST. Therefore the subject matter of claim 4 is obvious and does not meet the requirements of Article 33(3) of the PCT with regard to inventive step.

AU 2008202416 B1 (CASE FILE MANAGEMENT SYSTEMS PTY LTD) 18 September 2008. CASE FILE MANAGEMENT (page 7, lines 12 to 21) discloses a roof cover system and a method for covering a damaged or uncompleted roof of a building. The system uses a heat shrinkable film, preferably a low-density polyethylyne. The film is preferably between 0.6 and 0.7 mm in thickness and is provided in rolls of various widths and lengths. In at least one preferred form of the film, it is provided with a heat reflective surface. Page 10 (lines 19 to 26) discloses that the heat shrinkable film 18 is provided with a heat reflective upper surface 32 so that the film 18 forms a permanent sarking layer beneath the roofing cladding, thus acting to protect the timberwork of a building prior to construction and to provide a replacement for conventional reflective sarking. CASE FILE MANAGEMENT discloses the features of claims 7 (page 5, lines 12 to 13), 13–14 and 18–19 (page 5, lines 2 to 4) and claim 14 (page 9, lines 4 to 15). It would be obvious to a person skilled in the art to combine the teachings of HOECHST and CASE FILE MANAGEMENT to arrive at the invention as claimed in claims 7, 13–14, 18–19 because both the cited documents are in the same technical field and are directed to the same technical problem (weather-proofing a building and providing a thermal barrier). Therefore the subject matter of claims 7, 13–14, 18–19 is obvious and does not meet the requirements of Article 33(3) of the PCT with regard to inventive step.

INDUSTRIAL APPLICABILITY (IA)

The claimed invention relates to a protective reflective film for insulation from light and heat energy transmission, and more particularly to a heat shrinkable film with these properties. The film may be made by or used in industry. Therefore the subject matter of these claims is new and meets the requirements of Article 33(2) of the PCT with regard to novelty.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:

Peter C DUMMER
Wallington-Dummer
GPO Box 3888
SYDNEY, NSW 2001

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing *(day/month/year)* 13 OCT 2010

Applicant's or agent's file reference
105002

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.
PCT/AU2010/001026

International filing date *(day/month/year)* 13 August 2010

Applicant
STORM HOLDING (AUST) PTY LTD et al

1. [X] The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 - 9.011.

2. [ ] The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. [ ] **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

[ ] the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

[ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. Following the expiration of 30 months from the priority date, these comments will also be made available to the public.

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaustralia.gov.au
Facsimile No. +61 2 6283 7999

Authorized officer
RAJEEV DESHMUKH
AUSTRALIAN PATENT OFFICE
(ISO 9001 Quality Certified Service)
Telephone No. +61 3 9935 9622

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
105002		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/AU2010/001026	13 August 2010	14 August 2009

Applicant

STORM HOLDING (AUST) PTY LTD et al

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ The international application in the language in which it was filed.

☐ A translation of the international application into . which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II).

3. ☐ **Unity of invention is lacking** (See Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. **2**

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

Structural Wrap Exhibit 1014, Page 328
Structural Wrap v Stormseal, IPR2024-00084

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2010/001026

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

E04B 1/74 (2006.01) *B32B 27/00* (2006.01)
E04D 5/10 (2006.01) *C23C 14/24* (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPI and EPODOC: heatshrink+, heat, shrink+, metal+, al, alumin+, metal[,]i[s,z]+, sarking, roof, wall, building, construction, fram+, repair+, damage+, film, sheet, roll, cladding, tarpaulin, weather, proof+, deposit+, evaporat+, vacuum, and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,818,588 A (OKABE, M et al.) 4 April 1989 Abstract; column 1, lines 6 to 18; column 4, lines 15 to 26; column 5, lines 12 to 21; column 6, lines 4 to 23	23–24
X Y	EP 0 410 275 A1 (HOECHST AKTIENGESELLSCHAFT) 30 January 1991 Abstract; figure 3; column 1, lines 36 to 51 Abstract; figure 3; column 1, lines 36 to 51	1-6,8-12,15-17,20-22 7,13-14,18-19
Y	AU 2008202416 B1 (CASE FILE MANAGEMENT SYSTEMS PTY LTD) 18 September 2008 Page 7, lines 12 to 21; page 10, lines 19 to 26	7,13-14,18-19

[X] Further documents are listed in the continuation of Box C [X] See patent family annex

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
08 October 2010	13 OCT 2010
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. +61 2 6283 7999	Authorized officer **RAJEEV DESHMUKH** AUSTRALIAN PATENT OFFICE (ISO 9001 Quality Certified Service) Telephone No : +61 3 9935 9622

Structural Wrap Exhibit 1014, Page 329
Structural Wrap v Stormseal, IPR2024-00084

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2008/0060302 A1 (BLETSOS, IV et al.) 13 March 2008 Abstract; paragraphs [0034], [0044], [0047]	
A	GB 2 388 815 A (DON & LOW LTD.) 26 November 2003 Page 15, lines 3 to 12; page 16, lines 3 to 30	
A	GB 2 376 206 A (BRITISH SISALKRAFT LIMITED) 11 December 2002 Abstract	
A	US 6,632,496 B1 (JOHNSON, MRC et al.) 14 October 2003 Column 3, lines 26 to 42; claims 1, 7–9	
A	US 2008/0022620 A1 (CROWLEY, S) 31 January 2008 Figure 3; paragraphs [0034]–[0035]	

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
US	4818588	DE	3639681	GB	2184672	JP	63011332
		JP	62157219U	JP	62119859		
EP	0410275	DE	8909045U				
AU	2008202416	AU	2008101060	AU	2008203409	AU	2009200232
		WO	2009146487				
US	2008060302	BR	PI0515220	CN	101044283	EP	1789622
		US	2006040091	US	2008057292	US	2008187740
		US	2010247855	WO	2006024013		
GB	2388815	EP	1400348				
GB	2376206	NONE					
US	6632496	US	6730254				
US	2008022620	WO	2008002934				

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
095009		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/AU2009/000685	2 June 2009	2 June 2008

Applicant

CASE FILE MANAGEMENT SYSTEMS PTY LTD et al

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language,** the international search was carried out on the basis of:

☒ The international application in the language in which it was filed.

☐ A translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II).

3. ☒ **Unity of invention is lacking** (See Box No. III).

4. With regard to the **title,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings,**

a. the figure of the **drawings** to be published with the abstract is Figure No. **5**

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2009/000685

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl.

E04D 5/06 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPODOC, WPI: E04G, E04B, E04F13/-, E04D and Keywords shrink or shrunk, heat or thermo or thermal, cover or protect, wrap or web or film or sheet or membrane or layer or barrier, assemble or form, ground, flashing, damaged, sarking

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 4769962 A (POHL ET AL) 13 September 1988 See figures 1 and 5 and column 3/lines 9-20, column 3/lines 43-50	1-14, 21, 22 4, 11
X Y	US 2005/0217202 A1 (CROOK) 6 October 2005 See figures 1-4 and paragraph 7, 8 and 25	1-14, 21-23, 25 15, 24
Y	US 6797218 B1 (BICKERSTAFF) 28 September 2004 See the figures and lines 52-55/column 1, column 5/claim 1	4, 11, 15, 24
A	AU 199466002 A1 (Patent No. 655571)(CSR LIMITED) 22 December 1994	

☐ Further documents are listed in the continuation of Box C ☒ See patent family annex

*. Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 July 2009	31 JUL 2009
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. +61 2 6283 7999	Authorized officer **OWEN ANDREWS** AUSTRALIAN PATENT OFFICE (ISO 9001 Quality Certified Service) Telephone No : +61 2 6283 2885

Structural Wrap Exhibit 1014, Page 333
Structural Wrap v Stormseal, IPR2024-00084

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2009/000685

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please see Supplemental Box 1

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Structural Wrap Exhibit 1014, Page 334
Structural Wrap v Stormseal, IPR2024-00084

Supplemental Box 1
(To be used when the space in any of Boxes I to IV is not sufficient)

Continuation of Box No: III

This International Application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept.

In assessing whether there is more than one invention claimed, I have given consideration to those features which can be considered to potentially distinguish the claimed combination of features from the prior art. Where different claims have different distinguishing features they define different inventions.

This International Searching Authority has found that there are different inventions as follows:

- Claims 1-14, 21, 22 are directed to a roof cover including a film of heat shrinkable material stretched over a damaged or uncompleted roof. It is considered that stretching a film of heat shrinkable material over a damaged or uncompleted roof comprises a first distinguishing feature.

- Claims 15-20, 24 are directed to a method of preparing a sheet of heat shrinkable material for protecting a roof structure including selecting a roll of heat shrink film, cutting a number of lengths, assembling lengths on the ground, positioning the assembled sheet over an area to be covered, affixing the sheet. It is considered that method of pre-assembling the sheets before applying to the roof structure comprises a second distinguishing feature.

- Claim 23 is directed to a method of protecting a roof structure including selecting a roll of heat shrinkable film, cutting a length of film, attaching a trailing edge, taking a leading edge to the opposite edge of the roof structure, attaching the leading edge to the opposite edge of the roof structure and applying heat to the film. It is considered that the method of placing the sheets on the roof structure comprises a third distinguishing feature.

- Claim 25-29 is directed to a method of applying a moisture proof building wrap to a structure including the steps of procuring a roll of heat shrinkable film, attaching an edge of the film to the structure and disposing an opposite leading edge horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands and applying heat to the film. It is considered that the method of applying a horizontal band to a structure comprises a fourth distinguishing feature.

PCT Rule 13.2, first sentence, states that unity of invention is only fulfilled when there is a technical relationship among the claimed inventions involving one or more of the same or corresponding special technical features. PCT Rule 13.2, second sentence, defines a special technical feature as a feature which makes a contribution over the prior art. The only feature common to all of the claims is heat shrinkable film. However this concept is not novel in the light of:

US 4769962 A1 (POHL ET AL) 13 September 1988.

This means that the common feature can not constitute a special technical feature within the meaning of PCT Rule 13.2, second sentence, since it makes no contribution over the prior art. Because the common feature does not satisfy the requirement for being a special technical feature it follows that it cannot provide the necessary technical relationship between the identified inventions. Therefore the claims do not satisfy the requirement of unity of invention *a posteriori*.

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member
US	4769962	NONE
US	2005217202	NONE
US	6797218	NONE
AU	199466002	NONE

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX

Electronic Acknowledgement Receipt

EFS ID:	9409286
Application Number:	12995966
International Application Number:	
Confirmation Number:	4496
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew LENNOX
Customer Number:	85936
Filer:	Joseph William Bain/Jeffrey Davis
Filer Authorized By:	Joseph William Bain
Attorney Docket Number:	9852-2
Receipt Date:	09-FEB-2011
Filing Date:	
Time Stamp:	15:29:41
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	9852-2_IDS_Trans.pdf	22730 eb1600092a4f8dd4a0a780b8d1460fdcb4b75140	no	2

Warnings:	
Information:	

2	Information Disclosure Statement (IDS) Filed (SB/08)	9852-2_IDS.pdf	42834 abd9afb99cbb6750a7f1304cab26621afeab03ed	no	5
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	9852-2_AU-002.pdf	79476 2e5e9e2b1aeecd91f15160c45264e6c0a29f3037	no	2
Warnings:					
Information:					
4	Foreign Reference	9852-2_AU-416.pdf	1461496 5ec03e6d9e71ef4a9b5208255d72fe9f7aee9a26	no	19
Warnings:					
Information:					
5	Foreign Reference	9852-2_GB-815.pdf	7602905 03752b37d804d54f65d18326fe3471cc4756e217	no	75
Warnings:					
Information:					
6	Foreign Reference	9852-2_GB-206.pdf	1319407 e954125f99e47e033321ef68c1210c5e2beff53	no	13
Warnings:					
Information:					
7	Foreign Reference	9852-2_EP-275.pdf	647115 15c2ce51a517dfb62b9d386d29feab13059a97a8	no	5
Warnings:					
Information:					
8	NPL Documents	9852-2_WO-026_WO.pdf	6295972 4041796ec4e3e6146f2ae96aa160c102074b6776	no	6
Warnings:					
Information:					
9	NPL Documents	9852-2_EP-275_ABST.pdf	25454 c43787d8a63713fea289cd7ced2d2a25d4a99835	no	1
Warnings:					
Information:					
10	NPL Documents	9852-2_WO-026_ISR.pdf	4001693 7d08e3763a3253386890825075b65ec5e7c34380	no	5

Warnings:					
Information:					
11	NPL Documents	9852-2_WO-685_ISR.pdf	718376 84b8483dab661555d3152476d69963862fc3a61f	no	5
Warnings:					
Information:					
			Total Files Size (in bytes):	22217458	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of Matthew LENNOX et al.

Application No.	12/995,966	Group:	Not Yet Assigned
Filing Date:	12-02-10	Examiner:	Not Yet Assigned
Docket No.	9852-2		

For: ROOF AND WALL COVER SYSTEM

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. §1.56, Applicants hereby disclose information on the attached PTO/SB/08A form that may be relevant to the Examiner's consideration of the above-identified application and the patentability of its claims. Applicants believe the claims in the above-identified application are patentable over the cited information. This information is provided so that the Examiner can make an independent determination. In accordance with 37 C.F.R. § 1.98(a)(2)(ii), copies of the U.S. patents are not enclosed.

The documents listed on the attached Form PTO/SB/08A were cited in the ISR for the underlying PCT/AU2009/000685, or an ISR and Written Opinion issued in respect of PCT/AU2010/001026, which is directed to similar subject matter. In accordance with 37 C.F.R. § 1.98(a)(3)(i), as a concise explanation of the relevance of the non-English language publication, EP410275, listed on the attached Form PTO/SB/08A, applicants also submit

Structural Wrap Exhibit 1014, Page 340
Structural Wrap v Stormseal, IPR2024-00084

herewith a copy of the Written Opinion of the International Searching Authority in PCT/AU2010/001026. A copy of the ISR in PCT/AU2010/001026 is also provided for the examiner's independent review. A copy of the ISR for PCT/AU2009/000685 has been previously submitted in this case on December 2, 2010. The submission of the listed information is not intended as an admission that such information constitutes prior art against the present application. Applicants do not waive any right to take any action that would be appropriate to antedate or otherwise challenge any assertion that any disclosed information is material to the present application or qualifies as prior art.

Applicants respectfully request that the listed documents be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08A be returned in accordance with MPEP §609.

This Information Disclosure Statement is submitted prior to the first office action on the merits. Therefore, it is respectfully submitted that no fee is required for consideration of this information. However, in the event any fee is deemed necessary, the Commissioner is authorized to charge the undersigned's Deposit Account No. 14-1437.

Respectfully submitted,

NOVAK DRUCE + QUIGG LLP

Date: February 9, 2011

/joseph w. bain/

Joseph W. Bain, Registration No. 34,290
525 Okeechobee Blvd, 15th Floor
West Palm Beach, FL 33401
Telephone: (561) 847-7820

Structural Wrap Exhibit 1014, Page 341
Structural Wrap v Stormseal, IPR2024-00084

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of:	Matthew LENNOX	Confirmation No.	4496
Application No.	12/995,966	Examiner:	Not yet assigned
Filing Date:	December 2, 2010	Group:	Not yet assigned

For: ROOF AND WALL COVER SYSTEM

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION FOR NON-SIGNING INVENTOR UNDER 37 CFR 1.47(a)

The undersigned representative files this petition under 37 CFR 1.47(a) to proceed without the signed declaration of co-inventor Matthew Lennox. The declaration signed by co-inventors Rodney Burge and Adam Farrow has been filed in response to a notice of missing parts concurrently with this petition.

The non-signing inventor Matthew Lennox has either not been located after diligent effort or has refused to sign the declaration. A diligent effort was made to obtain a signed declaration from the non-signing inventor. Exhibit A is the instruction letter to the Inventor Matthew Lennox at his last known address, 20 Carrington Ave., Caringbah NSW Z229 AUSTRALIA, which accompanied a complete copy of U.S. Patent Application 12/995,966 and a declaration for execution. Exhibit B is copy of the envelope evidencing package delivered and returned unclaimed on March 31, 2011—six weeks after its delivery.

This petition is necessary to preserve the rights of the assignee, Storm Holdings (Aust) Pty Ltd.

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 14-1437, referencing Attorney Docket No.: 9852-2.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner may directly contact the undersigned by phone to further the discussion.

Respectfully submitted,

Date: May 31, 2011

/joseph w. bain/

Joseph W. Bain, Reg. No. 34,290
NOVAK DRUCE + QUIGG LLP
525 Okeechobee Blvd., 15th Floor
West Palm Beach, FL 33401
Telephone: (561) 847-7800
Facsimile: (561) 847-7801



Storm Holding
(Aust) Pty Ltd

18th February 2010

Mr Matthew Lennox

Dear Mr Lennox,

We have proceeded to file a US patent application based upon the Australian application No 2008202416.

You will recall that you assigned all your rights in that invention to Case File Management Systems Pty Ltd (now Storm Holdings (Aust) Pty Ltd) by a written assignment dated 1 July 2008. In that assignment, you promised to 'execute all papers necessary in connection with any application…in Australia and or elsewhere.'

