

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STRUCTURAL WRAP, LLC,
Petitioner

v.

SYSTEM STORMSEAL PTY LTD, STORMSEAL USA, LLC,
Patent Owner

Case IPR2024-00084
Patent 11,168,484

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT No. 11,168,484**

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EX1003	Declaration of Douglas R. Stieve
EX1004	U.S. Patent Application Pub. No. 2005/0217202 (“Crook”)
EX1005	U.S. Patent No. 8,407,958 (“Kelly”)
EX1006	U.S. Patent No. 6,851,229 (“Inzeo”)
EX1007	U.S. Patent No. 7,951,873 (“Best”)
EX1008	U.S. Patent No. 6,206,991 (“Starr”)
EX1009	U.S. Patent No. 6,425,213 (“Lachapelle”)
EX1010	U.S. Patent No. 7,517,941 (“Myhre”)
EX1011	U.S. Application No. 17/519,787 File History
EX1012	U.S. Application No. 17/977,136 File History
EX1013	U.S. Patent No. 9,822,536
EX1014	U.S. Patent No. 9,822,536 File History
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EX1016	Video Screen Recording of https://www.youtube.com/watch?v=2PKUMDmVRMY (“Lowe’s Video” or “Lowe’s”)
EX1017	<i>This Old House</i> Magazine, March 2005 Issue (“This-Old-House”)
EX1018	Blue Roof Tarps Webpage (“Blue-Roof-Tarps”)
EX1019	Plastic Sheeting: A guide to the specification and use of plastic sheeting in humanitarian relief (IFRC & Oxfam, 2007) (“Plastic-Sheeting”)
EX1020	Emergency Management Australia, Storm and Water Damage Operations, Third Edition (2007) (“EMA”)
EX1021	Americover Heat Shrink Wrap Webpage (“Americover”)
EX1022	October 26, 2023 Email re: Stormseal USA, LLC et al. v. Structural Wrap, LLC et al., No. 22-cv-81726 (S.D. Fla.) (Sotera Stipulation)
EX1023	Redacted Version of Plaintiffs’ Responses and Objections to Defendant Structural Wrap, LLC’s First Set of Interrogatories to Plaintiffs, dated June 12, 2023, in <i>Stormseal USA, LLC and System Stormseal Pty Ltd v. ABC Supply Co., Inc., Mule-Hide Products Co.</i> ,

Exhibit	Description
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EX1024	Declaration of Sayem Osman
EX1025	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding Americover
EX1026	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding EMA
EX1027	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding “Plastic-Sheeting”
EX1028	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding “Blue-Roof-Tarps”
EX1029	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding “Lowe’s Video”
EX1030	Declaration of Yash P. Khanna, Ph.D
EX1031	U.S. Patent Application Pub. No. 2002/009589 (“Bettencourt”)
EX1032	WO 2004/022646 (“Ohlsson”)
EX1033	U.S. Patent No. 4,247,509 (“Talbot 509”)
EX1034	U.S. Patent No. 4,763,783 (“Talbot 783”)
EX1035	U.S. Patent No. 4,715,915 (“Vanderzee”)
EX1036	DE 1, Complaint, in <i>Stormseal USA, LLC and System Stormseal Pty Ltd v. ABC Supply Co., Inc., Mule-Hide Products Co., Inc.</i> , and Structural Wrap, LLC, Case No. 9:22-cv-81726-AHS (S.D. Fla.)
EX1037	Transcript of EX1016 “Tarp Your Roof,” https://www.youtube.com/watch?v=2PKUMDmVRMY (“Lowe’s Transcript”)
EX1038	Rapra Technology Limited, <i>Handbook of Plastic Films</i> (2003) (“Rapra”)
EX1039	John H. Briston, <i>Plastics Films</i> , Third Edition (1989) (“Briston”)
EX1040	Americover Heat Shrink Wrap FAQ Webpage (“Americover-FAQ”)
EX1041	Library of Congress Record for EX1038
EX1042	Library of Congress Record for EX1039
EX1043	OMITTED

Exhibit	Description
EX1044	Fine Homebuilding Discussion Forum, https://www.finehomebuilding.com/forum/temporary-12-month-roof-covering
EX1045	Library of Congress Borrow Record (Handbook of Plastic Films)
EX1046	Library of Congress Borrow Record (Plastics Films)
EX1047	John H. Briston, <i>Plastics Films</i> , Third Edition (1989) (1990 Reprint)
EX1048	U.S. Patent No. 10,472,827 File History
EX1049	October 20, 2023 Letter from Google Custodian of Records Ra Bacchus and October 26, 2023 Certificate of Authenticity by Ra Bacchus
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EX1051	Declaration of Stephen Maniscalco
EX1052	Declaration of Chieh-Ming Hsu

Structural Wrap, LLC (“Petitioner”) petitions, under §§311-319 and §42.1,¹ for IPR of Claims 1-3 (“Claims”) of U.S. Patent 11,168,484 (“’484”), owned by System Stormseal Pty Ltd.² As explained below, there is a reasonable likelihood at least one Claim is unpatentable for the reasons herein, and Petitioner requests review of, and judgment against, all Claims under §103.

I. ’484 PATENT

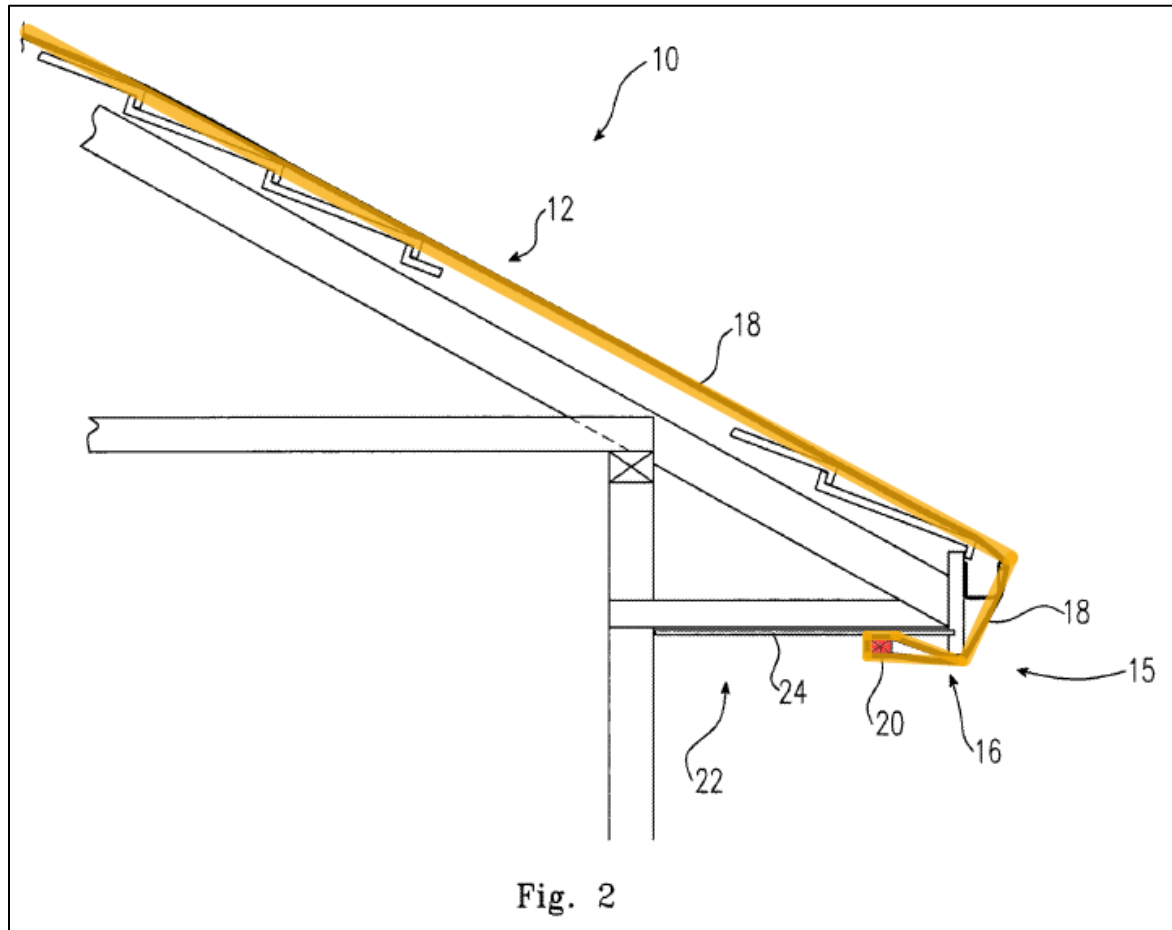
A. Overview

’484 concerns “protective covering of roofs and walls..., more particularly[] damaged or under[-]construction roofs....” (EX1001, 1:15-18); EX1003, ¶¶50-52. ’484 improperly attempts to claim long-known concepts: covering a roof with heat-shrinkable film by wrapping its edges around battens, attaching those wrapped battens to facias or the undersides (22) of eaves (24), and heating the film so it

¹ Sections are from 35 U.S.C./37 C.F.R. as context indicates, and emphasis/color annotations added and internal quotations/citations omitted unless noted.

² System Stormseal Pty Ltd. is owner, and Stormseal USA, LLC an exclusive licensee, of ’484. EX1036 ¶¶4-5. As the latter may be a real-party-in-interest, from abundance of caution Petitioner names and serves both (together, “PO”).

conforms to the roof. EX1001, Fig.2:



Claim 1 also requires film of low density polyethylene (“LDPE”) including shrinking resins, and that heating shrinks the sheet tight against the structure.

Claim 2 adds cutting the film sheet from a roll, and applying after cutting. Claim 3 recites a “pre-cut” sheet. These remaining limitations are trivial implementation choices to POSITA³—and the resulting combinations certainly obvious. While

³ Persons ordinarily skilled in the art as of June 2, 2008. *See* §VI.B.

(remarkably) PO still litigates them, *the Office has squarely rejected claims of identical scope* (and nearly-identical language) during prosecution of a child application *PO then abandoned* (§I.C).