In relation to the US application, we request that you review and sign the enclosed combined Declaration and Power of Attorney. We enclose a copy of the patent application as filed, so that you can properly sign the document. We do not require any further assistance from you at this time.

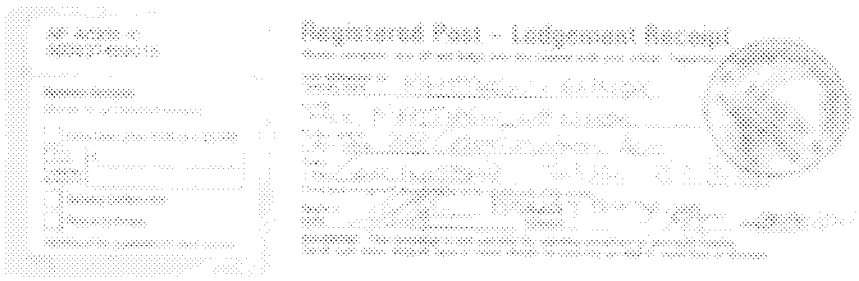
If you have any questions, please call our patent attorney, Peter Franke, on 02 8071 5300 or you can contact me personally on 0406 646 662.

Sincerely,

Rodney Burge
Director.

Storm Holding (AUST) Pty Ltd
PO BOX 911
Southgate Sylvania NSW 2224

Ph: 1800 478 676
Fax: 02 9522 5498
Email: Admin@stormseal.com.au


Registered Post - Lodgement Receipt

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As the below named inventors, we hereby declare that:

Our residences, post office addresses and citizenships are as stated below next to our names;

We believe that we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ROOF AND WALL COVER SYSTEM

the specification of which: ☐ is attached hereto.
☒ was filed on: December 2, 2010
as Application No.: 12/995,966
and was amended on: _____ (if applicable).

We have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. We acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56.

And we hereby authorize and request our agents, Novak, Druce & Quigg LLP, whose address is set forth below, to insert above, the filing date and application number of said application when known.

Prior Foreign Application(s)

We hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Country	Application Number	Date of Filing (day, month, year)	Date of Issue (day, month, year)	Priority Claimed	
AU	2008202416	02/06/2008		Yes ☒	No ☐
AU	2008203409	30/07/2008		Yes ☒	No ☐
AU	2008101060	30/10/2008		Yes ☒	No ☐
AU	2009200232	22/01/2009		Yes ☒	No ☐

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

Prior Provisional Application(s)

We hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

Application Number	Date of Filing (day, month, year)

Prior United States Application(s)

We hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Number	Date of Filing (day, month, year)	Status - Patented, Pending, Abandoned
PCT/AU2009/000685	02/06/2009	Pending

And we hereby appoint, both jointly and severally, as our attorney(s)-in-fact with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith all practitioners associated with Customer Number 85936.

All correspondence and telephone communications should be addressed to Joseph W. Bain, Registration No. 34,290 at Customer Number 85936.

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. § 1001, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature _____ Date _____

Full Name of First Inventor: LENNOX (Family Name) Matthew (First Given Name) (Second Given Name)

Citizenship: Australia

Residence: Australia

Post Office Address: Unit 27
205/213 Port Hacking Road
Miranda, NSW 2228
Australia

Signature _____ Date _____

Full Name of Second Inventor: BURGE (Family Name) Rodney (First Given Name) (Second Given Name)

Citizenship: Australia

Residence: Australia

Post Office Address: Unit 27
205/213 Port Hacking Road
Miranda, NSW 2228
Australia

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

Signature _____ Date _____

Full Name of Third Inventor:	FARROW (Family Name)	Adam (First Given Name)	(Second Given Name)
Citizenship:	Australia		
Residence:	Australia		
Post Office Address:	Unit 27 205/213 Port Hacking Road Miranda, NSW 2228 Australia		

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801



Structural Wrap Exhibit 1014, Page 350
Structural Wrap v Stormseal, IPR2024-00084

Electronic Patent Application Fee Transmittal

Application Number:	12995966
Filing Date:	
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew LENNOX
Filer:	Joseph William Bain
Attorney Docket Number:	9852-2

Filed as Large Entity

U.S. National Stage under 35 USC 371 Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Petition fee- 37 CFR 1.17(g) (Group II)	1463	1	200	200
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	1253	1	1110	1110
Miscellaneous:				
			Total in USD ($)	**1310**

Electronic Acknowledgement Receipt

EFS ID:	10200958
Application Number:	12995966
International Application Number:	
Confirmation Number:	4496
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew LENNOX
Customer Number:	85936
Filer:	Joseph William Bain
Filer Authorized By:	
Attorney Docket Number:	9852-2
Receipt Date:	31-MAY-2011
Filing Date:	
Time Stamp:	19:12:31
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1310
RAM confirmation Number	6753
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part / zip	Pages (if appl.)

1		NMPRESPONSEPETITION2.pdf	5191180 b47bc4e70673468a433c6dad16e02bde8176c135	yes	15

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Extension of Time	1	1
Applicant Response to Pre-Exam Formalities Notice	2	2
Oath or Declaration filed	3	6
Petition for review by the Office of Petitions.	7	15

Warnings:

Information:

2	Fee Worksheet (PTO-875)	fee-info.pdf	32444 0ce9946a4213637952 4f31154be17d99d6fd75f8	no	2

Warnings:

Information:

Total Files Size (in bytes):	5223624

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/22 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARMENT OF COMMERCE
Under the paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) **FY 2009** (*Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).*)	Docket Number (Optional) 9852-2
Application Number 12/995,966	Filed December 2, 2010
For ROOF AND WALL COVER SYSTEM	
Art Unit	Examiner

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

		Fee	Small Entity Fee	
☐	One month (37 CFR 1.17(a)(1))	$130	$65	$
☐	Two months (37 CFR 1.17(a)(2))	$490	$245	$
☑	Three months (37 CFR 1.17(a)(3))	$1110	$555	$ 1110.00
☐	Four months (37 CFR 1.17(a)(4))	$1730	$865	$
☐	Five months (37 CFR 1.17(a)(5))	$2350	$1175	$

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☑ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 14-1437.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☑ attorney or agent of record. Registration Number 34,290

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/joseph w. bain/ — Signature

May 31, 2011 — Date

JOSEPH W. BAIN — Typed or printed name

561-847-7800 — Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☑ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of:	Matthew LENNOX	Confirmation No. 4496
Application No.	12/995,966	Examiner: Not yet assigned
Filing Date:	December 2, 2010	Group: Not yet assigned

For: ROOF AND WALL COVER SYSTEM

RESPONSE TO NOTICE OF MISSING PARTS

Box Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Dear Sir:

This is in response to the Notice of Missing Requirements mailed December 29, 2010 (hereinafter "Notice"). The Notice requires submission of an executed Oath or Declaration of the inventors, along with payment of the late oath surcharge.

Submitted herewith are:

the Declaration/Power of Attorney signed by the co-inventors Burge and Farrow; and

a Petition For Non-Signing Inventor Under 37 CFR 1.47(a).

Payment of the surcharge is made by credit card.

Credit card payment of all required fees is submitted herewith; however, the Commissioner for Patents is hereby authorized to charge any underpayment in fees to Deposit Account No. 14-1437.

Respectfully submitted,

NOVAK DRUCE + QUIGG LLP

Date: May 29, 2011

/joseph w. bain/
Joseph W. Bain
Registration No. 34,290
525 Okeechobee Blvd., 15th Floor
West Palm Beach, FL 33401
Tel: 561-847-7800

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As the below named inventors, we hereby declare that:

Our residences, post office addresses and citizenships are as stated below next to our names;

We believe that we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ROOF AND WALL COVER SYSTEM

the specification of which: ☐ is attached hereto.
☒ was filed on: December 2, 2010
as Application No.: 12/995,966
and was amended on: _____ (if applicable).

We have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. We acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56.

And we hereby authorize and request our agents, Novak, Druce & Quigg LLP, whose address is set forth below, to insert above, the filing date and application number of said application when known.

Prior Foreign Application(s)

We hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Country	Application Number	Date of Filing (day, month, year)	Date of Issue (day, month, year)	Priority Claimed	
AU	2008202416	02/06/2008		Yes ☒	No ☐
AU	2008203409	30/07/2008		Yes ☒	No ☐
AU	2008101060	30/10/2008		Yes ☒	No ☐
AU	2009200232	22/01/2009		Yes ☒	No ☐

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

Prior Provisional Application(s)

We hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

Application Number	Date of Filing (day, month, year)

Prior United States Application(s)

We hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Number	Date of Filing (day, month, year)	Status - Patented, Pending, Abandoned
PCT/AU2009/000685	02/06/2009	Pending

And we hereby appoint, both jointly and severally, as our attorney(s)-in-fact with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith all practitioners associated with Customer Number 85936.

All correspondence and telephone communications should be addressed to Joseph W. Bain, Registration No. 34,290 at Customer Number 85936.

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. § 1001, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

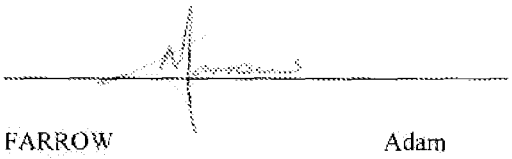
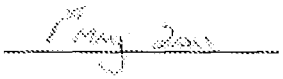
Signature _____ Date _____

Full Name of First Inventor:	LENNOX (Family Name)	Matthew (First Given Name)	(Second Given Name)
Citizenship:	Australia		
Residence:	Australia		
Post Office Address:	Unit 27 205/213 Port Hacking Road Miranda, NSW 2228 Australia		

Signature _____ Date 2nd May 2011

Full Name of Second Inventor:	BURGE (Family Name)	Rodney (First Given Name)	(Second Given Name)
Citizenship:	Australia		
Residence:	Australia		
Post Office Address:	Unit 27 205/213 Port Hacking Road Miranda, NSW 2228 Australia		

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

Signature  Date 

Full Name of Third Inventor:	FARROW (Family Name)	Adam (First Given Name)	 (Second Given Name)
Citizenship:	Australia		
Residence:	Australia		
Post Office Address:	Unit 27 205/213 Port Hacking Road Miranda, NSW 2228 Australia		

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

MAILED

JUL 25 2011

PCT LEGAL ADMINISTRATION

Joseph Bain
Novak Druce & Quigg LLP
525 Okeechobee Blvd
Suite 1500
West Palm Beach FL 33401

In re Application of:
LENNOX, Matthew, et al.
U.S. Application No.: 12/995,966
PCT No.: PCT/AU2009/000685
International Filing Date: 02 June 2009
Priority Date: 02 June 2008
Attorney's Docket No.: 9852-2
For: ROOF AND WALL COVER SYSTEM

DECISION ON PETITION UNDER 37 CFR 1.47(a)

This decision is issued in response to applicants' "Petition For Non-Signing Inventor Under 37 CFR 1.47(a)" filed on 31 May 2011. Applicants have paid the required $200 petition fee.

BACKGROUND

On 02 June 2009, applicants filed international application PCT/AU2009/000685. The international application claimed a priority date of 02 June 2008, and it designated the United States. On 10 December 2009, the International Bureau (IB) communicated a copy of the international application to the United States Patent and Trademark Office (USPTO). The deadline for submission of the basic national fee was thirty months from the priority date, i.e., 02 December 2010.

On 02 December 2010, applicants' filed materials requesting entry into the national stage in the United States including, among other materials, payment of the basic national fee.

On 29 December 2010, the United States Designated/Elected Office (DO/EO/US) mailed a "Notification Of Missing Requirements" (Form PCT/DO/EO/905) requiring submission of an oath or declaration in compliance with 37 CFR 1.497 and the surcharge for filing the oath or declaration later than thirty months after the priority date.

On 31 May 2011, applicants filed a response to the Notification Of Missing Requirements (with necessary three-month extension fee). The response included payment of the required surcharge, a partially executed declaration, and the petition under 37 CFR 1.47(a) considered herein. The petition requests acceptance of the declaration without the signature of co-inventor Matthew LENNOX, whom applicants assert cannot be located after diligent effort or has refused to execute the application.

DISCUSSION

A grantable petition under 37 CFR 1.47(a) must be accompanied by: (1) the fee under 37 CFR 1.17; (2) a statement of the last-known address of the non-signing inventor; (3) an oath or declaration executed by the other inventors on behalf of themselves and the non-signing inventor; and (4) factual proof that the inventor refuses to execute the application or cannot be reached after diligent effort.

Applicants here have submitted the required $200 petition fee, and the petition sets forth the last-known address of the non-signing inventor. Items (1) and (2) are therefore satisfied.

Regarding item (3), section 409.03(a) of the MPEP states that:

> An oath or declaration signed by all the available joint inventors with the signature block of the nonsigning inventor(s) left blank may be treated as having been signed by all the joint inventors on behalf of the nonsigning inventor(s), unless otherwise indicated.

Here, applicants have filed a declaration executed by two of the three inventors of record, and, and the declaration includes an unsigned signature block for the non-signing inventor, Matthew LENNOX. This declaration may be accepted as having been executed by the signing inventors on their own behalf and on behalf of the non-signing inventor. Item (3) of a grantable petition is therefore satisfied.

Regarding item (4), the petition asserts that the non-signing inventor cannot be located after diligent effort. MPEP section 409.03(d)(I) sets forth the requirements for a showing that a non-signing inventor cannot be located after diligent effort:

> Where inability to find or reach a nonsigning inventor "after diligent effort" is the reason for filing under 37 CFR 1.47, a statement of facts should be submitted that fully describes the exact facts which are relied on to establish that a diligent effort was made. [...]
>
> The statement of facts must be signed, where at all possible, by a person having firsthand knowledge of the facts recited therein. Statements based on hearsay will not normally be accepted. Copies of documentary evidence such as internet searches, certified mail return receipts, cover letters of instructions, telegrams, that support a finding that the nonsigning inventor could not be found or reached should be made part of the statement. The steps taken to locate the whereabouts of the nonsigning inventor should be included in the statement of facts. It is important that the statement contain facts as opposed to conclusions.

The present petition states that a letter requesting the inventor's signature, accompanied by a copy of the complete application, was forwarded to the inventor at his last-known address and that the letter was returned unclaimed. The petition includes a copy of the letter forwarded to the inventor, as well as a copy of the envelope evidencing that the letter was returned to the sender. However, the petition does not include a firsthand statement, with supporting documents, from the person who actually forwarded the correspondence to the inventor, as required to confirm such correspondence and the enclosures included therein. Moreover, an unsuccessful attempt to have correspondence delivered to the inventor at his last-known address,

on its own, is not sufficient to demonstrate a diligent effort to locate the inventor. Applicants must also provide a firsthand statement, with supporting documents, setting forth the details of additional efforts made to obtain current contact information for the non-signing inventor and contact him at such current address. Such efforts must include, but not be limited to, an internet search (with the results of such search being made of record herein). Until the required supplemental materials are provided, it cannot be concluded that the non-signing inventor cannot be located after diligent effort. Item (4) of a grantable petition is therefore not satisfied.[1]

CONCLUSION

Applicants' petition under 37 CFR 1.47(a) is **DISMISSED** without prejudice.

If reconsideration on the merits of the petition is desired, a proper response must be filed within **TWO (2) MONTHS** of the mail date of the present decision. Any request for reconsideration should be entitled "Renewed Petition Under 37 CFR 1.47(a)" and must include the additional materials required to satisfy item (4) of a grantable petition, as discussed above and in the MPEP. No additional petition fee is required.

Failure to file a proper response will result in abandonment of the application. Extensions of time are available under 37 CFR 1.136(a).

Any further correspondence with respect to this matter may be filed electronically via EFS-Web selecting the document description "Petition for review and processing by the PCT Legal Office" or by mail addressed to Mail Stop PCT, Commissioner for Patents, Office of PCT Legal Administration, P.O. Box 1450, Alexandria, Virginia 22313-1450, with the contents of the letter marked to the attention of the Office of PCT Legal Administration.

/RichardMRoss/

Richard M. Ross
Attorney Advisor
Office of PCT Legal Administration
Telephone: (571) 272-3296

[1] In the alternative, applicants may provide an acceptable showing that the inventor has refused to execute the application. The requirements for such a showing are set forth in MPEP section 409.03(d)(II). It is noted that the present record, which does not provide an acceptable showing that a proper signature request has been delivered to the non-signing inventor, does not satisfy such requirements.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of:	Matthew LENNOX	Confirmation No. 4496
Application No.	12/995,966	Examiner: Not yet assigned
Filing Date:	December 2, 2010	Group: Not yet assigned

For: ROOF AND WALL COVER SYSTEM

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RENEWED PETITION UNDER 37 CFR 1.47(a)

Applicants renew their petition under 37 CFR 1.47(a) to proceed without the signed declaration of co-inventor Matthew Lennox. Applicants' original petition was dismissed without prejudice by Decision dated July 25, 2011. The Attorney Advisor determined that all requirements to grant a petition under 37 CFR 1.47(a) were satisfied, except a sufficient showing of a diligent effort to locate the non-signing inventor. The Decision permits the filing of supplemental materials to satisfy this missing requirement.

The Decision indicates that no new petition fee is required with this renewed petition. A four month extension of time is requested with this renewed petition and payment of the extension is being made by credit card with this submission.

Applicants submit herewith the Declaration of the co-inventor Rodney Burge, who has first hand knowledge of the efforts to locate and ask co-inventor Matthew Lennox to execute the declaration and Mr. Lennox's refusal to do so.

As set forth in the Burge Declaration, the non-signing inventor Matthew Lennox has been located and has refused to sign the declaration. A diligent effort was made to obtain a signed declaration from the non-signing inventor. Exhibit A is the instruction letter to the Inventor Matthew Lennox at his last known address, 20 Carrington Ave., Caringbah NSW Z229 AUSTRALIA, which accompanied a complete copy of U.S. Patent Application 12/995,966 and a

Structural Wrap Exhibit 1014, Page 364
Structural Wrap v Stormseal, IPR2024-00084

declaration for execution. Exhibit B is copy of the envelope evidencing package delivered and returned unclaimed on March 31, 2011—six weeks after its delivery. Mr. Burge and Mr. Lennox are engaged in litigation in Australia, and through that litigation, Mr. Burge was able to obtain Mr. Lennox' telephone number. On January 11, 2012, Mr. Burge spoke to Mr. Lennox over the telephone and asked him to urgently sign the declaration. Mr. Lennox refused and hung up on Mr. Burge. Mr. Burge confirmed the phone call with a text message to Mr. Lennox. Mr. Lennox has not responded further and has not provided the signed declaration. This is a sufficient showing to conclude that Mr. Lennox has refused to sign the declaration.

This petition is necessary to preserve the rights of the assignee, Storm Holdings (Aust) Pty Ltd.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner may directly contact the undersigned by phone to further the discussion.

Respectfully submitted,

Date: January 25, 2012

/joseph w. bain/
Joseph W. Bain, Reg. No. 34,290
NOVAK DRUCE + QUIGG LLP
525 Okeechobee Blvd., 15th Floor
West Palm Beach, FL 33401
Telephone: (561) 847-7800
Facsimile: (561) 847-7801

Attorney Docket No.: 9852-2

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of:	Matthew LENNOX	Confirmation No. 4496
Application No.	12/995,966	Examiner: Not yet assigned
Filing Date:	December 2, 2010	Group: Not yet assigned

For: ROOF AND WALL COVER SYSTEM

Mail Stop Petitions
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF CO-INVENTOR RODNEY BURGE IN SUPPORT OF THE PETITION UNDER 37 CFR 1.47(a)

I, RODNEY BURGE, the undersigned declarant, hereby declare the following:

1. I am a co-inventor of the above-identified application and director of the assignee Storm Holding (AUST) Pty Ltd.
2. This declaration is made in support of a petition to proceed without the signature of a co-inventor, because co-inventor, Matthew Lennox, whose last known address is 20 Carrington Ave., Caringbah NSW Z229 AUSTRALIA is either unavailable after our diligent effort to obtain his signature or has refused to sign the declaration.
3. It is necessary to proceed without Mr. Lennox's execution of the declaration because the application preserves the rights of the assignee, Storm Holdings (Aust) Pty Ltd. and was timely filed to claim priority from our Australian patent application.
4. A declaration of inventors by the available and cooperating co-inventors, Rodney Burge and Adam Farrow, has been filed.
5. Exhibit B is an instruction letter of February 18, 2011 sent to the Matthew Lennox at his then last known address 20 Carrington Ave., Caringbah NSW 2229 AUSTRALIA which

accompanied a complete copy of U.S. Patent Application 12/995,966 and a declaration for execution.

6. Exhibit C is a copy of an envelope evidencing the letter of Exhibit B and the accompanying materials was delivered and returned unclaimed on 31 March 2011, nearly six weeks later.
7. I am engaged in litigation with Mr Lennox. As part of settlement discussions in that litigation, I became aware of Mr Lennox' phone number, but not his current address.
8. I followed up with Mr. Lennox by telephone on January 11 2012. I told Mr Lennox that there were papers relating to the United States and other international patent applications that he needed to sign, that they had previously been sent to his former address, and asked if he would be able to sign and return the patent papers. I indicated that it was urgent that this be finalized. He told me to " F... off", and hung up, which I understood as indicating that he would not be signing the declaration.
9. I then sent a text message to Mr Lennox confirming his refusal to execute the declaration on January 11, 2012. The text message stated,

   "Hi Matthew Lennox,

   I confirm that I called you regarding the immediate signing of an international patent document and you refused and hung up on me. Regards Rodney Burge"
10. As of today, I have not received any communication or an executed Declaration from Mr. Lennox.
11. All statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statement and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and may jeopardize the validity of the application or any patent issuing thereon.

Date: 25/1/2012

RODNEY BURGE



StormHolding
(Aust) Pty Ltd

18th February 2010

Mr Matthew Lennox

Dear Mr Lennox,

We have proceeded to file a US patent application based upon the Australian application No 2008202416.

You will recall that you assigned all your rights in that invention to Case File Management Systems Pty Ltd (now Storm Holdings (Aust) Pty Ltd) by a written assignment dated 1 July 2008. In that assignment, you promised to 'execute all papers necessary in connection with any application...in Australia and or elsewhere.'

In relation to the US application, we request that you review and sign the enclosed combined Declaration and Power of Attorney. We enclose a copy of the patent application as filed, so that you can properly sign the document. We do not require any further assistance from you at this time.

If you have any questions, please call our patent attorney, Peter Franke, on 02 8071 5300 or you can contact me personally on 0406 646 662.

Sincerely,

Rodney Burge
Director.

Storm Holding (AUST) Pty Ltd
PO BOX 911
Southgate Sylvania NSW 2224

Ph: 1800 478 676
Fax: 02 9522 5498
Email: Admin@stormseal.com.au

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As the below named inventors, we hereby declare that:

Our residences, post office addresses and citizenships are as stated below next to our names;

We believe that we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ROOF AND WALL COVER SYSTEM

the specification of which: ☐ is attached hereto.
☒ was filed on: December 2, 2010
as Application No.: 12/995,966
and was amended on: _____ (if applicable).

We have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. We acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56.

And we hereby authorize and request our agents, Novak, Druce & Quigg LLP, whose address is set forth below, to insert above, the filing date and application number of said application when known.

Prior Foreign Application(s)

We hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Country	Application Number	Date of Filing (day, month, year)	Date of Issue (day, month, year)	Priority Claimed	
AU	2008202416	02/06/2008		Yes ☒	No ☐
AU	2008203409	30/07/2008		Yes ☒	No ☐
AU	2008101060	30/10/2008		Yes ☒	No ☐
AU	2009200232	22/01/2009		Yes ☒	No ☐

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

Prior Provisional Application(s)

We hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

Application Number	Date of Filing (day, month, year)

Prior United States Application(s)

We hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Number	Date of Filing (day, month, year)	Status - Patented, Pending, Abandoned
PCT/AU2009/000685	02/06/2009	Pending

And we hereby appoint, both jointly and severally, as our attorney(s)-in-fact with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith all practitioners associated with Customer Number 85936.

All correspondence and telephone communications should be addressed to Joseph W. Bain, Registration No. 34,290 at Customer Number 85936.

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. § 1001, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature _____ Date _____

Full Name of First Inventor:	LENNOX (Family Name)	Matthew (First Given Name)	(Second Given Name)
Citizenship:	Australia		
Residence:	Australia		
Post Office Address:	Unit 27 205/213 Port Hacking Road Miranda, NSW 2228 Australia		

Signature _____ Date _____

Full Name of Second Inventor:	BURGE (Family Name)	Rodney (First Given Name)	(Second Given Name)
Citizenship:	Australia		
Residence:	Australia		
Post Office Address:	Unit 27 205/213 Port Hacking Road Miranda, NSW 2228 Australia		

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

Signature _____ Date _____

Full Name of Third Inventor:	FARROW (Family Name)	Adam (First Given Name)	(Second Given Name)
Citizenship:	Australia		
Residence:	Australia		
Post Office Address:	Unit 27 205/213 Port Hacking Road Miranda, NSW 2228 Australia		

Novak, Druce & Quigg LLP
525 Okeechobee Blvd
15th Floor
West Palm Beach, FL 33401
Phone: 561-847-7800 Fax: 561-847-7801

Registered post
Registered Post
Sender's name: Ronen Kaye
Address: 27 / 205-213 Pacific Highway
Mirranda NSW 2228
Postcode 2228
Registered Post
RETURN TO SENDER
Insufficient Address
Left Address Unknown
Refused
Unclaimed
DATE 21/3
DO NOT PLACE THIS STICKER OVER CUSTOMER BARCODE OR ADDRESSEE'S NAME AND ADDRESS
Registered Post
Delivery within Australia
250g
Max weight
5mm
Max thickness
Prepaid envelope
AP Article Id:
50353749201S
Mt Matthew Lennox
20 Carrington Ave
Carlingford NSW
2229
Optional Services
Person to Person
Affix label here

Electronic Patent Application Fee Transmittal

Application Number:	12995966
Filing Date:	
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew LENNOX
Filer:	Joseph William Bain/JoAnn Evangelista
Attorney Docket Number:	9852-2

Filed as Large Entity

U.S. National Stage under 35 USC 371 Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 4 months with $0 paid	1254	1	1980	1980

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**1980**

Electronic Acknowledgement Receipt

EFS ID:	11915809
Application Number:	12995966
International Application Number:	
Confirmation Number:	4496
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew LENNOX
Customer Number:	85936
Filer:	Joseph William Bain
Filer Authorized By:	
Attorney Docket Number:	9852-2
Receipt Date:	25-JAN-2012
Filing Date:	
Time Stamp:	14:46:32
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1980
RAM confirmation Number	1204
Deposit Account	141437
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. 1.492 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	**Document Description**	**File Name**	**File Size(Bytes)/ Message Digest**	**Multi Part /.zip**	**Pages (if appl.)**
1	Petition for review by the Office of Petitions.	P0122314.PDF	1774661 a26c83fdf306f2fb803f81d6277ed1dafe6bb401	no	10
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30507 08fa71c64d86b6a774a846bb6569171be8264e59	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1805168		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

MAILED

APR 12 2012

PCT LEGAL ADMINISTRATION

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Joseph Bain
Novak Druce & Quigg LLP
525 Okeechobee Blvd
Suite 1500
West Palm Beach FL 33401

In re Application of:	:	
LENNOX, Matthew, et al.	:	DECISION ON RENEWED
U.S. Application No.: 12/995,966	:	PETITION UNDER
PCT No.: PCT/AU2009/000685	:	37 CFR 1.47(a)
International Filing Date: 02 June 2009	:	
Priority Date: 02 June 2008	:	
Attorney's Docket No.: 9852-2	:	
For: ROOF AND WALL COVER SYSTEM	:	

This decision is issued in response to applicants' "Renewed Petition Under 37 CFR 1.47(a)" filed on 25 January 2012. No additional petition fee is required.

BACKGROUND

The procedural background for the present application was set forth in the decision mailed on 25 July 2011. The decision dismissed without prejudice applicants' petition under 37 CFR 1.47(a), finding that applicants had not satisfied all the requirements of a grantable petition. Specifically, applicants had not provided an acceptable showing that the non-signing inventor has refused to execute the application or cannot be located after diligent effort.

On 25 January 2012, applicants filed the renewed petition considered herein (with required four-month extension fee).

DISCUSSION

The present renewed petition is accompanied by a statement from Rodney Burge, with supporting documents, providing a firsthand showing of the efforts made to obtain the signature of the non-signing inventor. The statement confirms that a signature request accompanied by a copy of the complete application was forwarded to the inventor's last-known address and returned unclaimed. The statement also indicates that, although the applicants have not identified a more current address for the inventor, applicants have identified the inventor's telephone number. The statement indicates that Mr. Burge called the inventor on the telephone, told him of the signature request mailed to his last-known address, and asked if he would be able to sign and return the patent papers, and that the inventor responded with an obscenity and hung up. These materials provide an acceptable showing that the non-signing inventor has refused to execute the application.

In view of the above, applicants have now satisfied the final outstanding requirement of a grantable petition under 37 CFR 1.47(a).

CONCLUSION

Applicants' renewed petition under 37 CFR 1.47(a) is **GRANTED**.

The application is accepted without the signature of non-signing co-inventor Matthew LENNOX.

A notice of the acceptance of the application will be published in the Official Gazette, and a letter informing the non-signing inventor of the application will be forwarded to the inventor's last-known address, as set forth in the petition.

The application is being referred to the National Stage Processing Branch of the Office of PCT Operations for further processing in accordance with this decision. The date under 35 U.S.C. 371(c)(1), (c)(2), and (c)(4) is 31 May 2011.

/RichardMRoss/

Richard M. Ross
Attorney Advisor
Office of PCT Legal Administration
Telephone: (571) 272-3296

MAILED

APR 12 2012

PCT LEGAL ADMINISTRATION

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Matthew LENNOX
20 Carrington Ave.
Caringbah NSW Z229
AUSTRALIA

In re Application of: LENNOX, Matthew, et al.
U.S. Application No.: 12/995,966
PCT No.: PCT/AU2009/000685
International Filing Date: 02 June 2009
Priority Date: 02 June 2008
Attorney's Docket No.: 9852-2
For: ROOF AND WALL COVER SYSTEM

Dear Mr. LENNOX:

You are identified as an inventor in the above identified United States patent application, filed under the provisions of 37 CFR 1.47(a) and 35 U.S.C. 116. Should a patent be granted, you will be designated as an inventor.

As a named inventor, you are entitled to inspect any paper in the file wrapper of the application, order copies of all or any part thereof (at a prepaid cost per 37 CFR 1.19) or to make your position of record in the application. Alternatively, you may arrange to do any of the preceding through a registered patent agent or attorney presenting written authorization from you. If you care to join the application, counsel of record (see below) would presumably assist you. Joining in the application would entail the filing of an appropriate oath or declaration by you pursuant to 37 CFR 1.63.

/RichardMRoss/

Richard M. Ross
Attorney Advisor
Office of PCT Legal Administration
Telephone: (571) 272-3296

Counsel Of Record:
Joseph Bain
Novak Druce & Quigg LLP
525 Okeechobee Blvd
Suite 1500
West Palm Beach FL 33401

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
12/995,966	Matthew Lennox	9852-2

85936
Joseph Bain
Novak Druce & Quigg LLP
525 Okeechobee Blvd
Suite 1500
West Palm Beach, FL 33401

INTERNATIONAL APPLICATION NO.	
PCT/AU09/00685	
I.A. FILING DATE	PRIORITY DATE
06/02/2009	06/02/2008

CONFIRMATION NO. 4496
371 ACCEPTANCE LETTER



Date Mailed: 04/19/2012

NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495

The applicant is hereby advised that the United States Patent and Trademark Office in its capacity as a Designated / Elected Office (37 CFR 1.495), has determined that the above identified international application has met the requirements of 35 U.S.C. 371, and is ACCEPTED for national patentability examination in the United States Patent and Trademark Office.

The United States Application Number assigned to the application is shown above and the relevant dates are:

05/31/2011	05/31/2011
DATE OF RECEIPT OF 35 U.S.C. 371(c)(1), (c)(2) and (c)(4) REQUIREMENTS	DATE OF COMPLETION OF ALL 35 U.S.C. 371 REQUIREMENTS

A Filing Receipt (PTO-103X) will be issued for the present application in due course. **THE DATE APPEARING ON THE FILING RECEIPT AS THE " FILING DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1), (c)(2) and (c)(4) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN ABOVE.** *The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363).* Once the Filing Receipt has been received, send all correspondence to the Group Art Unit designated thereon.

The following items have been received:

- Copy of the International Application filed on 12/02/2010
- Copy of the International Search Report filed on 12/02/2010
- Preliminary Amendments filed on 12/02/2010
- Oath or Declaration filed on 05/31/2011
- U.S. Basic National Fees filed on 12/02/2010
- Priority Documents filed on 12/02/2010

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

NADINE V CLARK

Telephone: (571) 272-8687

FORM PCT/DO/EO/903 (371 Acceptance Notice)

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/995,966	05/31/2011		1110	9852-2	12	2

CONFIRMATION NO. 4496

85936
Joseph Bain
Novak Druce & Quigg LLP
525 Okeechobee Blvd
Suite 1500
West Palm Beach, FL 33401

FILING RECEIPT

OC000000053748300

Date Mailed: 04/19/2012

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Matthew Lennox, Miranda, AUSTRALIA;
Rodney Burge, Miranda, AUSTRALIA;
Adam Farrow, Miranda, AUSTRALIA;

Assignment For Published Patent Application

STORM HOLDINGS (AUST) PTY LTD., Miranda, NSW, AU

Power of Attorney: The patent practitioners associated with Customer Number 85936

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/AU09/00685 06/02/2009

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
AUSTRALIA 2008202416 06/02/2008
AUSTRALIA 2008203409 07/30/2008
AUSTRALIA 2008101060 10/30/2008
AUSTRALIA 2009200232 01/22/2009

If Required, Foreign Filing License Granted: 04/16/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/995,966**

Projected Publication Date: 07/26/2012

Non-Publication Request: No

Early Publication Request: No

Title

ROOF AND WALL COVER SYSTEM

Preliminary Class

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 12/995,966

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	380
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	490
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	250
TOTAL CLAIMS (37 CFR 1.16(i))	12 minus 20 =	*			OR	x 60 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*				x 250 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1120

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/995,966	05/31/2011	Matthew Lennox	9852-2

CONFIRMATION NO. 4496

PUBLICATION NOTICE

85936
Joseph Bain
Novak Druce & Quigg LLP
525 Okeechobee Blvd
Suite 1500
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OC00000055605970

Title:ROOF AND WALL COVER SYSTEM

Publication No.US-2012-0186722-A1
Publication Date:07/26/2012

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/995,966	05/31/2011	Matthew Lennox	9852-2	4496

85936 7590 10/05/2012

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EXAMINER	
GROSS, CARSON	

ART UNIT	PAPER NUMBER
1746	

NOTIFICATION DATE	DELIVERY MODE
10/05/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

joseph.bain@novakdruce.com
WPBDOCKET@novakdruce.com

Office Action Summary	Application No.	Applicant(s)	
	12/995,966	LENNOX ET AL.	
	Examiner	Art Unit	
	CARSON GROSS	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *30-41* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *30-41* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *02 December 2010* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/09/2011*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: certain numbers are used to refer to multiple parts. For example, on page 14, "a building" and “tiles” are both designated by the number 12. Similarly, on page 15, "the film" and a "batten" are both designated by the number 18. The specification should be amended to remove any inconsistencies with the numbering of parts. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 30-33 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crook (US 2005/0217202).