As explained, *all* claimed steps were exceedingly well known before '484's earliest possible priority date.⁴ Indeed, during '484's prosecution (§§I.B-C), the Examiner found all steps *except batten-wrapping* ((2)) disclosed or rendered obvious. *E.g.*, EX1002, 266. But in examining *two subsequent applications*, the Examiner found art *disclosing* this step and *rejected claims of identical scope* (and nearly-identical language) *as obvious*. *E.g.*, EX1011, 286-290, 292; EX1012, 278-281, 283-284. And Examiner acknowledged the rejected claims "*claim/] the same invention as*" the previously-issued '484. EX1011, 292. Tellingly, *PO abandoned both applications without addressing the newly-discovered art*. EX1011, 314-315; EX1012, 302-303. PO's acquiescence was well-founded: '484's claims are unpatentable.

B. Prosecution

During prosecution, '484's Examiner rejected all pending claims as obvious, including over Crook (EX1004), Starr (EX1008), Lachapelle (EX1009), and Myhre (EX1010), finding:

⁴ In litigation PO asserts entitlement to June 2, 2008 priority. EX1023, 6.

- Crook teaches covering a roof with a sheet of shrink-wrap material and heating it to conform to the roof. EX1002, 214.
- LDPE was known, and shrink wrap material of LDPE with shrinking resins was obvious over Lachapelle and Myhre. EX1002, 215.
- Starr taught battens, and attachment to fascia or eaves was “a routine... design choice...” EX1002, 216; EX1003, ¶¶55-57.

PO amended certain claims to require “*wrapping the sheet’s edges around battens*” (EX1002, 253-257), arguing this “reduces tearing and enables applying uniform tension... enabl[ing] better fit...” EX1002, 247; *see also* EX1002, 248; EX1003, ¶58.

The Examiner allowed *the batten-wrapping claims*, stating this was missing from the art “and provides an advantage by avoiding... slack or looseness and corresponding air pockets,” but rejected the *others* as obvious over Crook in view of Bettencourt (EX1031), concluding “applying protective material to a roof and then cutting it into discrete panels, [w]as taught by Crook[, and] applying pre-formed discrete panels to a roof, [w]as taught by Bettencourt.” EX1002, 263-264, 266; EX1003, ¶¶59-62. “It would have been obvious to [POSITA] to substitute [Crook’s] non-cut material... for pre-cut sheets”; “[r]egardless of when the cutting step takes place, the same predictable result... is achieved.” EX1002, 263-264, 267.

After PO added *batten-wrapping* to *all* Claims (EX1002, 282-283), they were allowed. EX1002, 293; EX1003, ¶63.

C. Rejected/Abandoned Child Applications

The '787 Application (a CIP of '484) advanced claims 1, 10, and 15 with *identical scope*⁵ to '484's Claims 1-3. EX1011, 260, 69-78, 292; EX1003, ¶¶64-65.

Upon locating batten-wrapping art, the Examiner who allowed '484 *rejected* '787's claims 1, 10, and 15 as obvious, *acknowledging these “claim[] the same invention as that of” '484's Claims 1-3*, and finding them obvious over **Crook**, **Kelly** (EX1005), **Inzeo** (EX1006), and (for claim 1) **Best** (EX1007). EX1011, 286-290, 292; EX1003, ¶66.⁶ As with '484, the Examiner found Crook teaches roof-covering with sheets of heat-shrinkable film and heating to shrink/conform to the roof. EX1011, 285-286, 288-289; EX1003, ¶¶67. Regarding a sheet of LDPE including shrinking resins in Claim 1, the Examiner determined “Best teaches low density polyethylene polymers which have heat shrinking properties and may be

⁵ For claim 1 the only changes were from “an”/“a” to “the” in places; claims 2-3 were changed by requiring batten-wrapping steps in dependent claims.

⁶ Kelly, Inzeo, and Best were not identified during '484's or its parent's prosecution. *See* EX1002; EX1013; EX1014.

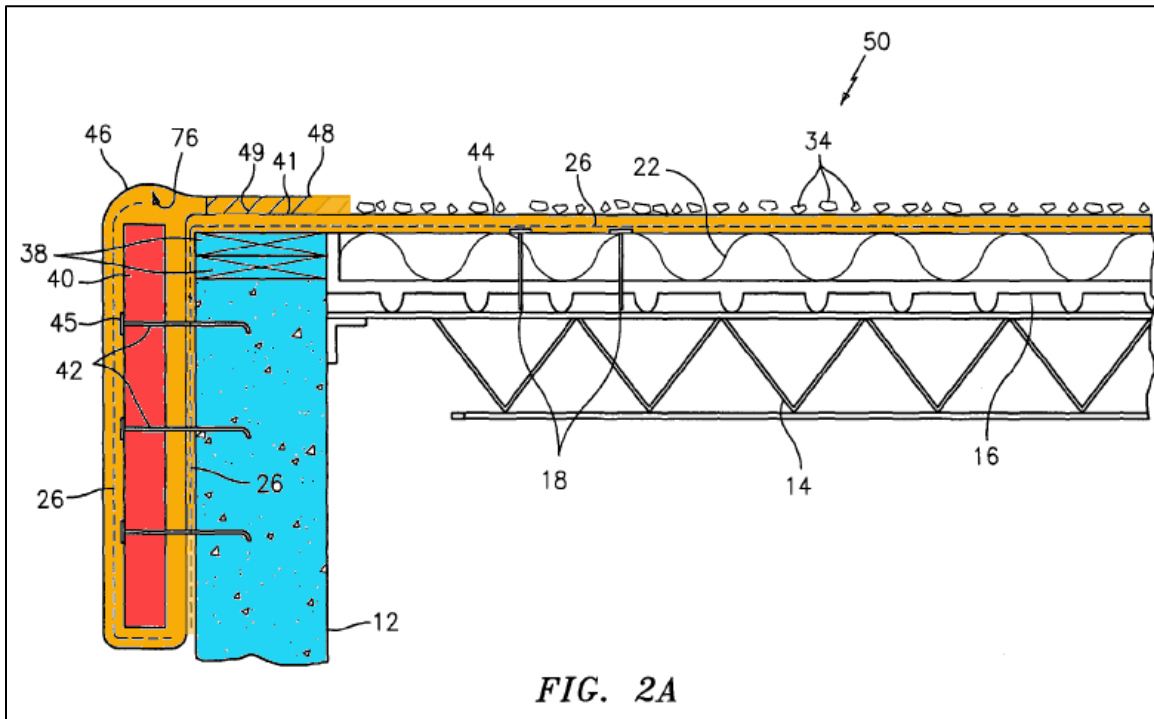
used as housewrap,” and it was obvious to “use [Best’s LDPE] formulations... to form the heat shrinkable film of Crook.” EX1011, 288-289; EX1003, ¶67. The Examiner found Kelly teaches wrapping a batten and attaching it to a wall, and “suitable fasteners” in Crook would include battens functioning as in Kelly. EX1011, 289; EX1003, ¶68. The Examiner found Inzeo teaches attaching “a membrane... to a fascia of a roof by an anchor,” and attaching membranes to fascia (in Inzeo) instead of walls (in Crook and Kelly) would have been obvious. EX1011, 289-290; EX1003, ¶¶69-71. The Examiner additionally found Crook alone obviated “applying” after cutting and “pre-cut” sheets. EX1011, 285-286; EX1003, ¶71. The Claims here are obvious for the same reasons (Grounds 1, 7) and more, discussed below.

PO *abandoned* this Application (EX1011, 314-315) and another child that proceeded similarly. EX1012, 302-303, 278-281, 283-284, 213-216 (*e.g.*, claims 18, 21-22); EX1003, ¶72.

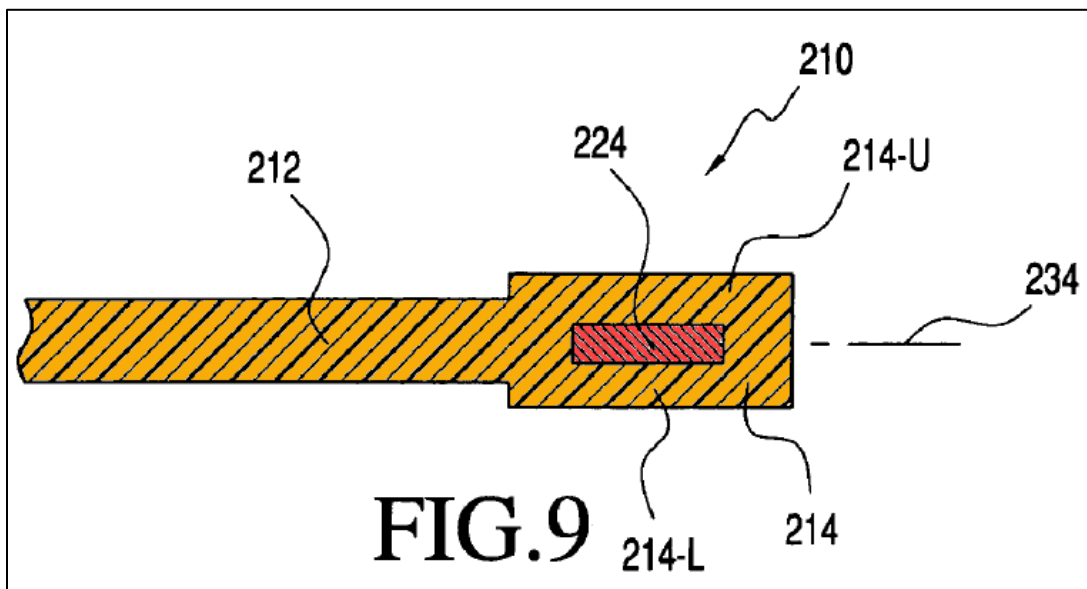
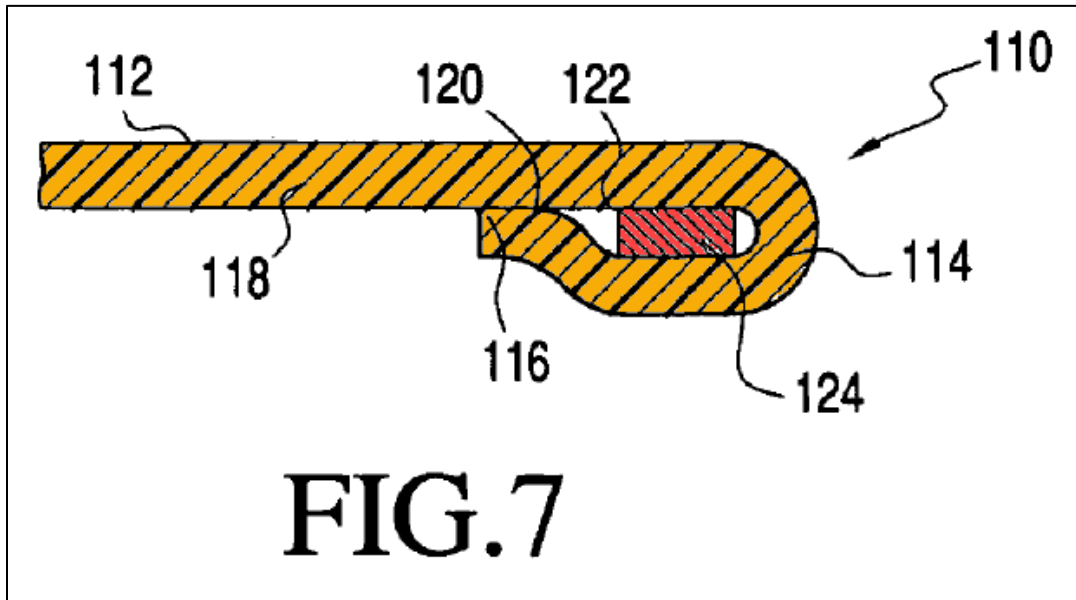
II. BACKGROUND ART

The Examiner allowed ’484 believing the art lacked “*wrapping leading and trailing ends around battens*” secured to roof structures. *See* §I.C; EX1002, 293. But as that same Examiner later found, batten-wrapping *was* disclosed in the art—and batten-wrapping (with its benefits) was well known long before ’484. *E.g.*, EX1003, ¶¶18-31:

- EX1005 (**Kelly**), 3:4-25 (“membrane... extend[ing]... far enough to... wrap around... 40”), Fig.2A ((orange) membrane around (red) batten):



- 3:31-41 (“sandwiching... *retain[s] uniformly*...”; sealing “*prevent[s]... rotting*”), 3:52-62 (“minimiz[es] localized stress”).
- EX1015, ¶1 ¶8 (“battens... folded-over...”), ¶16, ¶18, ¶¶21-22, ¶24, Figs.7 and 9 ((orange) “membranes” around (red) “battens”):



- EX1016-5 (“**Lowe’s**”), 0:28 (tarp around 2x4 batten):

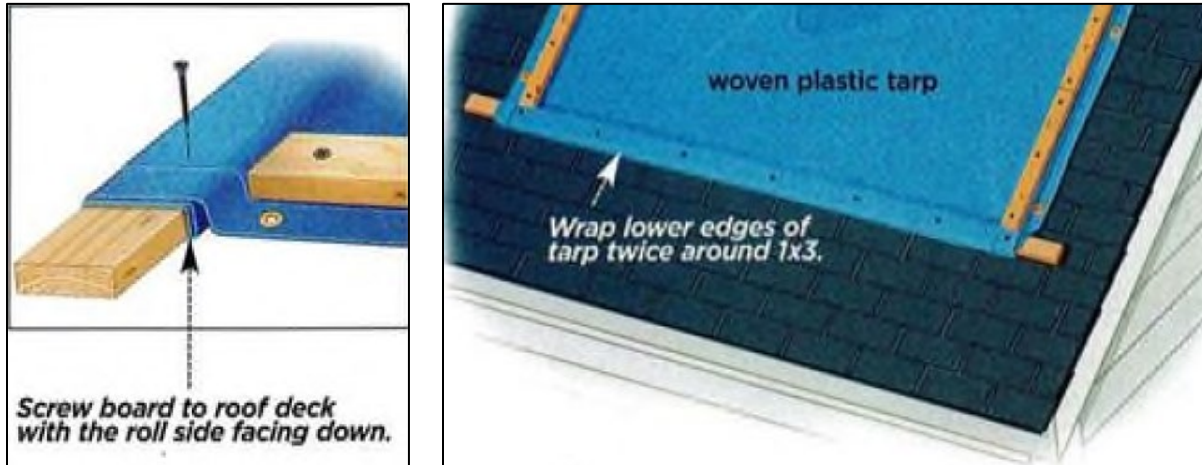


EX1037⁷, 4:5-7 (“Wrap one end of... tarp around [2x4].”)

- EX1017⁸, 22 (“[w]rap” tarp around “1x3” battens):

⁷ Transcript of EX1016. EX1052, ¶3.

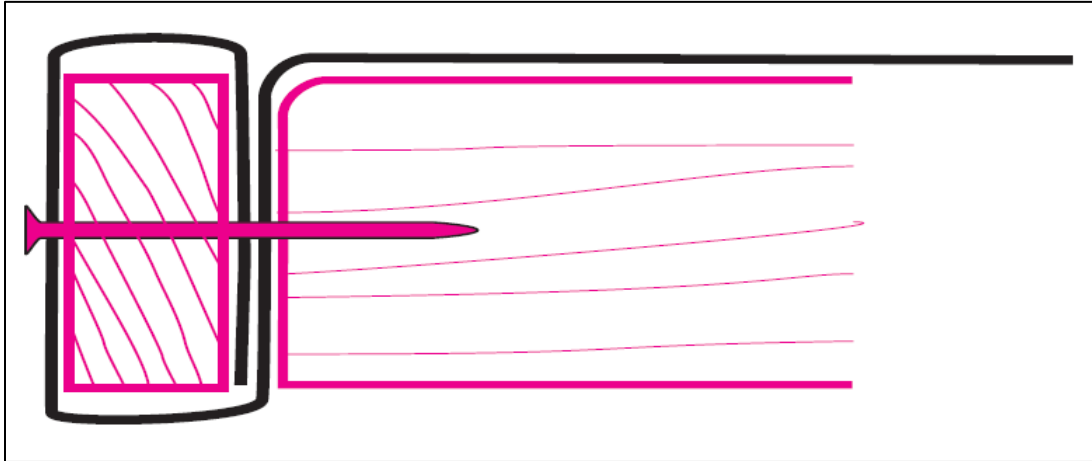
⁸ March 2005 issue of regularly-published periodical. EX1017, 1.



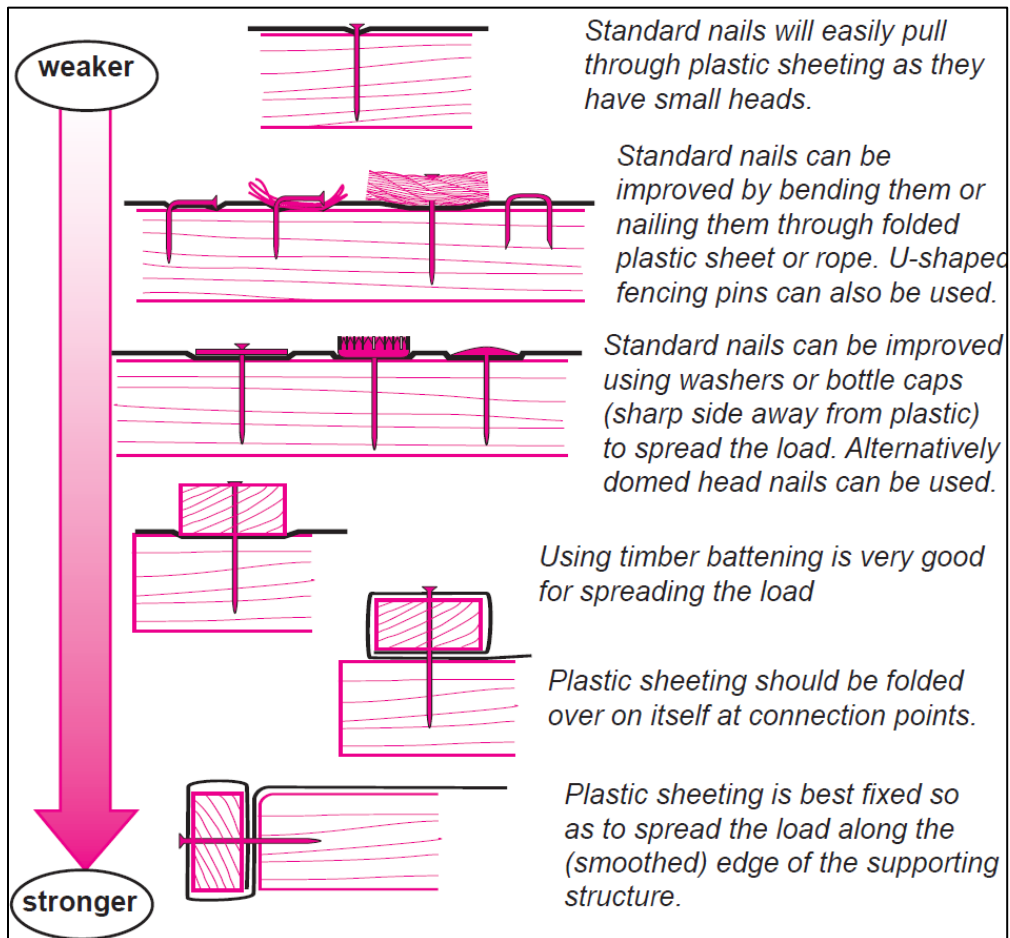
- EX1018⁹, 1 (“*wrap the edges of the tarp around a 1x2 or 1x3 [wood] strip*” (batten); “easy solution” helps “[p]revent[] [t]ears”)
- EX1019¹⁰, 8, 26, 31 (plastic sheeting around batten, covering damaged roof) (color original):

⁹ Available and archived August 27, 2007. See EX1028 1-2, 4-5.