6. Crook teaches a method of covering a roof structure (See Abstract), the method comprising: selecting a roll (37,520) of heat shrinkable film, commonly called “shrink wrap” (See [0034], [0041]); cutting a required number of strips (33,35,233,235,270,272), referred to by the applicant as “lengths," from the roll (See [0029], [0030], [0049], [0050]); positioning the strips over the roof structure by attaching a leading edge of a strip to a first edge of the roof structure and attaching a trailing edge of the strip to a second edge of the roof structure which is opposite the first edge (See Figure 1; [0065]); applying multiple strips to the roof structure such that they are assembled into a sheet (100,200,250,300) of heat shrinkable film (See Figures 1, 2A, 2B; [0026], [0029], [0030]); affixing said sheet by mechanical means (See [0066]); and using a heat gun to apply heat to the sheet of heat shrinkable film such that shrinking occurs and a tight fit between the sheet and the roof structure is achieved (See [0065]). The method further comprises providing ventilation openings in the sheet to allow communication between air volumes above and below the sheet (See [0035]). Crook teaches that overlapping

areas of the strips can be joined with tape (See [0066]). The specific embodiments described by Crook involve a completed roof structure, but Crook also explicitly states that the disclosed method may be used for providing protection during roof repairs (See [0072]). It is the examiner's position that one of ordinary skill in the art would understand that during such repairs, it is common for an opening in the roof structure to be present, such openings often being caused by high winds or impact in storms, as taught by Crook (See [0001]).

7. Crook teaches that the strips are positioned over roof structure and assembled into a sheet as they are positioned. Crook does not expressly disclose assembling strips into a sheet and then positioning the assembled sheet over the roof structure. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to assemble the sheet first and then apply it to the roof structure, since it has been held that the selection of reversing the steps of a prior art process is *prima facie* obvious. The selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. In the instant case, both sequences of steps provide an assembled sheet covering on a roof structure, and no new or unexpected results are achieved.

8. Claims 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crook (US 2005/0217202) as applied to claims 30-33 and 36 above, and further in view of Lachapelle (US 6,425,213).

9. Crook teaches a method of covering a roof structure, as detailed above. Crook does not expressly disclose the horizontal application of the strips of heat shrinkable film to the sides of a building.

10. Lachapelle discloses a protective film (20), which can be provided as roofing strips (41,42,43) on a roof structure and as horizontal strips (31,32,33) on the sides of a building (See Figure 3). The protective film may be formed of polyethylene (See col. 6, lines 67-61).

11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a protective layer on both the roof of a building and the sides of a building. The rationale to do so would have been the motivation provided by the desire to protect the building from damage. It would have been obvious to one of ordinary skill in the art at the time the invention was made that all portions of a building can be damaged by a storm and that protection is desirable for an entire building when potentially harmful storm conditions exist.

12. Regarding claim 38, Lachapelle states that one advantage of the claimed method is the ability to use a building while the protective layer is on its exterior (See col. 1, lines 33-35 and 53-67; col. 2, lines 1-2). In order for a building to be usable, the doors, windows, and other openings must be operational. It is therefore the examiner's position that cutting the protective layer along these openings would have been obvious to one of ordinary skill in the art at the time the invention was made based on the teachings of Lachapelle.

13. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crook (US 2005/0217202) and Lachapelle (US 6,425,213) as applied to claims 37-41 above, and further in view of Blestos (US 2008/0060302).

14. Crook and Lachapelle combine to teach a method for covering a building with a weather-resistant protective layer, the protective layer being present on the roof and sides of a building, as detailed above. Crook and Lachapelle do not expressly disclose a protective layer comprising a heat reflective surface, the protective layer being applied to unclad roof framing of a building under construction.

15. Blestos discloses materials which are useful for forming house wraps and roof linings on buildings under construction (See Abstract). Such materials include composites which serve to reflect heat (See [0048]). These materials can be used under roof cladding (See Figure 4A, [0059]).

16. It would have been obvious for one of ordinary skill in the art at the time the invention was made to use the reflective material of Blestos in the method taught by Crook and Lachapelle. The rationale to do so would have been the motivation provided by the teaching of Blestos that the inclusion of such a reflective material in a roof lining creates a thermal barrier which reduces energy loss (See [0048]) and provides protection from electromagnetic frequency radiation (See [0062]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CARSON GROSS whose telephone number is (571)270-7657. The examiner can normally be reached on Mon-Fri 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katarzyna Wyrozebski can be reached on (571)272-1127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CARSON GROSS/
Examiner, Art Unit 1746

/KHANH P. NGUYEN/
for Katarzyna I. Wyrozebsky, SPE of Art Unit 1746

Notice of References Cited	Application/Control No. 12/995,966	Applicant(s)/Patent Under Reexamination LENNOX ET AL.	
	Examiner CARSON GROSS	Art Unit 1746	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,425,213 B1	07-2002	Lachapelle, Gilles	52/169.14
*	B	US-2005/0217202 A1	10-2005	Crook, Michael L.	052/782.1
*	C	US-2008/0060302 A1	03-2008	Bletsos et al.	052/408
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12995966	LENNOX ET AL.
	Examiner	Art Unit
	CARSON GROSS	1746

SEARCHED

Class	Subclass	Date	Examiner
	Keyword Search	09/27/2012	CAG

SEARCH NOTES

Search Notes	Date	Examiner
Inventor Search	09/27/2012	CAG
Reviewed International Search Report	09/27/2012	CAG

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

/CARSON GROSS/ Examiner.Art Unit 1746	

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BIB DATA SHEET

CONFIRMATION NO. 4496

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/995,966	05/31/2011 RULE	156	1746	9852-2

APPLICANTS

Matthew Lennox, Miranda, AUSTRALIA;
Rodney Burge, Miranda, AUSTRALIA;
Adam Farrow, Miranda, AUSTRALIA;

**** CONTINUING DATA ***************************

This application is a 371 of PCT/AU09/00685 06/02/2009

**** FOREIGN APPLICATIONS ***************************

AUSTRALIA 2008202416 06/02/2008
AUSTRALIA 2008203409 07/30/2008
AUSTRALIA 2008101060 10/30/2008
AUSTRALIA 2009200232 01/22/2009

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

04/16/2012

Foreign Priority claimed	35 USC 119(a-d) conditions met	Verified and Acknowledged	Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
☑ Yes ☐ No	☑ Yes ☐ No	/CARSON GROSS/ Examiner's Signature	☐ Initials	AUSTRALIA	7	12	2

ADDRESS

Joseph Bain
Novak Druce & Quigg LLP
525 Okeechobee Blvd
Suite 1500
West Palm Beach, FL 33401
UNITED STATES

TITLE

ROOF AND WALL COVER SYSTEM

FILING FEE RECEIVED		
1110	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	7	("4769962" | "4818588" | "6632496" | "6797218" | "20050217202" | "20080060302" | "20080022620").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/26 19:02
S2	1	("20120186722").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/26 19:50
S3	10	("20020095898" | "5092099" | "5608992" | "5791090" | "6122889" | "6256956" | "6363681" | "6425213" | "6742305" | "6810626").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/26 20:01
S4	1	("4691427").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/27 14:39
S5	7	("4769962" | "4818588" | "6632496" | "6797218" | "20050217202" | "20080060302" | "20080022620").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S6	1	("20120186722").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/27 14:42
S7	10	("20020095898" | "5092099" | "5608992" | "5791090" | "6122889" | "6256956" | "6363681" | "6425213" | "6742305" | "6810626").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S8	19	S5 or S6 or S7 or S4	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S9	5	S8 and (heat$4 near shrink$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S10	19	("3715843" | "4019304" | "4315535" | "4321774" | "4458456" | "4488386" | "4693042" | "5040919" | "5079088" | "5190089" | "5865564" | "6029405" | "6122887" | "6122889" | "6224700").PN. OR ("6425213").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:51
S11	3	S8 and (shrink wrap)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 15:41
S12	69359	(roof$4 with (house or home or structure or building))	US-PGPUB; USPAT;	ADJ	ON	2012/09/27 16:04

			USOCR			
S13	252700	((temporary or protect$5) near2 (cover or membrane or film or liner))	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:04
S14	91141	(damag$4 with (weather or rain$4 or storm$4 or wind or water or flood$4 or hurricane or tornado))	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:05
S15	45100	(heat shrink$4) or (shrink wrap$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:06
S16	9	(S12 and S13 and S14 and S15)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:06
S17	3441394	(weather or rain$4 or storm$4 or wind or water or flood$4 or hurricane or tornado)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:08
S18	61	(S12 and S13 and S17 and S15)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:08
S19	162312	((temporary or protect$5) near2 (cover or membrane or film or liner))	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:08
S20	71060	(roof$4 with (house or home or structure or building))	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:08
S21	29158	(heat shrink$4) or (shrink wrap$4)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:09
S22	3790908	(weather or rain$4 or storm$4 or wind or water or flood$4 or hurricane or tornado)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:09
S23	2	S19 and S20 and S21 and S22	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:09
S24	8	(US-20050217202-$ or US-20120186722-$ or US-20080022620-$ or US-20020095898-$).did. or (US-4691427-$ or US-4769962-$ or US-6122889-$ or US-6425213-$).did.	US-PGPUB; USPAT	ADJ	ON	2012/09/27 16:11
S25	1	S24 and reflect$4	US-PGPUB; USPAT	ADJ	ON	2012/09/27 16:11
S26	595846	((frame or construction) with (house or home or structure or building))	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:18
S27	286	S26 and S13 and S15 and S17	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:19
S28	53	S27 and roof	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:19
S29	6	S27 and (reflect$4 near2 heat)	US-PGPUB;	ADJ	ON	2012/09/27 16:20

			USPAT; USOCR			
S30	302281	((frame or construction) with (house or home or structure or building))	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:21
S31	2	S19 and S21 and S22 and S30	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:21
S32	76	S18 or S28	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:22
S33	21077	S26 and S13	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:24
S34	135	S33 and roof$4 and (heat near2 reflect$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:25
S35	530	S19 and (S20 or S30) and S22	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:26
S36	222	S35 and roof	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:27
S37	252	S35 and roof$4	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:27
S38	262	(house wrap) or housewrap	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S39	42	S38 and roof	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S40	0	S38 and roof and (heat near reflect$4)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S41	0	S38 and (heat near reflect$4)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S42	851	(house wrap) or housewrap	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:36
S43	265	S42 and roof	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 17:03
S44	429	S42 and (weather or rain$4 or storm$4 or wind or flood$4 or hurricane or tornado)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 17:04
S45	198	S43 and S44	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 17:04
S46	10	(US-20050217202-$ or US-20120186722-$ or US-20080022620-$ or US-20020095898-$ or US-20050103375-$ or US-20080060302-$).did. or (US-4691427-$ or US-4769962-$ or US-6122889-$ or US-6425213-$).did.	US-PGPUB; USPAT	ADJ	ON	2012/09/27 17:05
S47	2	S42 and S46	US-PGPUB;	ADJ	ON	2012/09/27 17:05

			USPAT			
S48	1	("4315535").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/27 19:24

EAST Search History (Interference)

< This search history is empty>

9/27/2012 8:09:54 PM
C:\Users\cgross1\Documents\EAST\Workspaces\12995966.wsp

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12995966
Filing Date	2010-12-02
First Named Inventor	LENNOX, Matthew
Art Unit	
Examiner Name	Not Yet Assigned
Attorney Docket Number	9852-2

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	4769962		1988-09-13	POHL, Ronald R.	
	2	6797218		2004-09-28	BICKERSTAFF, Othell	
	3	4818588		1989-04-04	OKABE, Mitsuo	
	4	6632496		2003-10-14	JOHNSON, Michael R.C.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050217202		2005-10-06	CROOK, Michael L.	
	2	20080060302		2008-03-13	BLETSOS, Ioannis V.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.G./

Receipt date: 02/09/2011	Application Number	12995966	12995966 - GAU: 1746
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2010-12-02	
	First Named Inventor	LENNOX, Matthew	
	Art Unit		
	Examiner Name	Not Yet Assigned	
	Attorney Docket Number	9852-2	

	3	20080022620		2008-01-31	CROWLEY, Shawn	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	199466002	AU		1994-10-06	SMITH, Michael Frederick		☐
	2	2008202416	AU		2008-09-18	FARROW, Adam		☐
	3	2388815	GB		2003-11-26	AVRIL, David		☐
	4	2376206	GB		2002-12-11	WAIGHT, Stephen		☐
	5	0410275	EP		1991-01-30	GOTTLIEB, Ernest		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Written Opinion of the International Searching Authority, completed October 8, 2010 by the Australian Patent Office, for International Application PCT/AU2010/001026.	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.G./

Receipt date: 02/09/2011	Application Number	12995966	12995966 - GAU: 1746
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)	Filing Date	2010-12-02	
	First Named Inventor	LENNOX, Matthew	
	Art Unit		
	Examiner Name	Not Yet Assigned	
	Attorney Docket Number	9852-2	

	2	English language translation of the Abstract of European Patent Application No. 0410275.	☐
	3	International Search Report of the International Searching Authority, completed October 8, 2010 by the Australian Patent Office, for International Application PCT/AU2010/001026.	☐
	4	International Search Report of the International Searching Authority, completed July 20, 2009 by the Australian Patent Office, for International Application PCT/AU2009/000685.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/Carson Gross/	Date Considered	09/27/2012

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.G./

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/995,966	05/31/2011	Matthew Lennox	9852-2	4496

85936 7590 04/11/2013

Joseph Bain
Novak Druce & Quigg LLP
525 Okeechobee Blvd
Suite 1500
West Palm Beach, FL 33401

EXAMINER	
GROSS, CARSON	

ART UNIT	PAPER NUMBER
1746	

NOTIFICATION DATE	DELIVERY MODE
04/11/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

joseph.bain@novakdruce.com
WPBDOCKET@novakdruce.com

Notice of Abandonment	Application No.	Applicant(s)
	12/995,966	LENNOX ET AL.
	Examiner	Art Unit
	CARSON GROSS	1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on *05 October 2012*.
   (a) ☐ A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
   (b) ☐ A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection.
   (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
   (c) ☐ A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
   (d) ☒ No reply has been received.

2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
   (a) ☐ The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
   (b) ☐ The submitted fee of $_____ is insufficient. A balance of $_____ is due.
   The issue fee required by 37 CFR 1.18 is $_____. The publication fee, if required by 37 CFR 1.18(d), is $_____.
   (c) ☐ The issue fee and publication fee, if applicable, has not been received.

3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
   (a) ☐ Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
   (b) ☐ No corrected drawings have been received.

4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.

5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.

6. ☐ The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. ☒ The reason(s) below:

On 04/08/2013 Joseph Bain informed the examiner that no reply has been sent.

/KAT WYROZEBSKI/ Supervisory Patent Examiner, Art Unit 1746	/CARSON GROSS/ Examiner, Art Unit 1746

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

Doc Code: PET.OP
Document Description: Petition for Review by the Office of Petitions

PTO/SB/64 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(b)

Docket Number (Optional): DUMME111.001APC

First named inventor: Matthew Lennox

Application No.: 12/995,966 Art Unit: 1746

Filed: May 31, 2011 Examiner: Gross, Carson

Title: ROOF AND WALL COVER SYSTEM

Attention: Office of Petitions
Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
FAX (571) 273-8300

NOTE: If information or assistance is needed in completing this form, please contact Petitions Information at (571) 272-3282.

The above-identified application became abandoned for failure to file a timely and proper reply to a notice or action by the United States Patent and Trademark Office. The date of abandonment is the day after the expiration date of the period set for reply in the office notice or action plus any extensions of time actually obtained.

APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION

NOTE: A grantable petition requires the following items:
(1) Petition fee;
(2) Reply and/or issue fee;
(3) Terminal disclaimer with disclaimer fee - required for all utility and plant applications filed before June 8, 1995; and for all design applications; and
(4) Statement that the entire delay was unintentional

1. Petition Fee

☑ Small entity-fee $ 850 (37 CFR 1.17(m)). Application claims small entity status. See 37 CFR 1.27.

☐ Other than small entity-fee $ _____ (37 CFR 1.17(m))

2. Reply and/or fee

A. The reply and/or fee to the above-noted Office action in the form of Office Action Response (identify type of reply):

☐ has been filed previously on _____.

☑ is enclosed herewith.

B. The issue fee and publication fee (if applicable) of $_____.

☐ has been paid previously on _____.

☐ is enclosed herewith.

This collection of information is required by 37 CFR 1.137(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

3. Terminal disclaimer with disclaimer fee

☑ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.

☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of $_____for a small entity or $_____ for other than a small entity) disclaiming the required period of time is enclosed herewith (see PTO/SB/63).

4. STATEMENT: The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOTE: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D)).]

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

/Michael Trenholm/	11/18/2016
Signature	Date
Michael H. Trenholm	37,743
Type or Printed name	Registration Number, If applicable
2595 East Bayshore Road	(650) 752-1100
Address	Telephone Number
Suite 200	
Address	

Enclosures:

☑ Fee Payment

☑ Reply

☐ Terminal Disclaimer Form

☐ Additional sheets containing statements establishing unintentional delay

☐ Other: _____

CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]

I hereby certify that this correspondence is being:

☐ Deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

☐ Transmitted by facsimile on the date shown below to the United States Patent and Trademark Office at (571) 273-8300.

Date	Signature
	Typed or printed name of person signing certificate

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor	:	Matthew Lennox
App. No.	:	12/995,966
Filed	:	May 31, 2011
For	:	ROOF AND WALL COVER SYSTEM
Examiner	:	Gross, Carson
Art Unit	:	1746
Conf. No.	:	4496

Amendment

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action dated October 5, 2012, please amend the above-captioned application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 3 of this paper.

Remarks/Arguments begin on page 5 of this paper.

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

[0091] With reference to FIG 1, typical damage to a tiled roof 10 of a building [12] 14 may include the loss of a number of tiles [12] due to a high wind shear event, leaving the building 14 open to the ingress of water. Water ingress may also occur if the tiles are cracked for example from heavy hail impact or falling trees or branches. Emergency temporary repair is provided by the roof cover system of the invention by applying the above described film over that portion of the roof which has sustained damage.

[0093] The extend of roof to be covered is measured and the most suitable available width roll of the heat shrinkable film selected. Film is cut to one or more lengths sufficient to extend from one edge of the roof to an opposite edge. With reference to FIG. 2, a trailing edge of a length of film is mechanically attached to the first edge 16 of the roof 10. In one preferred method as shown in FIG. 2, the trailing edge 15 of the film 18 is wrapped once around a length of batten [18] 20 preferably as long as the width of the film, and the batten 20 mechanically fixed to the underside 22 of the eaves 24 at the first edge of the roof.

[0117] With the timer stud structure 5 of FIG. 8 the building wrap is applied directly over the studs 6 in horizontal bands 190mm wide in a similar fashion to FIG. 1. While only the lower band 7 is shown adjacent the bottom plate 8 subsequent bands are applied as described earlier in overlapping fashion up to the top late 9. Heat is then applied to the perimeter corners [10] 11 and top and bottom plate areas to shrink the film to seal against itself along taped overlapping joints and also against the structure.

AMENDMENTS TO THE CLAIMS

1-29 (Cancelled)

30. (Currently Amended) A method of covering an opening in a roof structure to protect from water ingress, said method comprising the steps of: (a) selecting a roll of heat shrinkable film; (b) cutting a required number of lengths of said film from said roll; said lengths being sufficient to extend from an edge of said opening to an opposite edge of said opening; (c) assembling said lengths of heat shrinkable film into a sheet of material; (d) positioning said sheet of material over said opening; (e) affixing said sheet by mechanical means; and (f) applying heat to said sheet so as to produce heat shrinkage and, wherein said heat shrinkable film form a permanent sarking layer beneath roof cladding.

31. (Previously Presented) The method of claim 30 wherein said method comprises the further steps of: (a) cutting at least one aperture into said sheet of material, (b) affixing a vent over said aperture so as to allow communication between air volumes above and below said sheet of material.

32. (Previously Presented) The method of claim 30 wherein said method comprises the further steps of: (a) attaching a trailing end of said sheet at an edge of said roof structure, (b) taking a leading edge of said sheet to said opposite edge, (c) attaching said leading edge of said sheet at said opposite edge, (d) applying heat with a heat gun to said sheet of heat shrinkable film.

33. (Previously Presented) The method of claim 30 wherein said roof structure comprises an existing roof damaged through wind shear or impact.

34. (Previously Presented) The method of claim 30 wherein said roof structure comprises unclad roof framing of a building under construction.

35. (Previously Presented) The method of claim 34 wherein said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

36. (Previously Presented) A method of protecting a roof structure from water ingress; said method comprising the steps of: (a) selecting a roll of heat shrinkable film of suitable width, (b) cutting a length of said film from said roll sufficient to extend from one edge of said roof structure to an opposite edge, (c) attaching a trailing end of said length at an edge of said roof structure, (d) taking a leading edge of said length to said opposite edge, (e) attaching said leading end of said length at said opposite edge, (f) applying heat to said length of heat shrinkable film so as to produce heat shrinkage and, wherein said heat shrinkable film may form a permanent sarking layer beneath roof cladding.

37. (Currently Amended) A method of applying a moisture proof building wrap to a structure; said method comprising the steps of: (a) providing a roll of heat shrinkable plastic film, (b) attaching a free edge of said film to an inside perimeter edge of said structure and disposing an opposite leading edge of said film horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands of said film for fixing thereto, (c) applying heat to said bands to shrink said film tight against said structure and, wherein said heat shrinkable film form a permanent sarking layer beneath roof cladding.

38. (Previously Presented) The method as claimed in claim 37 and comprising the further step of cutting the film to accommodate doors, windows and other penetrations.

39. (Previously Presented) The method as claimed in claim 37 wherein a plurality of bands of said film with taped overlapping joints are formed on said structure.

40. (Previously Presented) The method as claimed in claim 37 wherein said heat is applied to the perimeter corners and top and bottom plate areas of said structure.

41. (Previously Presented) The method as claimed in claim 37 wherein said building wrap is a heat shrinkable polyethylene film.

AMENDMENTS TO THE DRAWINGS

By this paper, the Applicant is submitting a proposed drawing amendment for the Examiner's approval. In Figure 9, the reference numeral 10 has been replaced by the numeral 11 as 10 had been used previously in the disclosure for a different element. The specification has also been accordingly amended.

REMARKS

In the Office Action dated October 5, 2012, the Examiner objected to the specification due to informalities and rejected the pending claims under 35 U.S.C. §103 as being unpatentable over the Crook reference (US 2005/0217202), the Lachapelle reference (US 6,425,213), the Blestos reference (US 2008/0060302), or some combination thereof. By this paper, the Applicant has amended the claims to highlight the subject matter that the Applicant believes is allowable over the art of record. Hence, reconsideration of the above-captioned application in light of the amendments and remarks contained herein is now respectfully requested.

After carefully reviewing the cited art, the Applicant notes that none of the cited references teach or disclose "A method of covering an opening in a roof structure to protect from water ingress, said method comprising the steps of: (a) selecting a roll of heat shrinkable film; (b) cutting a required number of lengths of said film from said roll; said lengths being sufficient to extend from an edge of said opening to an opposite edge of said opening; (c) assembling said lengths of heat shrinkable film into a sheet of material; (d) positioning said sheet of material over said opening; (e) affixing said sheet by mechanical means; and (f) applying heat to said sheet so as to produce heat shrinkage and, wherein said heat shrinkable film form a permanent sarking layer beneath roof cladding" (*See, e.g.,* Claim 1 as amended). Antecedent support for this amendment can be found in at least Paragraph 0111 of the application as published.

Crook, Lachapelle and Blestos fail to teach the heat shrinkable film being used for permanent sarking. Crook is placing it's material on the outside of a roof to prevent damage during storms and thus is not under the roof cladding and doesn't function as sarking. Lachapelle and Blestos also fail to teach these features.

For these reasons, the Applicant believes that Claim 30 as amended is allowable over the art of record. The Applicant further believes that Claim 37 defines additional patentable subject matter and is further allowable for reasons similar to the reasons given above in connection with Claim 30. The Applicant further submits that the remaining claims define additional patentable subject matter and are further allowable due to their respective dependencies on Claims 30 and 37. The Applicant therefore believes that the above-captioned application is in condition for allowance and requests the prompt allowance of the same. Should there be any impediment to

the prompt allowance of this application that could be resolved by a telephone conference, the Examiner is respectfully requested to call the undersigned at the number shown below.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: November 18, 2016

By:/Michael Trenholm/
Michael H. Trenholm
Registration No. 37,743
Attorney of Record
Customer No. 20995
(650) 752-1100

24665503

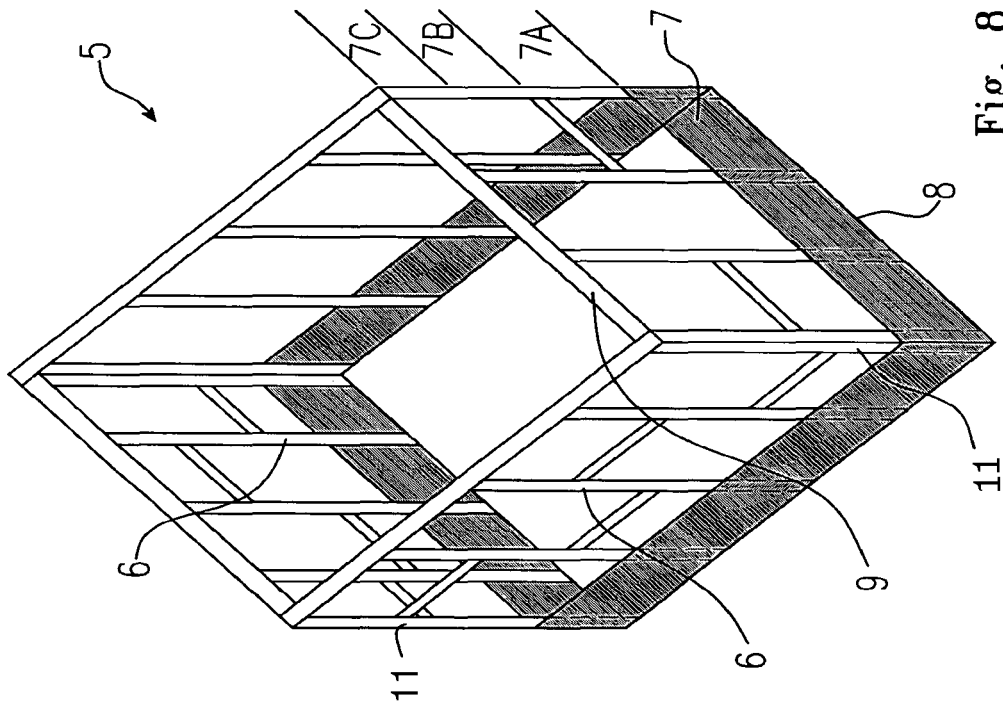


Fig. 8

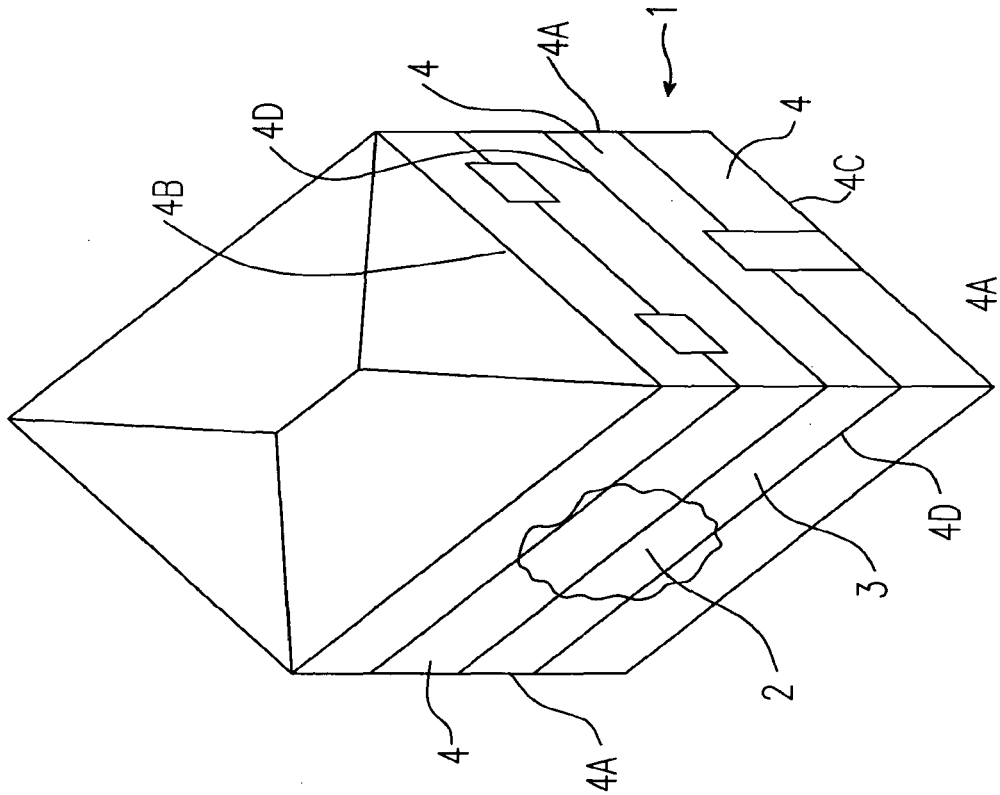


Fig. 7

Structural Wrap Exhibit 1014, Page 417
Structural Wrap v Stormseal, IPR2024-00084

Electronic Patent Application Fee Transmittal

Application Number:	12995966
Filing Date:	31-May-2011
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew Lennox
Filer:	Michael H. Trenholm/Debbie Fonseca
Attorney Docket Number:	9852-2

Filed as Small Entity

Filing Fees for U.S. National Stage under 35 USC 371

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
PET. REVIVE ABANDON APP, DELAY PYMT-RESP	2453	1	850	850
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**850**

Electronic Acknowledgement Receipt

EFS ID:	27562393
Application Number:	12995966
International Application Number:	
Confirmation Number:	4496
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew Lennox
Customer Number:	85936
Filer:	Michael H. Trenholm/Imran Ahmed
Filer Authorized By:	Michael H. Trenholm
Attorney Docket Number:	9852-2
Receipt Date:	18-NOV-2016
Filing Date:	31-MAY-2011
Time Stamp:	18:51:54
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$850
RAM confirmation Number	112116INTEFSW18525000
Deposit Account	111410
Authorized User	Imran Ahmed

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.492 (National application filing, search, and examination fees)

37 CFR 1.492(a) (Basic national fee only)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition for review by the Office of Petitions	DUMME111_001APC-Petition.pdf	205257 15a562182d9cb19e5e19238178ed21e60ad42350	no	3
Warnings:					
Information:					
2		DUMME111_001APC-OAR.pdf	43420 fc557442ec07f46e5fbaa1e9b7d10be44683c28a	yes	7

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Specification	2	2
Claims	3	4
Drawings-only black and white line drawings	5	5
Applicant Arguments/Remarks Made in an Amendment	6	7

Warnings:					
Information:					
3	Drawings-only black and white line drawings	DUMME111_001APC-ReplaceDwg.pdf	57923 1e95b61e20bef397305a4c8dcc42558033c1076c	no	1
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30704 71e894d92352da608e075187bf8d7b56473c6cda	no	2
Warnings:					
Information:					

Total Files Size (in bytes):	337304

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/995,966	Filing Date 05/31/2011	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **11/18/2016**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

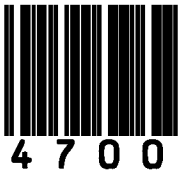
	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SLIE
SHARONE MOORE

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Office of Petitions: Routing Sheet



Application No. 12995966

This application is being forwarded to your office for further processing. A decision has been rendered on a petition filed in this application, as indicated below. For details of this decision, please see the document PET.OP.DEC filed on the same date as this document.

- [X] **GRANTED**
- [ ] **DISMISSED**
- [ ] **DENIED**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/995,966	05/31/2011	Matthew Lennox	9852-2	4496

85936 7590 03/28/2017

Joseph Bain
Shutts & Bowen LLP
525 Okeechobee Blvd
Suite 1100
West Palm Beach, FL 33401

EXAMINER
GROSS, CARSON

ART UNIT	PAPER NUMBER
1746	

NOTIFICATION DATE	DELIVERY MODE
03/28/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

WPBDOCKET@novakdruce.com
jbain@shutts.com
ptomail@shutts.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

In re Application of	:	
Lennox, et al.	:	
Application No. 12/995,966	:	DECISION ON PETITION
Filed: May 31, 2011	:	
Attorney Docket No. 9852-2	:	

This is a decision on the petition under 37 CFR 1.137(b), filed November 18, 2016, which is being treated as a petition under 37 CFR 1.137(a), to revive the above-identified application.

There is no indication that petitioner was ever empowered to prosecute the instant application. However, in accordance with 37 CFR 1.34(a), the signature of Michael H.Trenholm appearing on the petition shall constitute a representation to the United States Patent and Trademark Office that he is authorized to represent the particular party on whose behalf he acts. The address in the petition is different from the correspondence address of record. While a courtesy copy of the decision is being mailed to the person signing the petition, all future correspondence will be directed to the address currently of record until appropriate instructions are received. A change of correspondence address should be filed if the correspondence address needs to be changed.