¹⁰ “[A]vailable as a free download” before June 2008 at emergency aid shelter/shelter repair websites. EX1019, 2, 4; EX1027, 1-2, 4-8 (in “library additions” with download link, archived October 2007).



26 (“battening is very good for spreading the load”) (color original):



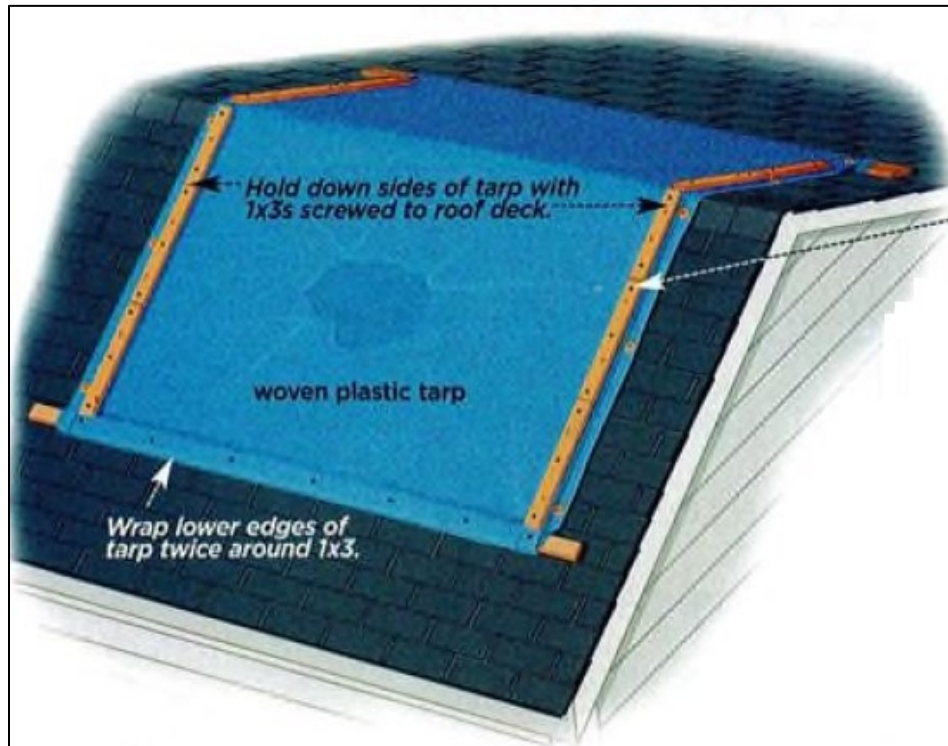
- EX1020.¹¹, 50 (“[w]rap a tarp around a piece of board”), 47 (using “Plastic sheeting... in... same manner”).

As the Examiner determined (§I.C), the Claims’ other limitations were also well known, *e.g.* (for claim 1):

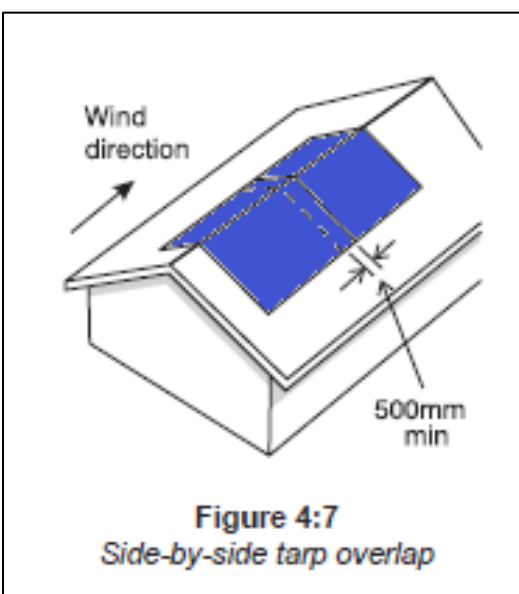
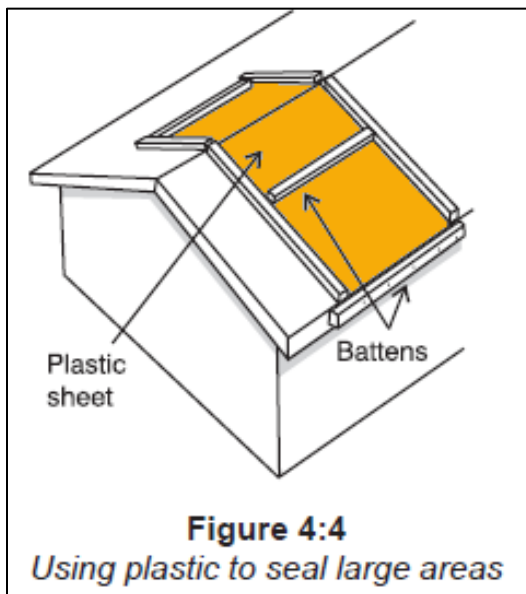
- ***Providing covers over at least a portion of a built structure’s storm-damaged roof.*** *E.g.*, EX1003, ¶¶32-38; EX1018, 1 (“tarp[]... solution... after... hurricane... causes significant damage to a roof”); EX1016-1, 0:15-0:27; EX1037, 2:5-7 (“Tarping... damaged roof is critical... post-hurricane”); EX1004, ¶¶1, 73 (“[r]oof covers... for securing... during... repair,” including roofs “severely damaged when exposed to high-wind conditions...”); EX1017, 22 (“protecting a storm-damaged roof” by “cover[ing]... with a... tarp... held... with... strips”):

¹¹ Government manual for download/order on EMA website by April 2007.

EX1020, 1-3, 12; EX1026, 1-84 (archived June and April 2007).



EX1020, 47-48:



EX1021, 1 (“skin-like... covering” “[p]rotecti[ng]” “[h]urricane and storm damaged structures”).

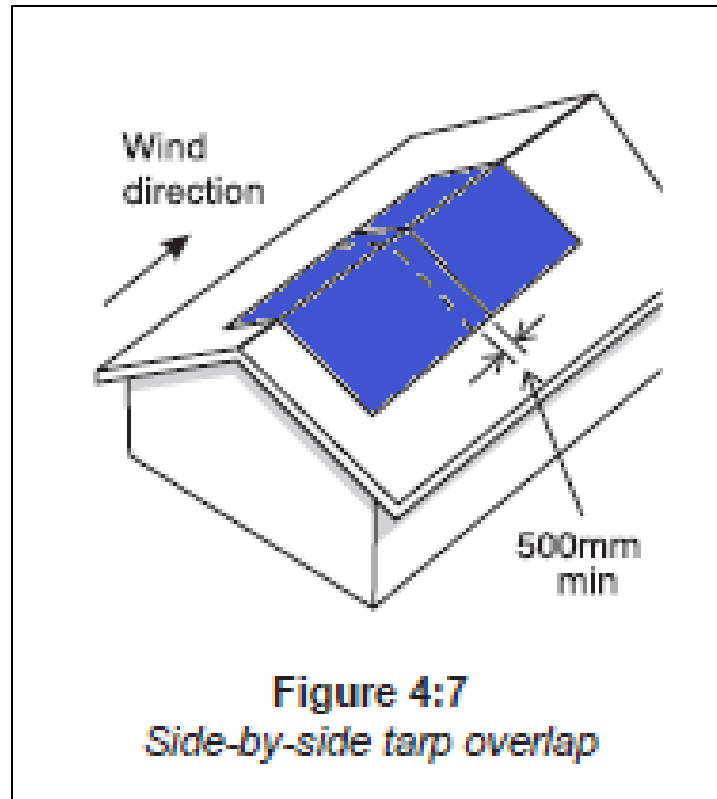
- ***Applying heat-shrinkable film to at least a roof portion and heating to shrink, conform.*** *E.g.*, EX1003, ¶¶39-42; EX1004, ¶65 (“roof cover ... configured to shrink in response to being exposed to heat”); EX1021, 1 (“heat shrink films” for “covering” “[b]uildings” shrink when “subjected to heat,” “allowing...film to mold itself to just about any structure”); EX1007, 2:10-19, 15:8-19, 21:4-15 (heat-shrinkable films “widely used” for, *e.g.*, “housewrap”).
- ***Heat-shrinkable film of LDPE including shrinking resins.*** *E.g.*, EX1003, ¶¶39-42; EX1030, ¶¶28-39; EX1007, 1:61-2:23, 21:4-22:13 (“heat-shrinkable film” prepared from non-linear LDPE resins); EX1021, 1 (“Heat Shrink Films... made using Low Density Polyethylene containing fractional melt virgin resins and other additives”); EX1010, 1:1-20 (“LDPE shrink films”); EX1009, 6:57-61; EX1033, 2:66-3:10; EX1034, 5:23-27; EX1039, 68¹²; EX1038, 48 (low density polyethylene “*common* material[] for shrink films”).¹³ Moreover, the ’484 also admits that the prior art included using a

¹² EX1039, 3 (“1989” stamp); *see* EX1042; EX1030, n.1.

¹³ EX1038, 4 (“2007” sticker); *see* EX1041.

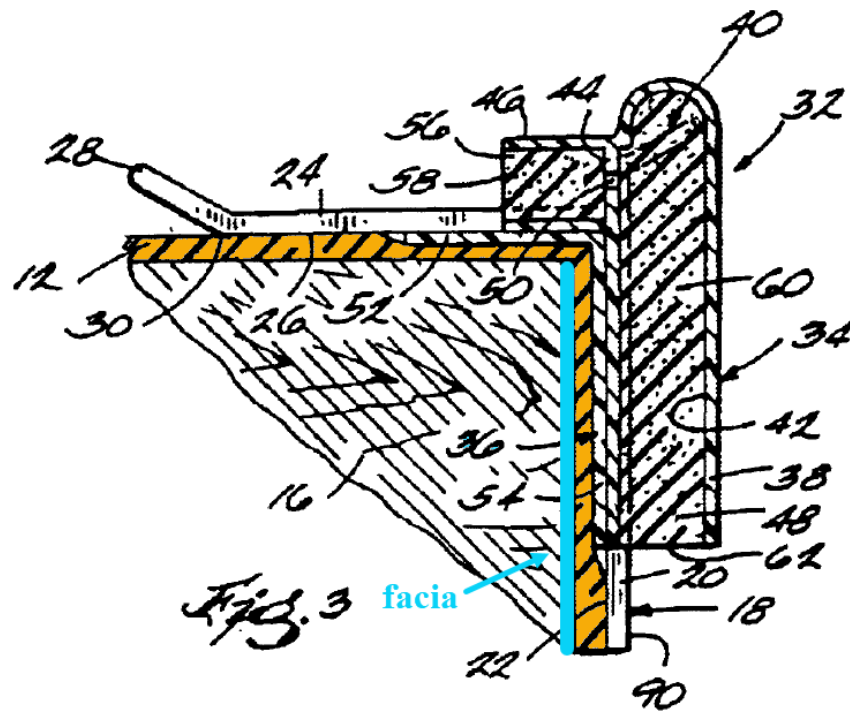
“flexible plastic film such as polyethylene” as a roof cover. EX1001, 2:11-12.