The petition is **GRANTED.**

The above-identified application became abandoned for failure to timely file a reply in response to the Non-Final Office action mailed October 5, 2012. This Office action set a shortened statutory period for reply of three months. No reply having been received, the application became abandoned by operation of law on January 6, 2013. The Office mailed a Notice of Abandonment on April 11, 2013.

The petition satisfies the requirements of 37 CFR 1.137(a) in that the petitioner has supplied (1) a response in the form of an amendment in response to the office action; (2) the petition fee of $850.00; and (3) a statement of unintentional delay.

Petitioner has submitted an unintentionally delayed statement pursuant to 37 CFR 1.137(b). As of December 18, 2013, all petitions to revive an unintentionally abandoned application must be under rule 37 CFR 1.137(a). Since the statement on the instant petition cites the old rule, the statement is being construed as the statement required by

37 CFR 1.137(a). Petitioner must notify the Office if this is **not** a correct interpretation of the statement contained in the instant petition.

The application is being forwarded to Group Art Unit 1746 for consideration of the Amendment, filed November 18, 2016.

The above-identified application has been abandoned for an extended period of time. The Patent and Trademark Office is relying on petitioner's duty of candor and good faith and accepting the statement that the entire delay in filing the required reply from the due date for the reply until the filing of a grantable petition pursuant to 37 CFR 1.137(a) was unintentional.

Telephone inquiries related to this decision should be directed to Paralegal Specialist Paula Britton at 571-272-1556. All other inquiries concerning the examination or status of the application is accessible in the PAIR system at http://portal.uspto.gov/.

/Irvin Dingle/ for
Andrea Smith
Lead Paralegal Specialist
Office of Petitions

cc: Michael H. Trenholm
Knobbe Martens Olson & Bear, LLP
2479 East Bayshore Road
Suite 190
Palo Alto, CA 94303

Transmittal Communication on Petition	Application/Control No. 12/995,966	Applicant(s)/Patent Under Reexamination LENNOX ET AL.	
	Deciding Official PAULA BRITTON	Office of Petitions OPET	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address. --

(ADDITIONAL PARTY'S CORRESPONDENCE ADDRESS)

Michael H. Trenholm
Knobbe Martens Olson & Bear, LLP
2479 East Bayshore Road
Suite 190
Palo Alto, CA 94303

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above-identified Application/Patent.

Office of Petitions: Decision Count Sheet

Mailing Month: 3

Application No.: 12995966

12995966

For US serial numbers: enter number only, no slashes or commas. Ex: 10123456
For PCT: enter "51+single digit of year of filing+last 5 numbers", Ex. for PCT/US05/12345, enter 51512345

Deciding Official: BRITTON, PAULA

Count (1) - Palm Credit 12/995,966

Decision: GRANT

FINANCE WORK NEEDED
☐ Select Check Box for YES

GRANT

Decision Type: 502 - 37 CFR 1.137(b) - REVIVAL BASED ON UNINTENTI

502

Notes:

Count (2)

Decision: n/a

FINANCE WORK NEEDED
☐ Select Check Box for YES

Decision Type: NONE

Notes:

Count (3)

Decision: n/a

FINANCE WORK NEEDED
☐ Select Check Box for YES

Decision Type: NONE

Notes:

Initials of Approving Official (if required)

If more than 3 decisions, attach 2nd count sheet & mark this box ☐

Printed on: 3/23/2017

Office of Petitions Internal Document - Ver. 5.0

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/995,966	05/31/2011	Matthew Lennox	9852-2	4496

85936 7590 04/20/2017

Joseph Bain
Shutts & Bowen LLP
525 Okeechobee Blvd
Suite 1100
West Palm Beach, FL 33401

EXAMINER
GROSS, CARSON

ART UNIT	PAPER NUMBER
1746	

NOTIFICATION DATE	DELIVERY MODE
04/20/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

WPBDOCKET@novakdruce.com
jbain@shutts.com
ptomail@shutts.com

Office Action Summary	Application No. 12/995,966	Applicant(s) LENNOX ET AL.	
	Examiner CARSON GROSS	Art Unit 1746	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/18/2016*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *30-41* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *36-41* is/are rejected.

8)☒ Claim(s) *30-35 and 37-41* is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☒ All b)☐ Some** c)☐ None of the:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

Claim Objections

2. Claims 30-35 and 37-41 are objected to because of the following informalities: Claims 30 and 37 recite “wherein said heat shrinkable film form a permanent sarking…” This is grammatically incorrect and should read "wherein said heat shrinkable film forms a permanent sarking..." Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 37-41 are rejected under 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

5. Claim 37 recites a method of applying a moisture proof building wrap to a structure, the method comprising the use of a plastic film in horizontal bands on the edges of the structure. As described in the instant specification and shown in Figures 7 and 8, such a method is utilized to form a protective film on the walls of a building, not the roof, as in other embodiments. Therefore it is unclear how a method of applying a shrinkable film to the side walls of a structure can be used to form a permanent sarking layer under roofing. This distinction becomes more apparent in claim 38, which states that the film is cut to accommodate doors and windows, because the doors and windows are typically present on the walls of the structure rather than the roof. Claims 38-41 are also indefinite due to their dependence on claim 37.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 36 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Crook (US 2005/0217202).

8. Crook teaches a method of protecting a roof structure from wind and water damage during a storm, the method comprising: selecting a roll (35) of heat shrinkable film of suitable width; attaching a trailing end of the heat shrinkable film at an edge of the roof structure; withdrawing the heat shrinkable film from the roll toward an opposite edge of the roof structure; cutting the heat shrinkable film to a desired length long enough to cover the roof structure; attaching a leading edge of the heat shrinkable film

to the opposite edge of the roof structure; and applying heat to the heat shrinkable film to produce shrinkage (See Figures; [0040]-[0053]; [0065]).

9. Crook does not expressly disclose cutting a length of heat shrinkable film prior to attaching the trailing end of the film to the roof structure as claimed. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to cut the heat shrinkable film to a desired length and then apply it to the roof structure, since it has been held that the selection of reversing the steps of a prior art process is *prima facie* obvious in the absence of new or unexpected results. In the instant case, both sequences of steps provide a heat shrinkable film of desired length covering a roof structure, and no new or unexpected results are achieved by cutting prior to attaching.

Response to Arguments

10. Applicant's arguments, filed 11/18/2016, with respect to the rejection of claims 30-35 have been fully considered and are persuasive. These rejections have been withdrawn. Claims 30-35 are now objected to for grammatical reasons, as detailed above.

11. Applicant's arguments, filed 11/18/2016, with respect to the rejection of claims 37-41 have been fully considered and are persuasive. These rejections have been withdrawn. However claims 37-41 are now rejected under 35 U.S.C. 112, second paragraph, and objected to for grammatical reasons, as detailed above.

12. Applicant's arguments, filed 11/18/2016, with respect to the rejection of claim 36 have been fully considered but are not persuasive. The applicant argues that claim 36 is

in condition for allowance because Crook fails to teach or fairly suggest a method in which a heat shrinkable film forms a permanent sarking layer beneath roof cladding. This is not persuasive because claim 36 states that said heat shrinkable film *may* form a permanent sarking layer beneath roof cladding. The limitation is optional in the claim and therefore not required in the prior art reference to reject the claim.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CARSON GROSS whose telephone number is (571)270-7657. The examiner can normally be reached on Mon-Fri 8:30-6:00.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Orlando can be reached on (571)270-5038. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CARSON GROSS/
Primary Examiner, Art Unit 1746

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12995966	LENNOX ET AL.
	Examiner	Art Unit
	CARSON GROSS	1746

CPC- SEARCHED		
Symbol	Date	Examiner
E04D 5/00-12	04/12/2017	CAG
E04D 12/002	04/12/2017	CAG
E04G 21/28	04/12/2017	CAG
E04G 2021/248	04/12/2017	CAG

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
	Keyword Search	09/27/2012	CAG

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor Search	09/27/2012	CAG
Reviewed International Search Report	09/27/2012	CAG
Updated Inventor Search	04/12/2017	CAG

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/CARSON GROSS/ Primary Examiner.Art Unit 1746

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	7	("4769962" | "4818588" | "6632496" | "6797218" | "20050217202" | "20080060302" | "20080022620").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/26 19:02
S2	1	("20120186722").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/26 19:50
S3	10	("20020095898" | "5092099" | "5608992" | "5791090" | "6122889" | "6256956" | "6363681" | "6425213" | "6742305" | "6810626").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/26 20:01
S4	1	("4691427").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/27 14:39
S5	7	("4769962" | "4818588" | "6632496" | "6797218" | "20050217202" | "20080060302" | "20080022620").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S6	1	("20120186722").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/27 14:42
S7	10	("20020095898" | "5092099" | "5608992" | "5791090" | "6122889" | "6256956" | "6363681" | "6425213" | "6742305" | "6810626").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S8	19	S5 or S6 or S7 or S4	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S9	5	S8 and (heat$4 near shrink$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S10	19	("3715843" | "4019304" | "4315535" | "4321774" | "4458456" | "4488386" | "4693042" | "5040919" | "5079088" | "5190089" | "5865564" | "6029405" | "6122887" | "6122889" | "6224700").PN. OR ("6425213").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:51
S11	3	S8 and (shrink wrap)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 15:41
S12	69359	(roof$4 with (house or home or structure or building))	US-PGPUB; USPAT;	ADJ	ON	2012/09/27 16:04

			USOCR			
S13	252700	((temporary or protect$5) near2 (cover or membrane or film or liner))	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:04
S14	91141	(damag$4 with (weather or rain$4 or storm$4 or wind or water or flood$4 or hurricane or tornado))	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:05
S15	45100	(heat shrink$4) or (shrink wrap$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:06
S16	9	(S12 and S13 and S14 and S15)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:06
S17	3441394	(weather or rain$4 or storm$4 or wind or water or flood$4 or hurricane or tornado)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:08
S18	61	(S12 and S13 and S17 and S15)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:08
S19	162312	((temporary or protect$5) near2 (cover or membrane or film or liner))	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:08
S20	71060	(roof$4 with (house or home or structure or building))	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:08
S21	29158	(heat shrink$4) or (shrink wrap$4)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:09
S22	3790908	(weather or rain$4 or storm$4 or wind or water or flood$4 or hurricane or tornado)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:09
S23	2	S19 and S20 and S21 and S22	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:09
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S25	1	S24 and reflect$4	US-PGPUB; USPAT	ADJ	ON	2012/09/27 16:11
S26	595846	((frame or construction) with (house or home or structure or building))	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:18
S27	286	S26 and S13 and S15 and S17	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:19
S28	53	S27 and roof	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:19
S29	6	S27 and (reflect$4 near2 heat)	US-PGPUB;	ADJ	ON	2012/09/27 16:20

			USPAT; USOCR			
S30	302281	((frame or construction) with (house or home or structure or building))	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:21
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S32	76	S18 or S28	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:22
S33	21077	S26 and S13	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:24
S34	135	S33 and roof$4 and (heat near2 reflect$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:25
S35	530	S19 and (S20 or S30) and S22	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:26
S36	222	S35 and roof	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:27
S37	252	S35 and roof$4	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:27
S38	262	(house wrap) or housewrap	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S39	42	S38 and roof	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S40	0	S38 and roof and (heat near reflect$4)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S41	0	S38 and (heat near reflect$4)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S42	851	(house wrap) or housewrap	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:36
S43	265	S42 and roof	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 17:03
S44	429	S42 and (weather or rain$4 or storm$4 or wind or flood$4 or hurricane or tornado)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 17:04
S45	198	S43 and S44	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 17:04
S46	10	(US-20050217202-$ or US-20120186722-$ or US-20080022620-$ or US-20020095898-$ or US-20050103375-$ or US-20080060302-$).did. or (US-4691427-$ or US-4769962-$ or US-6122889-$ or US-6425213-$).did.	US-PGPUB; USPAT	ADJ	ON	2012/09/27 17:05
S47	2	S42 and S46	US-PGPUB;	ADJ	ON	2012/09/27 17:05

			USPAT			
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S50	33	("4813210" | "5008366" | "5108821" | "5231814" | "4271218" | "4657807" | "5895723" | "20060040091" | "4871597" | "4985106" | "20050058790" | "4508776" | "4668555" | "5451367" | "5017429" | "5888614" | "4698254" | "20060147696" | "5585154" | "4401104" | "4529633" | "4384083" | "4686152" | "4916016" | "4924650" | "5105970" | "20060068674" | "7297384" | "4537313" | "5143245" | "5324467" | "6037032" | "5709914").PN.	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 14:09
S51	6	S50 and shrink$4	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 14:10
S52	6	S50 and shrink$6	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 14:10
S53	573	E04D12/002.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:37
S54	27	S53 and shrink$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:37
S55	27	S53 and shrink$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:37
S56	0	S53 and heat$4 nearshrink$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:37
S57	2	S53 and heat$4 near shrink$6	US-PGPUB; USPAT; USOCR;	ADJ	OFF	2017/04/12 15:37

			EPO; JPO; DERWENT			
S58	0	S53 and (heatshrink$6 or heat-shrink$6)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:42
S59	4	S53 and heat$4 near4 shrink$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:42
S60	4	S53 and heat$4 near5 shrink$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:43
S61	203	E04G21/28.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:43
S62	54	E04G2021/248.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:44
S63	220	S61 OR S62	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:44
S64	4	S63 and ((heat$4 near5 shrink$6) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:44
S65	2030	E04D5/02-12.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:46
S66	19	S65 and ((heat$4 near5 shrink$6) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:46
S67	23	S65 and ((heat$4 near5 (shrink$6 or shrunk$6)) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT; USOCR;	ADJ	OFF	2017/04/12 15:47

			EPO; JPO; DERWENT			
S68	0	S53 and heat$4 near4 shrunk$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:47
S69	2	S63 and (heat$4 near5 shrunk$6)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:47
S70	102	E04D5/00.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:54
S71	0	S70 and ((heat$4 near5 (shrink$6 or shrunk$6)) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:54
S72	2263	("house wrap" or ((roof or wall) near5 (wrap or sarking or sheathing or decking or sheeting or insulat$4 or (reflect$4 near (heat$4 or insulat$4)) or underlayment or (foil near (laminate or composite))))) and (heat$4 near5 (shrink$6 or shrunk$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:57
S73	1430	("house wrap" or ((roof or wall) near5 (wrap or sarking or sheathing or decking or sheeting or insulat$4 or (reflect$4 near (heat$4 or insulat$4)) or underlayment or (foil near (laminate or composite))))) and (heat$4 (shrink$6 or shrunk$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:58
S74	26	"house wrap" and (heat$4 (shrink$6 or shrunk$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:59
S75	83	(roof$5 near5 (sarking or sheathing or decking or insulat$4 or (reflect$4 near (heat$4 or insulat$4)) or underlayment or (foil near (laminate or composite)))) and (heat$4 (shrink$6 or shrunk$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 16:01
S76	14	(US-20050217202-$ or US-20120186722-$ or US-20080022620-$ or US-20020095898-$ or US-20050103375-$ or US-20080060302-$ or US-20070166521-$ or US-20080209819-$ or US-20040206034-$ or US-20150136283-$).did. or (US-4691427-$ or US-4769962-$ or US-6122889-$ or US-6425213-$).did.	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 16:08

S77	3	S64 and ((heat$4 near5 (shrink$6 or shrunk$6)) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 16:09
S78	15	(S53 or S61 or S62 or S65 or S70) and (shrink$6 wrap)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 16:11
S79	42	(roof$5 near5 membrane) and ((shrink$4 wrap) or (heat$4 shrink$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 16:14
S80	8	S76 and ((heat$4 near5 (shrink$6 or shrunk$6)) or (heatshrink$6 or heat-shrink$6) or (shrink$6 wrap$4))	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 16:27

EAST Search History (Interference)

<This search history is empty>

4/ 12/ 2017 4:36:12 PM
C:\ Users\ cgross1\ Documents\ EAST\ Workspaces\ 12995966.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor	:	Matthew Lennox
App. No.	:	12/995,966
Filed	:	May 31, 2011
For	:	ROOF AND WALL COVER SYSTEM
Examiner	:	Gross, Carson
Art Unit	:	1746
Conf. No.	:	4496

Amendment

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Final Office Action dated April 20, 2017, please amend the above-captioned application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 4 of this paper.

Electronic Acknowledgement Receipt

EFS ID:	29551269
Application Number:	12995966
International Application Number:	
Confirmation Number:	4496
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew Lennox
Customer Number:	85936
Filer:	Michael H. Trenholm/Imran Ahmed
Filer Authorized By:	Michael H. Trenholm
Attorney Docket Number:	9852-2
Receipt Date:	20-JUN-2017
Filing Date:	31-MAY-2011
Time Stamp:	14:54:39
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Amend_DUMME111_001APC.pdf	36234 ee1591d77306de0a04e7159d290aa171ff871013	yes	5

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	4	5
	Claims	2	3
	Response After Final Action	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	36234	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

REMARKS

In the Final Office Action dated April 20, 2017, the Examiner objected to Claims 30-35 and 37-41 due to informalities, rejected Claims 37-41 under 35 U.S.C. §112 as being indefinite, and rejected Claim 36 under 35 U.S.C. §103 as being unpatentable over the Crook reference (US 2005/0217202). By this paper, the Applicant has amended the claims to highlight the subject matter that the Applicant believes is allowable over the art of record. Hence, reconsideration of the above-captioned application in light of the amendments and remarks contained herein is now respectfully requested.