- *A sheet having leading/trailing edges.* E.g., EX1003, ¶¶43-48; EX1004, ¶¶60, 65, 67 (“roof cover” with “first” and “second end”); EX1020, 47-48:



EX1018, 1 (connected tarps with tape-“seal[ed] edge[s]”); EX1035, 1:20-51, 2:31-39, 3:29-32 (joined lengths forming wider sheet).

- *Attaching the covering’s edges to fascia or undersides of eaves.* E.g., EX1003, ¶¶19, 22-23, 27-28; EX1006, 2:38-43 (securing (orange) membrane “against [blue] vertical face of... nailer” (facia)), Fig.3:

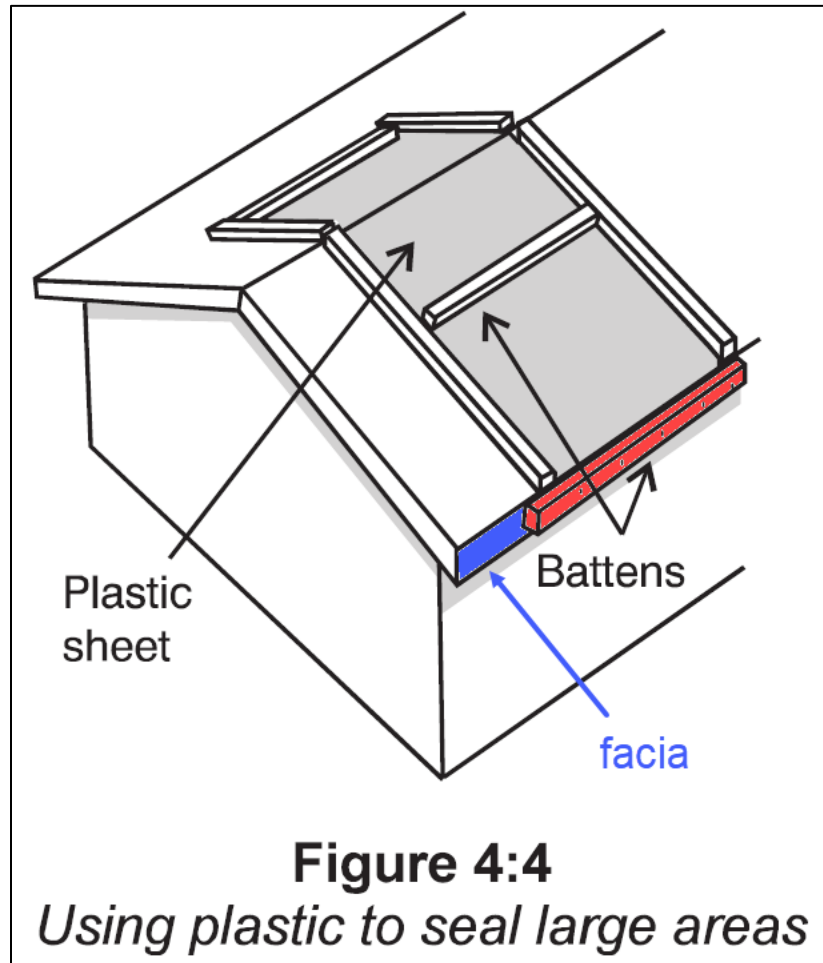


EX1018, 1 (“secure [tarp] to the underside of the eaves”); EX1016-5, 0:28

(attaching wrapped batten to facia):



EX1037, 4:12-14 (“roll that end of the tarp around another two-by-four and nail under the e[a]ve”); EX1020, 27, 47:



III. MANDATORY NOTICES (§42.8)

Petitioner and Real-Parties-in-Interest (§42.8(b)(1)): Structural Wrap, LLC is sole petitioner; there are no other real parties-in-interest.

Related Matters (§42.8(b)(2)): PO asserted '484 against Petitioner in *System Stormseal Pty Ltd. et al v. American Builders & Contractors Supply Co., Inc. d/b/a ABC Supply Co., Inc. et al.*, Case No. 1:22-cv-23523 (S.D. Fla.) (see Dkt. 6, 9 (dismissed before service)), and *Stormseal USA, LLC and System Stormseal Pty Ltd v. ABC Supply Co., Inc., Mule-Hide Products Co., Inc., and*

Structural Wrap, LLC, Case No. 9:22-cv-81726-AHS (S.D. Fla.), and against SRS Distribution Inc. (“SRS”) in *Stormseal USA, LLC and System Stormseal Pty Ltd. v. SRS Distribution Inc.*, Case No. 2:23-cv-00391-JRG (E.D. Tex.).

Lead and Back-Up Counsel and Service Information (§§42.8(b)(3)-(4)):

Lead: Megan Raymond (Reg. No. 72,997), GROOMBRIDGE, WU, BAUGHMAN & STONE LLP, 801 17th Street, NW, Suite 1050, Washington, DC, 20006 P: (202) 505-5830 /F: (202) 595-0359, megan.raymond@groombridgewu.com. Backup: J. Steven Baughman (Reg. No. 47,414), GROOMBRIDGE, WU, BAUGHMAN & STONE LLP, 801 17th Street, NW, Suite 1050, Washington, DC, 20006 P: (202) 505-5830 /F: (202) 595-0359, steve.baughman@groombridgewu.com. Service by email is accepted if sent to the above-identified email addresses and structural-wrap-ipr@groombridgewu.com. Mailing address for all PTAB correspondence: Megan Raymond, GROOMBRIDGE, WU, BAUGHMAN & STONE LLP, 801 17th Street, NW, Suite 1050, Washington, DC, 20006.

IV. STANDING (§42.104(a))

Petitioner certifies ’484 is eligible for, and Petitioner is not barred or estopped from requesting, IPR. Neither Petitioner nor any RPI or privy was served more than one year before this Petition or initiated a civil action challenging ’484’s validity.

V. GROUNDS (§§42.22 and 42.104(b))

The Claims are unpatentable under pre-AIA §103:

Ground	Claim(s)	References/Basis
1	1	Crook in view of Kelly, Inzeo, and Best
2	1	Crook in view of Kelly, Inzeo, Best, and Vanderzee
3	1	Crook in view of Kelly, Inzeo, and Americover
4	1	Crook in view of Kelly, Inzeo, Americover, and Vanderzee
5	1	Crook in view of Lowe's and Americover
6	1	Crook in view of Lowe's, Americover, and Vanderzee
7	2-3	Crook in view of Kelly and Inzeo
8	2-3	Crook in view of Kelly, Inzeo, and Vanderzee
9	2-3	Crook in view of Lowe's
10	2-3	Crook in view of Lowe's and Vanderzee

EX1003, ¶¶86-87, 320-321.

§§VI.C.9 provides charts specifying how the art renders the Claims obvious.

In further support, technical expert Declarations (Mr. Stieve: (EX1003); Dr.

Khanna: (EX1030)) are attached. *See also* EX1003, App'x C (expanded-quotation claim charts).

VI. DETAILED REASONS FOR RELIEF

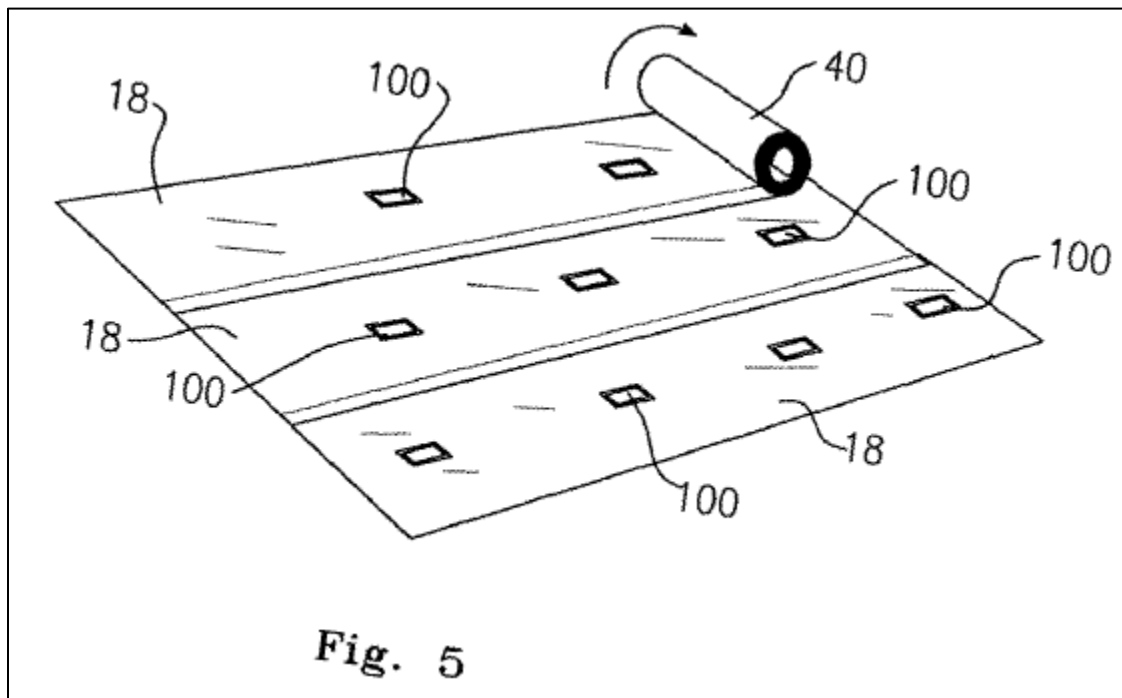
There is a reasonable likelihood Petitioner will prevail with respect to at least one Claim (§314(a)), because all are obvious.