By this paper, the Applicant has amended Claim 30 to correct the informalities noted by the Examiner. The Examiner has similarly amended Claim 36 to remove the conditional terminology and is now allowable. The Applicant has further amended Claim 37 to remove the roof cladding language and replaced it with wall cladding. The Applicant therefore submits these claims are now in condition for allowance.

The Applicant further submits that the remaining claims define additional patentable subject matter and are further allowable due to their respective dependencies on Claims 30 and 37. The Applicant therefore believes that the above-captioned application is in condition for allowance and requests the prompt allowance of the same. Should there be any impediment to the prompt allowance of this application that could be resolved by a telephone conference, the Examiner is respectfully requested to call the undersigned at the number shown below.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not

reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: June 20, 2017

By:/Michael Trenholm/
Michael H. Trenholm
Registration No. 37,743
Attorney of Record
Customer No. 20995
(650) 752-1100

26157530

AMENDMENTS TO THE CLAIMS

1-29 (Cancelled)

30. (Currently Amended) A method of covering an opening in a roof structure to protect from water ingress, said method comprising the steps of: (a) selecting a roll of heat shrinkable film; (b) cutting a required number of lengths of said film from said roll; said lengths being sufficient to extend from an edge of said opening to an opposite edge of said opening; (c) assembling said lengths of heat shrinkable film into a sheet of material; (d) positioning said sheet of material over said opening; (e) affixing said sheet by mechanical means; and (f) applying heat to said sheet so as to produce heat shrinkage and, wherein said heat shrinkable film forms a permanent sarking layer beneath roof cladding.

31. (Previously Presented) The method of claim 30 wherein said method comprises the further steps of: (a) cutting at least one aperture into said sheet of material, (b) affixing a vent over said aperture so as to allow communication between air volumes above and below said sheet of material.

32. (Previously Presented) The method of claim 30 wherein said method comprises the further steps of: (a) attaching a trailing end of said sheet at an edge of said roof structure, (b) taking a leading edge of said sheet to said opposite edge, (c) attaching said leading edge of said sheet at said opposite edge, (d) applying heat with a heat gun to said sheet of heat shrinkable film.

33. (Previously Presented) The method of claim 30 wherein said roof structure comprises an existing roof damaged through wind shear or impact.

34. (Previously Presented) The method of claim 30 wherein said roof structure comprises unclad roof framing of a building under construction.

35. (Previously Presented) The method of claim 34 wherein said heat shrinkable film is provided with a heat reflecting surface; said heat shrinkable film forming a heat reflective layer under roof cladding.

36. (Currently Amended) A method of protecting a roof structure from water ingress; said method comprising the steps of: (a) selecting a roll of heat shrinkable film of suitable width, (b) cutting a length of said film from said roll sufficient to extend from one edge of said roof structure to an opposite edge, (c) attaching a trailing end of said length at an edge of said roof structure, (d) taking a leading edge of said length to said opposite edge, (e) attaching said leading end of said length at said opposite edge, (f) applying heat to said length of heat shrinkable film so as to produce heat shrinkage and, wherein said heat shrinkable film ~~may~~ forms a permanent sarking layer beneath roof cladding.

37. (Currently Amended) A method of applying a moisture proof building wrap to a structure; said method comprising the steps of: (a) providing a roll of heat shrinkable plastic film, (b) attaching a free edge of said film to an inside perimeter edge of said structure and disposing an opposite leading edge of said film horizontally across to an opposite side of said structure one or more times to form one or more horizontal bands of said film for fixing thereto, (c) applying heat to said bands to shrink said film tight against said structure and, wherein said heat shrinkable film forms a permanent sarking layer beneath wall ~~roof~~ cladding.

38. (Previously Presented) The method as claimed in claim 37 and comprising the further step of cutting the film to accommodate doors, windows and other penetrations.

39. (Previously Presented) The method as claimed in claim 37 wherein a plurality of bands of said film with taped overlapping joints are formed on said structure.

40. (Previously Presented) The method as claimed in claim 37 wherein said heat is applied to the perimeter corners and top and bottom plate areas of said structure.

41. (Previously Presented) The method as claimed in claim 37 wherein said building wrap is a heat shrinkable polyethylene film.

Structural Wrap Exhibit 1014, Page 451
Structural Wrap v Stormseal, IPR2024-00084

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/995,966	Filing Date 05/31/2011	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **06/20/2017**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
JAMES TUNSTALL

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

85936 7590 07/17/2017

Joseph Bain
Shutts & Bowen LLP
525 Okeechobee Blvd
Suite 1100
West Palm Beach, FL 33401

EXAMINER
GROSS, CARSON

ART UNIT	PAPER NUMBER
1746	

DATE MAILED: 07/17/2017

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/995,966	05/31/2011	Matthew Lennox	9852-2	4496

TITLE OF INVENTION: ROOF AND WALL COVER SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	10/17/2017

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

85936 7590 07/17/2017

Joseph Bain
Shutts & Bowen LLP
525 Okeechobee Blvd
Suite 1100
West Palm Beach, FL 33401

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/995,966	05/31/2011	Matthew Lennox	9852-2	4496

TITLE OF INVENTION: ROOF AND WALL COVER SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	10/17/2017

EXAMINER	ART UNIT	CLASS-SUBCLASS
GROSS, CARSON	1746	156-085000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:

❑ Issue Fee

❑ Publication Fee (No small entity discount permitted)

❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

❑ A check is enclosed.

❑ Payment by credit card. Form PTO-2038 is attached.

❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

Structural Wrap Exhibit 1014, Page 454
Structural Wrap v. Stormseal, IPR2024-00084

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/995,966	05/31/2011	Matthew Lennox	9852-2	4496

85936 7590 07/17/2017

Joseph Bain
Shutts & Bowen LLP
525 Okeechobee Blvd
Suite 1100
West Palm Beach, FL 33401

EXAMINER	
GROSS, CARSON	

ART UNIT	PAPER NUMBER
1746	

DATE MAILED: 07/17/2017

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 12/995,966	Applicant(s) LENNOX ET AL.	
	Examiner CARSON GROSS	Art Unit 1746	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *correspondence filed 06/20/2017*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *30-41*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☒ All b) ☐ Some *c) ☐ None of the:
   1. ☒ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/CARSON GROSS/
Primary Examiner, Art Unit 1746

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: The prior art fails to teach or fairly suggest every limitation of the instant claimed method. Specifically, there is no teaching or suggestion in the prior art to cut lengths from a roll of heat shrinkable film, applying said lengths to a roof or siding of a building, and heating the lengths of film to shrink the film and thereby form a permanent sarking layer beneath roof cladding or wall cladding. While it is known in the prior art to apply lengths of heat shrinkable film to buildings, as detailed in the previous Office actions (Non-Final Rejection filed 10/05/2012 and Final Rejection filed 04/20/2017), such a film does not form a permanent sarking layer as claimed. For at least these reasons, the claimed invention is allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CARSON GROSS whose telephone number is (571)270-7657. The examiner can normally be reached on Mon-Fri 8:30-6:00.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Orlando can be reached on (571)270-5038. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CARSON GROSS/
Primary Examiner, Art Unit 1746

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	7	("4769962" | "4818588" | "6632496" | "6797218" | "20050217202" | "20080060302" | "20080022620").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/26 19:02
S2	1	("20120186722").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/26 19:50
S3	10	("20020095898" | "5092099" | "5608992" | "5791090" | "6122889" | "6256956" | "6363681" | "6425213" | "6742305" | "6810626").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/26 20:01
S4	1	("4691427").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/27 14:39
S5	7	("4769962" | "4818588" | "6632496" | "6797218" | "20050217202" | "20080060302" | "20080022620").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S6	1	("20120186722").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/27 14:42
S7	10	("20020095898" | "5092099" | "5608992" | "5791090" | "6122889" | "6256956" | "6363681" | "6425213" | "6742305" | "6810626").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S8	19	S5 or S6 or S7 or S4	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S9	5	S8 and (heat$4 near shrink$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:42
S10	19	("3715843" | "4019304" | "4315535" | "4321774" | "4458456" | "4488386" | "4693042" | "5040919" | "5079088" | "5190089" | "5865564" | "6029405" | "6122887" | "6122889" | "6224700").PN. OR ("6425213").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 14:51
S11	3	S8 and (shrink wrap)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 15:41
S12	69359	(roof$4 with (house or home or structure or building))	US-PGPUB; USPAT;	ADJ	ON	2012/09/27 16:04

			USOCR			
S13	252700	((temporary or protect$5) near2 (cover or membrane or film or liner))	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:04
S14	91141	(damag$4 with (weather or rain$4 or storm$4 or wind or water or flood$4 or hurricane or tornado))	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:05
S15	45100	(heat shrink$4) or (shrink wrap$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:06
S16	9	(S12 and S13 and S14 and S15)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:06
S17	3441394	(weather or rain$4 or storm$4 or wind or water or flood$4 or hurricane or tornado)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:08
S18	61	(S12 and S13 and S17 and S15)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:08
S19	162312	((temporary or protect$5) near2 (cover or membrane or film or liner))	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:08
S20	71060	(roof$4 with (house or home or structure or building))	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:08
S21	29158	(heat shrink$4) or (shrink wrap$4)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:09
S22	3790908	(weather or rain$4 or storm$4 or wind or water or flood$4 or hurricane or tornado)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:09
S23	2	S19 and S20 and S21 and S22	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:09
S24	8	(US-20050217202-$ or US-20120186722-$ or US-20080022620-$ or US-20020095898-$).did. or (US-4691427-$ or US-4769962-$ or US-6122889-$ or US-6425213-$).did.	US-PGPUB; USPAT	ADJ	ON	2012/09/27 16:11
S25	1	S24 and reflect$4	US-PGPUB; USPAT	ADJ	ON	2012/09/27 16:11
S26	595846	((frame or construction) with (house or home or structure or building))	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:18
S27	286	S26 and S13 and S15 and S17	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:19
S28	53	S27 and roof	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:19
S29	6	S27 and (reflect$4 near2 heat)	US-PGPUB;	ADJ	ON	2012/09/27 16:20

			USPAT; USOCR			
S30	302281	((frame or construction) with (house or home or structure or building))	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:21
S31	2	S19 and S21 and S22 and S30	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:21
S32	76	S18 or S28	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:22
S33	21077	S26 and S13	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:24
S34	135	S33 and roof$4 and (heat near2 reflect$4)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:25
S35	530	S19 and (S20 or S30) and S22	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:26
S36	222	S35 and roof	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:27
S37	252	S35 and roof$4	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:27
S38	262	(house wrap) or housewrap	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S39	42	S38 and roof	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S40	0	S38 and roof and (heat near reflect$4)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S41	0	S38 and (heat near reflect$4)	EPO; JPO; DERWENT	ADJ	ON	2012/09/27 16:35
S42	851	(house wrap) or housewrap	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 16:36
S43	265	S42 and roof	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 17:03
S44	429	S42 and (weather or rain$4 or storm$4 or wind or flood$4 or hurricane or tornado)	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 17:04
S45	198	S43 and S44	US-PGPUB; USPAT; USOCR	ADJ	ON	2012/09/27 17:04
S46	10	(US-20050217202-$ or US-20120186722-$ or US-20080022620-$ or US-20020095898-$ or US-20050103375-$ or US-20080060302-$).did. or (US-4691427-$ or US-4769962-$ or US-6122889-$ or US-6425213-$).did.	US-PGPUB; USPAT	ADJ	ON	2012/09/27 17:05
S47	2	S42 and S46	US-PGPUB;	ADJ	ON	2012/09/27 17:05

			USPAT			
S48	1	("4315535").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/09/27 19:24
S49	10	(US-20050217202-$ or US-20120186722-$ or US-20080022620-$ or US-20020095898-$ or US-20050103375-$ or US-20080060302-$).did. or (US-4691427-$ or US-4769962-$ or US-6122889-$ or US-6425213-$).did.	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 12:18
S50	33	("4813210" | "5008366" | "5108821" | "5231814" | "4271218" | "4657807" | "5895723" | "20060040091" | "4871597" | "4985106" | "20050058790" | "4508776" | "4668555" | "5451367" | "5017429" | "5888614" | "4698254" | "20060147696" | "5585154" | "4401104" | "4529633" | "4384083" | "4686152" | "4916016" | "4924650" | "5105970" | "20060068674" | "7297384" | "4537313" | "5143245" | "5324467" | "6037032" | "5709914").PN.	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 14:09
S51	6	S50 and shrink$4	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 14:10
S52	6	S50 and shrink$6	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 14:10
S53	573	E04D12/002.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:37
S54	27	S53 and shrink$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:37
S55	27	S53 and shrink$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:37
S56	0	S53 and heat$4 nearshrink$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:37
S57	2	S53 and heat$4 near shrink$6	US-PGPUB; USPAT; USOCR;	ADJ	OFF	2017/04/12 15:37

			EPO; JPO; DERWENT			
S58	0	S53 and (heatshrink$6 or heat-shrink$6)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:42
S59	4	S53 and heat$4 near4 shrink$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:42
S60	4	S53 and heat$4 near5 shrink$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:43
S61	203	E04G21/28.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:43
S62	54	E04G2021/248.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:44
S63	220	S61 OR S62	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:44
S64	4	S63 and ((heat$4 near5 shrink$6) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:44
S65	2030	E04D5/02-12.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:46
S66	19	S65 and ((heat$4 near5 shrink$6) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:46
S67	23	S65 and ((heat$4 near5 (shrink$6 or shrunk$6)) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT; USOCR;	ADJ	OFF	2017/04/12 15:47

			EPO; JPO; DERWENT			
S68	0	S53 and heat$4 near4 shrunk$6	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:47
S69	2	S63 and (heat$4 near5 shrunk$6)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:47
S70	102	E04D5/00.CPC.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:54
S71	0	S70 and ((heat$4 near5 (shrink$6 or shrunk$6)) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:54
S72	2263	("house wrap" or ((roof or wall) near5 (wrap or sarking or sheathing or decking or sheeting or insulat$4 or (reflect$4 near (heat$4 or insulat$4)) or underlayment or (foil near (laminate or composite))))) and (heat$4 near5 (shrink$6 or shrunk$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:57
S73	1430	("house wrap" or ((roof or wall) near5 (wrap or sarking or sheathing or decking or sheeting or insulat$4 or (reflect$4 near (heat$4 or insulat$4)) or underlayment or (foil near (laminate or composite))))) and (heat$4 (shrink$6 or shrunk$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:58
S74	26	"house wrap" and (heat$4 (shrink$6 or shrunk$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 15:59
S75	83	(roof$5 near5 (sarking or sheathing or decking or insulat$4 or (reflect$4 near (heat$4 or insulat$4)) or underlayment or (foil near (laminate or composite)))) and (heat$4 (shrink$6 or shrunk$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 16:01
S76	14	(US-20050217202-$ or US-20120186722-$ or US-20080022620-$ or US-20020095898-$ or US-20050103375-$ or US-20080060302-$ or US-20070166521-$ or US-20080209819-$ or US-20040206034-$ or US-20150136283-$).did. or (US-4691427-$ or US-4769962-$ or US-6122889-$ or US-6425213-$).did.	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 16:08

S77	3	S64 and ((heat$4 near5 (shrink$6 or shrunk$6)) or (heatshrink$6 or heat-shrink$6))	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 16:09
S78	15	(S53 or S61 or S62 or S65 or S70) and (shrink$6 wrap)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 16:11
S79	42	(roof$5 near5 membrane) and ((shrink$4 wrap) or (heat$4 shrink$6))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	OFF	2017/04/12 16:14
S80	8	S76 and ((heat$4 near5 (shrink$6 or shrunk$6)) or (heatshrink$6 or heat-shrink$6) or (shrink$6 wrap$4))	US-PGPUB; USPAT	ADJ	OFF	2017/04/12 16:27
S81	832	(156/85).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/04/12 17:59
S82	8	S81 and roof	US-PGPUB; USPAT; USOCR	ADJ	OFF	2017/04/12 18:03
S83	9	S81 and roof$4	US-PGPUB; USPAT; USOCR	ADJ	OFF	2017/04/12 18:03

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S84	0	(roof$4 with sarking with (heat$4 near3 shrink$4) with (roll$4 or coil$4)).clm.	USPAT	ADJ	ON	2017/07/11 13:07
S85	1	(roof$4 with (heat$4 near3 shrink$4) with (roll$4 or coil$4)).clm.	USPAT	ADJ	ON	2017/07/11 13:07
S86	7	(roof$4 with (heat$4 near3 shrink$4)).clm.	USPAT	ADJ	ON	2017/07/11 13:07
S87	0	(((house wrap) or housewrap) with (heat$4 near3 shrink$4)).clm.	USPAT	ADJ	ON	2017/07/11 13:08
S88	21	((house or home or building or structure) with (opening or expos$4 or gap) with (heat$4 near3 shrink$4)).clm.	USPAT	ADJ	ON	2017/07/11 13:09
S89	16	((house or home or building or structure) with (moisture or water) with (heat$4 near3 shrink$4)).clm.	USPAT	ADJ	ON	2017/07/11 13:10
S90	0	((house or home or building or structure) with (moisture or water) with (heat$4 near3 shrink$4) with sarking).clm.	USPAT	ADJ	ON	2017/07/11 13:10
S91	0	((roof$5 near5 (sarking or sheathing or decking or insulat$4 or (reflect$4 near (heat$4 or insulat$4)) or underlayment or (foil near (laminate or composite)))) with (moisture or water) with (heat$4 near3 shrink$4) with sarking).clm.	USPAT	ADJ	ON	2017/07/11 13:11

7/ 11/ 2017 1:13:22 PM
C:\ Users\ cgross1\ Documents\ EAST\ Workspaces\ 12995966.wsp

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12995966	LENNOX ET AL.
	Examiner	**Art Unit**
	CARSON GROSS	1746

CPC							
Symbol						**Type**	**Version**
E04G		21	/	28		F	2013-01-01
E04D		5	/	06		A	2013-01-01
E04D		5	/	00		A	2013-01-01
E04D		12	/	002		I	2013-01-01
E04G		2021	/	248		A	2013-01-01
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			/				

CPC Combination Sets								
Symbol					**Type**	**Set**	**Ranking**	**Version**
			/					
			/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	12	
/CARSON GROSS/ Primary Examiner.Art Unit 1746	07/11/2017	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12995966	LENNOX ET AL.
	Examiner	**Art Unit**
	CARSON GROSS	1746

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED					
156	85	E	0	4	G	21 / 28 (2006.01.01)						

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	12	
/CARSON GROSS/ Primary Examiner.Art Unit 1746	07/11/2017	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12995966	LENNOX ET AL.
	Examiner	**Art Unit**
	CARSON GROSS	1746

☒ **Claims renumbered in the same order as presented by applicant** ☐ **CPA** ☐ **T.D.** ☐ **R.1.47**

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 12	
/CARSON GROSS/ Primary Examiner.Art Unit 1746 (Primary Examiner)	07/11/2017 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12995966	LENNOX ET AL.
	Examiner	Art Unit
	CARSON GROSS	1746

CPC- SEARCHED		
Symbol	Date	Examiner
E04D 5/00-12	04/12/2017	CAG
E04D 12/002	04/12/2017	CAG
E04G 21/28	04/12/2017	CAG
E04G 2021/248	04/12/2017	CAG

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
	Keyword Search	09/27/2012	CAG

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor Search	09/27/2012	CAG
Reviewed International Search Report	09/27/2012	CAG
Updated Inventor Search	04/12/2017	CAG
Updated Inventor Search	07/11/2017	CAG

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	Keyword Search	07/11/2017	CAG

	/CARSON GROSS/ Primary Examiner.Art Unit 1746

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

85936 7590 07/17/2017

Joseph Bain
Shutts & Bowen LLP
525 Okeechobee Blvd
Suite 1100
West Palm Beach, FL 33401

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/995,966	05/31/2011	Matthew Lennox	~~9852-2~~ DUMME111.001APC	4496

TITLE OF INVENTION: ROOF AND WALL COVER SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	10/17/2017

EXAMINER	ART UNIT	CLASS-SUBCLASS
GROSS, CARSON	1746	156-085000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☒ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

Knobbe Martens
Olson & Bear LLP

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Matthew Lennox

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Cronulla, Australia

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☒ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☒ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☒ The director is hereby authorized to charge ~~the required fee(s),~~ any deficiency, or credits any overpayment, to Deposit Account Number 11-1410 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

☐ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

☐ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date 10/13/17

Typed or printed name Michael H. Trenholm Registration No. 37,743

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

SUPPLEMENTAL APPLICATION DATA SHEET

Application Information

Application Number::	12/995966
Filing Date::	May 31, 2011
Application Type::	Nonprovisional
Subject Matter::	Utility
Title::	ROOF AND WALL COVER SYSTEM
Attorney Docket Number::	DUMME111.001APC ~~9852-2~~
Total Drawing Sheets::	7

Applicant Information

Applicant Authority Type::	Inventor
Primary Citizenship Country::	AU
Status::	Full Capacity
Given Name::	Matthew
Family Name::	LENNOX
City of Residence::	Cronulla ~~Miranda, NSW~~
Country of Residence::	AU
Street::	43 Parramatta Street ~~Unit 27~~ ~~205/213 Port Hacking Road~~
City::	Cronulla ~~Miranda, NSW~~
Country::	AU
Postal or Zip Code::	NSW 2230 ~~2228~~

Applicant Authority Type::	Inventor
Primary Citizenship Country::	AU
Status::	Full Capacity
Given Name::	Rodney
Family Name::	BURGE
City of Residence::	Miranda, NSW

Country of Residence::	AU
Street::	Unit 27
	205/213 Port Hacking Road
City::	Miranda, NSW
Country::	AU
Postal or Zip Code::	2228

Applicant Authority Type::	Inventor
Primary Citizenship Country::	AU
Status::	Full Capacity
Given Name::	Adam
Family Name::	FARROW
City of Residence::	Miranda, NSW
Country of Residence::	AU
Street::	Unit 27
	205/213 Port Hacking Road
City::	Miranda, NSW
Country::	AU
Postal or Zip Code::	2228

Correspondence Information

Correspondence Customer Number:: 20995 ~~85936~~

E-Mail Address:: efiling@knobbe.com ~~wpbdocket@novakdruce.com~~

Representative Information

Representative Customer Number:: 20995 ~~85936~~

Domestic Priority Information

Application::	Continuity Type::	Parent Application::	Parent Filing Date::
This Application	a 371 of international	PCT/AU2009/000685	2009-06-02

Foreign Priority Information

Country::	Application Number::	Filing Date::	Priority Claimed::
AU	2008202416	2008-06-02	Yes
AU	2008203409	2008-07-30	Yes
AU	2008101060	2008-10-30	Yes
AU	2009200232	2009-01-22	Yes

Assignment Information

Assignee Name:: Matthew Lennox ~~Storm Holdings (Aust) Pty Ltd.~~

Street:: 43 Parramatta Street ~~Unit 27~~

~~205/213 Port Hacking Road~~

City:: Cronulla ~~Miranda, NSW~~

Country:: AU

Postal or Zip Code:: NSW 2230 ~~2228~~

Dated: October 16, 2017

By:/Michael Trenholm/
Michael H. Trenholm
Registration No. 37,743
Registered Practitioner
Customer No. 20995
(650) 752-1100

PTO/SB/122 (04-15)
Approved for use through 01/31/2018. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

CHANGE OF CORRESPONDENCE ADDRESS
Application

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	12/995,966
Filing Date	May 31, 2011
First Named Inventor	Matthew Lennox
Art Unit	1746
Examiner Name	Gross, Carson
Attorney Docket Number	DUMME111.001APC

Please change the Correspondence Address for the above-identified patent application to:

☒ The address associated with Customer Number: **20995**

OR

☐ Firm or Individual Name

Address

City	State	Zip

Country

Telephone	Email

This form cannot be used to change the data associated with a Customer Number. To change the data associated with an existing Customer Number use "Request for Customer Number Data Change" (PTO/SB/124).

I am the:

☐ Applicant/Inventor

☐ Assignee of record of the entire interest.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).

☒ Attorney or agent of record. Registration Number 37,743.

☐ Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Registration Number_____.

Signature	/Michael Trenholm/
Typed or Printed Name	Michael H. Trenholm
Date	October 13, 2017
Telephone	(650) 752-1100

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/01A (09-13)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	ROOF AND WALL COVER SYSTEM

As the below named inventor(s), I/we declare that:

This declaration is directed to:

- ☐ The attached application, or
- ☒ United States application or PCT international application number 12/995,966 filed on May 31, 2011
- ☐ As amended on _____ (if applicable);

I/we believe that I/we am/are the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought;

I/we have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment specifically referred to above;

I/we acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me/us to be material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application. The above-identified application was made or authorized to be made by me/us.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

All statements made herein of my/our own knowledge are true, all statements made herein on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and may jeopardize the validity of the application or any patent issuing thereon. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5), or both.

FULL NAME OF INVENTOR(S)

Inventor one: Matthew Lennox Date: 16 OCT 2017

Signature: [signature] Citizen of: AUSTRALIA

Inventor two: _____ Date: _____

Signature: _____ Citizen of: _____

☐ Additional inventors or a legal representative are being named on _____ additional form(s) attached hereto.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Please Direct All Correspondence to Customer Number **20995**

ISSUE FEE TRANSMITTAL LETTER

First Inventor	:	Matthew Lennox
App. No	:	12/995966
Filed	:	May 31, 2011
For	:	ROOF AND WALL COVER SYSTEM
Art Unit		1746
Class/Sub-Class	:	156/085000
Examiner	:	Gross, Carson

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed for filing is the Issue Fee for the above-identified application:

(X) Form PTOL-85.

(X) Supplemental Application Data Sheet.

(X) Specific Power of Attorney with Revocation.

(X) Statement under 37 CFR § 3.73 Establishment of Assignee.

(X) Change of Correspondence Address.

(X) Declaration for Matthew Lennox.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Account No. 11-1410.

/Michael Trenholm/
Michael H. Trenholm
Registration No. 37,743
Attorney of Record
Customer No. 20,995
(650) 752-1100

Please Direct All Correspondence to Customer Number **20995**

26879697

Electronic Patent Application Fee Transmittal

Application Number:	12995966
Filing Date:	31-May-2011
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew Lennox
Filer:	Michael H. Trenholm
Attorney Docket Number:	9852-2

Filed as Large Entity

Filing Fees for U.S. National Stage under 35 USC 371

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	960	960

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**960**

Electronic Acknowledgement Receipt

EFS ID:	30655017
Application Number:	12995966
International Application Number:	
Confirmation Number:	4496
Title of Invention:	ROOF AND WALL COVER SYSTEM
First Named Inventor/Applicant Name:	Matthew Lennox
Customer Number:	85936
Filer:	Michael H. Trenholm/Gustavo Lopez
Filer Authorized By:	Michael H. Trenholm
Attorney Docket Number:	9852-2
Receipt Date:	16-OCT-2017
Filing Date:	31-MAY-2011
Time Stamp:	14:03:15
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$960
RAM confirmation Number	101717INTEFSW14043600
Deposit Account	111410
Authorized User	Gustavo Lopez

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.492 (National application filing, search, and examination fees)

37 CFR 1.492(a) (Basic national fee only)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Issue.pdf	238769 7359ec063796d7d7a2e39c76ffdaf5fca8b3b270	no	1
Warnings:					
Information:					
2	Application Data Sheet	Supp_ADS.pdf	19605 07d0adb67d65ba8d1a9789f534faa8e2f57c424b	no	3
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
3	Power of Attorney	POA.pdf	263456 054e23f7cfa5102140a73e8126637e73342429fd	no	1
Warnings:					
Information:					
4	Assignee showing of ownership per 37 CFR 3.73	373.pdf	22127 8cfc7654499c6d030aed807bca26b40ac84113ed	no	2
Warnings:					
Information:					
5	Change of Address	Change_Corr_Address.pdf	82404 460201479cbc6244d476c8419c47d6875259633d	no	2
Warnings:					
Information:					
6	Oath or Declaration filed	Declaration.pdf	971999 f688884c521596bb24fdbca53e7eb0dd37221aa8	no	2
Warnings:					

Information:					
7	Transmittal Letter	Issue_Trans.pdf	16922 b88f583d15153cc2388b0a21ae9e69b53b5cdba7	no	2
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	30609 5f4137f55add13ddfe341da057692e51614346f0	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	1645891	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Please Direct All Correspondence to Customer Number 20995

SPECIFIC POWER OF ATTORNEY WITH REVOCATION

Inventor	:	Matthew Lennox
App. No.	:	12/995966
Filed	:	May 31, 2011
For	:	ROOF AND WALL COVER SYSTEM
Examiner	:	Gross, Carson
Art Unit	:	1746
Conf No.	:	4496

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The undersigned is the Applicant/Inventor of the above-identified application. As of the execution date of the Assignment or the execution date set forth below, whichever is later, the undersigned hereby revokes any previous powers of attorney in the subject application, and hereby appoints the registrants of Knobbe, Martens, Olson & Bear, LLP, **Customer No. 20995**, as its attorneys with full power of substitution and revocation to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected herewith. This appointment is to be to the exclusion of the inventor(s) and his attorney(s) in accordance with the provisions of 37 CFR § 3.71.

Attached is a Statement Under 37 CFR § 3.73, signed by a registrant of Knobbe, Martens, Olson & Bear, LLP, setting forth a full chain of title for the subject application owned by the Applicant named below.

Please recognize or change the correspondence address for the application identified in the attached Statement to **Customer No. 20995.**

By: _____ Date: 25 AUG 2017

Name: Matthew Lennox Title: Applicant/Inventor

Address: 43 Parramatta Street,
Cronulla NSW 2230 Australia

STATEMENT UNDER 37 CFR § 3.73
ESTABLISHMENT OF ASSIGNEE

First Inventor	:	Matthew Lennox
App. No.	:	12/995966
Filed	:	May 31, 2011
For	:	ROOF AND WALL COVER SYSTEM
Examiner	:	Gross, Carson
Group Art Unit	:	1746
Conf No.	:	4496

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This document is being filed with a copy of a Power of Attorney signed by the Assignee. This Statement sets forth the chain of title of the above-identified application.

Matthew Lennox, an individual, is the Assignee of the entire right, title, and interest of the above-referenced application by virtue of:

A chain of title, in reverse order, from the inventor(s) to the current Assignee as shown by the following recorded assignments:

1. Assignment from Storm (Aust) Pty Ltd to Matthew Lennox submitted to the United States Patent and Trademark Office on September 26, 2017.
2. Assignment from Storm Holding (Aust) Pty Ltd to Storm (Aust) Pty Ltd recorded in the United States Patent and Trademark Office on August 22, 2017, at Reel 043633, and Frame 0498.
3. Assignment from Case File Management Systems Pty Ltd to Storm Holding (Aust) Pty Ltd recorded in the United States Patent and Trademark Office on January 26, 2011, at Reel 025701, and Frame 0555.
4. Assignment from Matthew Lennox and Case File Management Systems Pty Ltd to Case File Management Systems Pty Ltd recorded in the United States Patent and Trademark Office on January 26, 2011, at Reel 025701, and Frame 0789.

The undersigned is an agent of Customer No. 20995 and is authorized to act on behalf of the Assignee. Please recognize or change the correspondence address for the above-identified application to **Customer No. 20995.**

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 10/13/2017

By:/Michael Trenholm/
Michael H. Trenholm
Registration No. 37,743
Attorney of Record
Customer No. 20995
(650) 752-1100

26547817

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/995,966	05/31/2011	Matthew Lennox	9852-2

CONFIRMATION NO. 4496

POA ACCEPTANCE LETTER

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

OC000000094818597

Date Mailed: 10/18/2017

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/16/2017.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/yteferra/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/995,966	05/31/2011	Matthew Lennox	9852-2

CONFIRMATION NO. 4496

POWER OF ATTORNEY NOTICE

85936
Joseph Bain
Shutts & Bowen LLP
525 Okeechobee Blvd
Suite 1100
West Palm Beach, FL 33401

OC000000094818542

Date Mailed: 10/18/2017

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/16/2017.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/yteferra/

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/995,966	05/31/2011	1746	1110	DUMME111.001APC	12	2

CONFIRMATION NO. 4496

CORRECTED FILING RECEIPT

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

OC000000094821811

Date Mailed: 10/18/2017

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Matthew Lennox, Cronulla, AUSTRALIA;
Rodney Burge, Miranda, AUSTRALIA;
Adam Farrow, Miranda, AUSTRALIA;

Applicant(s)

Matthew Lennox, Cronulla, AUSTRALIA;
Rodney Burge, Miranda, AUSTRALIA;
Adam Farrow, Miranda, AUSTRALIA;

Assignment For Published Patent Application

STORM HOLDINGS (AUST) PTY LTD., Miranda, NSW, AU

Power of Attorney: The patent practitioners associated with Customer Number 20995

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/AU09/00685 06/02/2009

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
AUSTRALIA 2008202416 06/02/2008 No Access Code Provided
AUSTRALIA 2008203409 07/30/2008 No Access Code Provided
AUSTRALIA 2008101060 10/30/2008 No Access Code Provided
AUSTRALIA 2009200232 01/22/2009 No Access Code Provided

Permission to Access Application via Priority Document Exchange: No

Permission to Access Search Results: No

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 04/16/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/995,966**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No

Title

ROOF AND WALL COVER SYSTEM

Preliminary Class

156

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/995,966	11/21/2017	9822536	DUMME111.001APC	4496

20995 7590 11/01/2017

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 65 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Matthew Lennox, Cronulla, AUSTRALIA;
Rodney Burge, Miranda, AUSTRALIA;
Adam Farrow, Miranda, AUSTRALIA;

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
12/995,966	05/31/2011	Matthew Lennox	DUMME111.001APC	133512

Acknowledgement of Change to Small Entity Status

The entity status change request below filed through Private PAIR on 03/05/2021 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant asserting small entity status. See 37 CFR 1.27.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Kyu Min/
Name:	Kyu Min
Registration Number:	67249