A. Claim Construction

In addition to the following, Petitioner herein construes all terms per *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*); §42.100(b), presuming terms have their “ordinary and customary meaning [to POSITA] at the time of the

invention.” *David Netzer Consulting Eng’r LLC v. Shell Oil Co.*, 824 F.3d 989, 993 (Fed. Cir. 2016):

“**sheet**” (all): **assembly of at least two lengths of film.** ’484’s specification “repeatedly and consistently” uses “sheet” as being formed only by joining/assembling at least two lengths. *See, e.g., Netzer*, 824 F.3d at 994; EX1001, Abstract (“the film *formed as a sheet comprising an assembly of lengths*”), 2:51-55, 3:20-21, 3:52-54, 7:26-30 (“*adjoining* edges of the *lengths* of film are taped *to form a waterproof assembled sheet*”), 5:50-52 (“Fig. 5 is... *preparation of a sheet*... prepared on [the] ground surface *as an assembly of lengths*....”), Fig.5:



This is also consistent with '484's prosecution. *E.g.*, EX1002, 129 (Examiner describing Crook as teaching "applying adhesive tape to the overlapping portions such that *the strips are assembled into a sheet*").

PO incorrectly interprets "sheet" more broadly in litigation to include a single length of film. EX1036, ¶¶39-44. Under either interpretation, Grounds 1-10 render the Claims unpatentable, as explained *infra* §VI.C.9.

B. Level Of Ordinary Skill

The relevant field (apart from materials science aspects pertinent to at least claim 1) is the protective covering of buildings, and in particular roofs. POSITA would at minimum have five years' professional experience in protecting (including waterproofing) roofs. EX1003, ¶¶13-14. Alternatively, a bachelor's (or higher) in architecture, civil or structural engineering, or a related subject, with one or more years of practical experience protecting (including waterproofing) roofs, could substitute for the years' professional experience described above. EX1003, ¶¶13-14.

Because claim 1 includes the *composition* of the heat-shrinkable film, the field of art relevant to at least claim 1 additionally includes materials science related to heat-shrinkable films. EX1030, ¶¶20-23. For those aspects of claim 1 (apart from the protective covering of buildings aspects), POSITA would have at least a bachelor's degree in chemistry, materials science or engineering, polymer

science or engineering, or a related subject, and at least one or two years of practical experience involving the composition and processing of heat-shrinkable plastic films. EX1030, ¶¶21-22. More advanced educational training focused on polymer science or engineering related to heat-shrinkable plastic films could substitute for the practical experience; and significant practical experience with the composition and processing of heat-shrinkable plastic films could substitute for formal educational training. EX1030, ¶¶21-22.

POSITA could be a composite or team of individuals with these skill levels. *Abiomed, Inc. v. White Swell Medical Ltd.*, IPR2021-01478, Pap.37, 31 n.10 (Apr. 4, 2023) (collecting “Board decisions defining [POSITA] in terms of multi-disciplinary teams”); *Apotex Inc. v. Novartis AG*, IPR2017-00854, Pap.109, 10-11 (July 11, 2018). POSITA are presumed knowledgeable of all relevant art, and thus familiar with each reference herein and its full teachings.

C. Obviousness Grounds

1. Crook (EX1004)—art under at least pre-AIA §§102(a)-(b), (e)

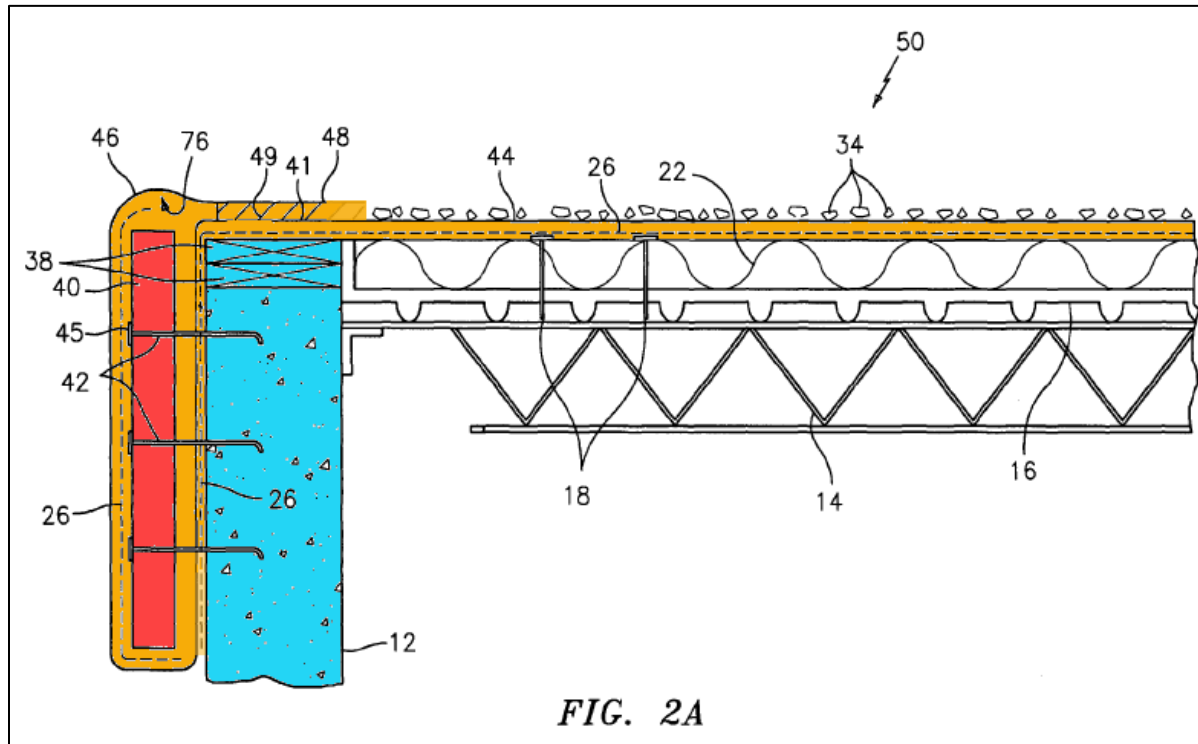
Crook (a U.S. Application published in 2005) discloses a “cover” used for “securing roofs during roof repair.” *E.g.*, EX1004, Abstract, ¶73. The cover is made of membrane “strips... laid side by side and... attached together by lengths of tape.” *E.g.*, *id.* ¶¶60, 66-67. Crook teaches installing the cover by “positioning” each of “a first [and “second”] end of at least a portion of [the] roof cover so that

the first[/"second"] end[s] extend[] adjacent (and preferably over) a first[/"second"] edge of a roof [respectively] and so that the first[/"second"] end is held in place adjacent the first[/"second"] edge.” *E.g., id.*, ¶¶65, 7-8. The “roof cover” is “shrink wrap material... configured to shrink in response to being exposed to heat” and Crook teaches heating until it “shrinks and thereby is secured adjacent the roof.” *E.g., id.*, ¶¶65, ¶¶7-8.

Primary Reference Crook (all Grounds, all Claims) is relied on for its teachings relating to assembling (off the roof) membrane strips into a sheet of heat-shrinkable film having leading/trailing edges; covering a storm-damaged roof with it; and heating it to conform with the roof, which shrinks it tight against the structure. EX1003, ¶¶88-95.

2. Kelly (EX1005)—art under at least pre-AIA §102(e)

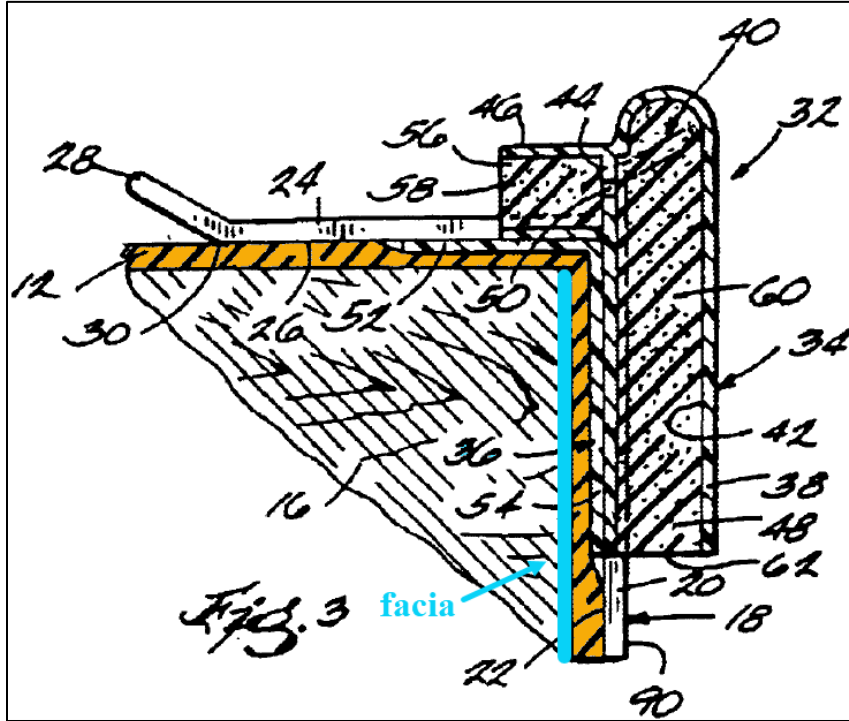
Kelly (filed in 2006) discloses “a hurricane resistant roof perimeter waterproofing system” using “stiff members encapsulated by the...waterproof membrane” and “fasteners... attach[ing] the stiff member to a structure of a building.” *E.g.*, EX1005, 1:41-58, 3:4-26, Figs. 2A (orange film (“membrane 44”) wrapped around red batten (“stiff member 40”)), 2B, 12; *id.* 3:31-41, 3:52-58, 7:42-49:



Secondary reference Kelly (Grounds 1-4, 7-8, all Claims) is relied on for its teachings concerning wrapping a roof covering's edges around a batten. EX1003, ¶¶96-101.

3. Inzeo (EX1006)—art under at least pre-AIA §§102(a)-(b), (e)

Inzeo (a patent issued in 2005) discloses a “fascia assembly” that “improve[s] [a roof’s] seal” and water-resistance. *E.g.*, EX1006, Abstract, 1:11-12, 1:38-42. Inzeo discloses attaching a “membrane” (orange) by clamping it “securely against the [blue] vertical face or surface of the nailer 16” (facia). *Id.*, 2:52-58, Fig.3:



Secondary reference Inzeo is (Grounds 1-4, 7-8, all Claims) is relied on for its teachings concerning attaching a roof covering to a facia. EX1003, ¶¶102-106.

4. Best (EX1007)—art under at least pre-AIA §102(e)

Best (filed April 18, 2007) teaches “heat-shrinkable films” prepared from LDPE resins (*e.g.*, EX1007, 1:61-2:23, 21:4-22:3) and used to wrap houses (*e.g.*, *id.*, 2:10-19, 15:8-19, 21:4-15).

Secondary reference Best (Grounds 1-2) is relied on for its teachings concerning Claim 1's heat-shrinkable film of LDPE including shrinking resins. EX1030, ¶¶45-53; EX1003, ¶¶107-109.

5. Lowe's (EX1016)—art under at least pre-AIA §§102(a)-(b)

Lowe's has been “available to anyone for viewing” on YouTube since September 28, 2006. *E.g.*, EX1016; EX1049, 3; EX1050; *see also* EX1029,1-2, 4-5 (Lowe's website archived August 2006 with video link to “Tarping Your Roof”). POSITA working on covering storm-damaged roofs would have been interested in and able to locate this video by (internet) searching, and would additionally have been familiar with and interested in Lowe's website as a resource for relevant information.

Lowe's discloses methods for roof-covering after a hurricane including “roll[ing]” tarpaulin ends “around [a] two-by-four and nail[ing] under [roof] e[ave[s]]” or (as shown below) to fascia. *E.g.*, EX1016-1, 00:09-00:25, EX1037, 4:12-14; EX1016-5, 00:28:



Secondary reference Lowe's (Grounds 5-6, 9-10, all Claims) is relied on (as an alternative to Kelly and Inzeo (applied in Grounds 1-4 and 7-8)) for its teachings concerning wrapping roof covering edges around a batten and attaching to fascia or under eaves. EX1003, ¶¶110-112.

6. Americover (EX1021)—art under at least pre-AIA §§102(a)-(b)

Americover is a webpage, available and archived by October 16, 2006, describing and offering heat-shrink-wrap products. EX1021, 1; EX1025, 1-2, 7-9. In June 2008, POSITA working on roof-covering projects with heat-shrinkable film would have been interested in and able to locate Americover by (internet) searching for roof-covering product suppliers. EX1003, ¶121; EX1044, 7.

Americover discloses “Heat Shrink Film[...] made using Low Density Polyethylene containing fractional melt virgin resins”; “[w]hen... subjected to heat,” it “shrinks in all directions” “allowing the film to mold itself to just about any surface” as a “skin-like protective covering.” *E.g.*, EX1021, 1. Disclosed uses of Americover’s heat-shrink film include “[p]rotection from the elements” of “[h]urricane and storm damaged structures” and acting as “covering” for “[b]uildings.” *E.g.*, *id.*

Secondary reference Americover (Grounds 3-6) is relied on (as an alternative to Best (applied in Grounds 1-2)) for its teachings concerning heat-shrinkable film of LDPE including for its teachings concerning shrinking resins and storm-damaged structures. EX1003, ¶¶122-125; EX1030, ¶¶54-58.

7. Vanderzee (EX1035)—art under at least pre-AIA §§102(a)-(b)

Vanderzee (a patent issued in 1987) teaches making wider plastic roof sheeting by joining lengths of narrower sheeting together off the roof (*e.g.*, EX1035, 2:31-48, 3:29-32) before the wider sheeting is “rolled up” and “transport[ed]” for use. *Id.*, 1:32-33, 2:31-63.

Secondary reference Vanderzee (Grounds 2, 4, 6, 8, 10, all Claims) is relied on for its teachings concerning performing the assembly of a sheet off the roof surface and rolling it up. EX1003, ¶¶113-120.

8. The Cited Art Is Analogous To '484

As discussed (§I.A), '484 “relates to protective covering of roofs and walls of a building....” *E.g.*, EX1001, Abstract, 1:15-18, cls.1-3. '484's named inventors endeavored to “address or... ameliorate” alleged “disadvantage[s]” of prior-art building-covering methods, including difficult-to-secure, heavy, expensive, and potentially-scarce “canvas”/“similar” tarpaulins; heavy, inconvenient, hard-to-manipulate rolls of covering film; working at elevated, slippery locations; and creating “slack or looseness” when attaching coverings by nails or staples. EX1001, 1:38-2:31.

Crook, Kelly, Inzeo, Best, Lowe's, Americover, and Vanderzee (like '484) each relate to systems and methods for covering buildings, including roofs, with appropriate (*e.g.*, water-resistant) protective materials, and are thus in the same field of endeavor as '484. *E.g.*, EX1003, ¶¶126-129; EX1004, Abstract, ¶¶2, 7-8, 41, 50-51, 65, 73, Figs.1, 2A-2B, 5; EX1005, 1:41-58, 3:4-26, Figs.2A-2B, 12, 3:31-41, 3:52-58, 7:42-49; EX1006, Abstract, 1:11-17, 1:38-42, 2:38-43, Fig.3; EX1007, 2:10-19, 15:8-35, 21:4-15; EX1035, 1:6-19, 2:23-68; EX1016; EX1021, 1. Accordingly, the references are analogous to '484 (and each other).

Additionally, each reference is reasonably pertinent to the particular problems '484's inventors faced, and thus analogous to '484. *E.g.*, EX1003, ¶¶130-131. Crook addresses, *e.g.*, a “need for improved...methods for protecting”

roofs. *E.g.*, EX1004, ¶1. Kelly, Inzeo, and Lowe’s concern ways to better secure roof coverings to prevent, *e.g.*, slack/looseness or tearing. *E.g.*, EX1005, 1:12-36, 3:3-47; EX1006, 1:15-18; EX1037, 3:19-4:19. And Best, Americover, and Vanderzee pertain to improved (*e.g.*, light, well-fitting, improved-convenience, transportable) materials and preparations for roof covering/“housewrap[ping].” *E.g.*, EX1007, 2:11-19; EX1021, 1; EX1035, 1:6-19, 2:23-68.

9. Claim Charts

Although Petitioner presents 10 grounds, each is based on one of two basic combinations: Crook in view of Kelly and Inzeo, or Crook in view of Lowe’s.¹⁴ These basic combinations are presented with and without Vanderzee,¹⁵ yielding four total grounds covering Claims 2 and 3. Because Claim 1 (unlike Claims 2-3) also requires LDPE with shrinking resins, additional references Best and Americover are presented as alternatives covering those additional requirements. *E.g.*, EX1003, ¶¶133, 222-223, 280-281.

¹⁴ In the child application the Examiner relied on the Kelly-Inzeo combination as covering a *wrapped batten attached to an eave or fascia* (§I.C); Lowes here discloses both limitations together.

¹⁵ The grounds without Vanderzee are presented including because they cover a narrower reading of “sheet.” *See* §§VI.A, VI.C.9.a (cl.1a(i)).

(a) Claim 1 (Grounds 1-6)¹⁶

Claim 1 ¹⁷	Prior Art
[1.pre] A method of providing covers over at least a portion of a roof of a storm	To the extent the preamble is limiting,¹⁸ Crook discloses it or renders it obvious for <u>Grounds 1-2</u>: Crook discloses a method of providing covers¹⁹ over at least a portion of a roof (e.g., “method of applying...a roof cover” comprising, e.g., “a plurality of membrane strips,” including “positioning a

¹⁶ To the extent claim terms in later limitations rely on earlier terms for antecedent basis (e.g., “the sheet,” *see infra* n.30, 31), such terms are disclosed or rendered obvious for the reasons given when they are first analyzed in the Grounds herein.

¹⁷ The Claim Appendix identifies labeled claim elements.

¹⁸ *See, e.g., Micron Tech., Inc. v. Netlist, Inc.*, IPR2022-00418, Pap.30, 27 n.9 (Aug. 28, 2023).

¹⁹ “Providing covers...” includes providing a strip or strips, or a sheet or sheets of material over part of a roof. EX1003, n.6. If PO argues this term is limited to any of those meanings, each is disclosed or at minimum rendered obvious in Grounds 1 to 6. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *see* cl.1.pre and cl.1a(i).

Claim 1 ¹⁷	Prior Art
damaged built structure comprising the steps of:	first end of at least a portion of a roof cover so that the first end extends adjacent (and preferably over) a first edge of a roof and so that the first end is held in place adjacent the first edge” and “positioning the second end of the roof cover so that the second end of the roof cover extends adjacent (and preferably over) a second edge of the roof”) of a storm damaged built structure (<i>e.g.</i>, “roofs of building structures” in need of “repair,” including those “severely damaged when exposed to high-wind conditions, such as those associated with hurricanes and tornados... [and other] storm conditions.”). <i>E.g.</i>, EX1003, ¶¶134-142, 149, pp.156-158; EX1004, Abstract, ¶1 (“Building structures are often <i>severely damaged when exposed to high-wind conditions, such as...hurricanes and tornados.... need for improved apparatuses and methods for protecting the roofs of building structures from storm conditions.</i>”), ¶2 (“A protective roof cover according to one embodiment of the invention comprises <i>a membrane that is adapted to cover at least a portion of the roof of a building structure</i>”), ¶73 (“<i>[r]oof covers...for securing roofs during roof repair</i>”), ¶¶6-8, ¶60, ¶65 (“method of applying such a <i>roof cover [‘roof cover compris[ing] shrink wrap material’]...positioning a first end of at least a portion of a roof cover so that the first end extends adjacent (and preferably over) a first edge of a roof</i> and so that the first end is held in place adjacent the first edge...<i>positioning the second end of the roof cover so that the second end of the roof cover extends adjacent (and preferably over) a second edge of the roof</i>”), ¶67 (“... plurality of membrane strips... <i>the strips are laid side by side and are attached together by lengths of tape.</i>”). POSITA would have understood Crook’s discussions of, <i>e.g.</i>, “severe[] damage [from] high-wind conditions...” and the associated “need for improved... methods for protecting... roofs,” and of using its roof covers “for securing roofs during roof repair,” to be a disclo-

Claim 1 ¹⁷	Prior Art
	sure of using its roof covers to secure roofs being repaired due to damage by storms. EX1004, ¶¶1, 22, 25-26, 72-73; EX1003, ¶141; <i>see also, e.g.</i>, EX1011, 285, 288-290. Alternatively, given these teachings, if argued further disclosure of a storm damaged built structure is required, Crook at minimum renders obvious a storm damaged built structure (Grounds 1-2). POSITA would have been motivated and found it obvious, straightforward, and advantageous to implement Crook’s teachings to provide covers over at least a portion of a roof of a storm damaged built structure. EX1004, ¶¶22, 73; EX1003, ¶142. Doing so would advantageously secure the roof of a storm damaged structure from further damage by weather conditions, as taught by Crook. <i>E.g.</i>, EX1004, Abstract, ¶¶1, 22, 73; EX1003, ¶142. For POSITA, particularly in light of these teachings, this would have been an obvious, routine implementation choice and clear this would work, predictably yielding the expected functionality with reasonable expectation of success (“REOS”). EX1003, ¶142.

Claim 1 ¹⁷	Prior Art
	Crook in view of Americover also renders obvious this limitation, including in particular a storm damaged built structure for which Petitioner relies on Americover for <u>Grounds 3-6</u>: Americover discloses protecting storm damaged built structures (e.g., providing “[p]rotection from the elements” to “[h]urricane and storm damaged structures”). <i>E.g.</i>, EX1003, ¶¶144-149, pp.159-160; EX1021, 1 (“protective covering”; “Exterior and interior covering”: “Buildings, scaffolding, bridges, and ships”; “Protection from the elements”: “Jobsite materials”; “Restoration projects”; “Hurricane and storm damaged structures”). POSITA would have been motivated and found it obvious, straightforward, and advantageous to implement Crook’s teachings above of providing covers over at least a portion of a roof on a built structure using Americover’s advantageous teachings of protecting storm damaged roofs. EX1003, ¶148. POSITA would have recognized that doing so would advantageously protect the damaged roof and underlying structure from further damage. For POSITA, this would have been an obvious, routine implementation choice and (particularly given their express disclosures) clear this

Claim 1 ¹⁷	Prior Art
	would work, predictably yielding the expected functionality with REOS. EX1003, ¶148. If PO argues that “covers” in the preamble is limiting and requires a strip, multiple strips, or a sheet: (1) Crook discloses each of (i) a strip, (ii) multiple strips, and (iii) a sheet over at least a portion of a roof (Grounds 1, 3, 5) (<i>see</i> cl.1a(i)); and (2) Crook in view of Vanderzee renders obvious each of (i) multiple strips and (ii) a sheet over at least a portion of a roof (Grounds 2, 4, 6) (<i>see</i> cl.1a(i)). If PO argues that “covers” in the preamble requires multiple “sheets,” this is also rendered obvious by Crook. EX1003, ¶143. POSITA would have been motivated and found it obvious, straightforward, and advantageous to implement Crook’s teachings (Grounds 1, 3, 5) or Crook in view of Vanderzee’s combination (Grounds 2, 4, 6) using Crook’s teachings of using multiple pieces of sheeting, particularly where the size of the damaged portion of the roof was larger than one sheet. EX1003, ¶143. For POSITA, using multiple sheets would have

Claim 1 ¹⁷	Prior Art
	been an obvious, routine implementation choice, and clear this would work, predictably yielding the expected functionality with REOS. EX1003, ¶143.
[1.a(i)] applying a	Crook discloses or renders obvious²¹ this limitation for Grounds 1, 3, 5:

²¹ From reading Crook POSITA would have at once envisaged a method for covering roofs with sheets that employs each of the Crook teachings cited herein, including making the roof cover out of a sheet/membrane formed from a plurality strips by laying the strips side-by-side and attaching them with tape (EX1004, ¶67). *See, e.g., Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015). To the extent it is argued POSITA instead would somehow have considered these separate, unjoined teachings, POSITA would at minimum have found it obvious to combine them as described herein with a REOS, including because Crook explicitly teaches that each of them is an available design choice for its disclosed roof covering method. For example, when Crook teaches positioning the shrink-wrap roof cover over the roof (*e.g.*, EX1004, ¶¶7-8, 65) (*see* cl.1.a(i)), for

Claim 1 ¹⁷	Prior Art
sheet ²⁰ of heat shrinkable film over the portion of the roof, the	In Crook’s Off-The-Roof Method,²² Crook discloses applying (<i>e.g.</i> , “positioning” a first end of the roof cover adjacent or over a first edge of the roof, holding the first end in place adjacent to the first edge of the roof, “pulling the roof cover” so that it is placed in tension, and then “positioning” the second end of the roof cover adjacent or over a second edge of the roof) a sheet of heat shrinkable film (<i>e.g.</i> , “roof cover compris[ing] shrink wrap material that is configured to

POSITA it would at minimum have been obvious to use Crook’s roof-cover resulting from its disclosed assembly method with side-by-side taped strips (*e.g.*, EX1004, ¶67). EX1003, n.8.

²⁰ The plain and ordinary meaning of “applying a sheet” is that the action (applying) is performed on the fully-assembled “sheet,” not individual, unassembled lengths/strips. EX1003, n.7

²² For this method (referred to herein as the “Off-The-Roof Method”), Crook teaches laying a “plurality of membrane strips” side by side and “attach[ing] [them] together by lengths of tape,” to form a “membrane.” EX1004, ¶67. Crook teaches using a single “membrane” (made of the plurality of taped together membrane strips) as a “roof cover.” *E.g.*, EX1004, ¶60. Using the “Off-The-Roof Method,” Crook teaches covering the roof by “positioning” the ends of this assembled “roof cover.” EX1004, ¶¶7-8; EX1003, n.9; *accord*, EX1004, ¶65.

Claim 1 ¹⁷	Prior Art
sheet having a leading edge and a trailing edge	shrink in response to being exposed to heat,” where the cover includes “strips” that have already been “attached together by lengths of tape”²³ (including “water-resistant tape”)) over the portion of the roof (see Cl.1.pre), the sheet having a leading edge (e.g., “a first end of at least a portion of a roof cover”) and a trailing edge (e.g., a “second end of the roof cover”). E.g., EX1003, ¶¶150-157, 174, pp.160-164; e.g., EX1004, Abstract (“The membrane... <i>shrink wrap</i>”), ¶2, ¶7 (“... <i>covering substantially the entire upper surface of the roof with the roof cover comprises: (A) positioning the first end of the roof cover so that the first end of the roof cover extends over a first edge of the roof... pulling the roof cover so that the intermediate portion of the roof cover is placed into tension... positioning the second end of the roof cover so that the second end of the roof cover extends over a second edge... the roof cover may comprise, for example, shrink wrap or stretch wrap.</i>”), ¶8, ¶35 (“roof cover... comprised of at least one sheet of material that is <i>substantially impermeable to water...</i>”), ¶60, ¶65, ¶67 (“... <i>the strips are laid side by side and are attached together by lengths of tape.</i>”; “strips do not overlap substantially”), ¶70 (“kit... includes at least one roof <i>membrane</i> supply roll 520... <i>water-resistant tape</i> 580, a roller... a knife”). Crook teaches laying a “plurality of membrane strips” side by side and “attach[ing] [them] together by lengths of tape,” to form a “membrane.” EX1004, ¶67; EX1003, ¶157. Crook also teaches using a single “membrane” (made of the plurality of taped together membrane strips) as a “roof cover.” E.g., EX1004, ¶60; EX1003, ¶157.

²³ Crook teaches a “sheet”: a single-membrane “roof cover” that is an assembly of two or more membrane strips. E.g., EX1004, ¶¶4, 60, 65, 67; EX1003, n.10.

Claim 1 ¹⁷	Prior Art
	POSITA would have understood Crook’s teachings of “positioning” the ends of the roof cover, which is made of a plurality of membrane strips (which “do not substantially overlap”) taped together along their sides, including with “water-resistant tape”—yielding, <i>e.g.</i>, a “sheet...substantially impermeable to water and/or...wind”—to mean that the roof cover is first assembled (by joining together the plurality of membrane strips) off the roof surface and then subsequently raised and applied to the roof. EX1004, ¶¶7-8, 35, 65, 67, 70; EX1003, ¶157. Crook²⁴ in view of Vanderzee also renders obvious this limitation based on the same Crook disclosures above in addition to the Vanderzee disclosures below, including in particular performing the assembly of a sheet from strips off the roof surface (before placement on the roof) for which Petitioner relies on Vanderzee for <u>Grounds 2, 4, 6</u>: Vanderzee discloses performing the assembly of parallel strips of plastic (<i>e.g.</i>, performing the assembly of “two sheets together along

²⁴ See n.21.

Claim 1 ¹⁷	Prior Art
	common edges”) for a roof (e.g., “[r]oofing applications”) off the roof surface (e.g., sheet is assembled before being “transport[ed]” for use). E.g., EX1003, ¶¶158-167, 174, pp.164-167; EX1035, Abstract, 1:5-12 (“... 100 foot wide sheets of plastic materials are prohibitively expensive.”); 1:13-19 (“Roofing applications typically require 50 to 100 foot wide rolls.”); 2:31-39 (joining “two sheets together along common edges”), 2:61-64 (“formed sheets are rolled up with the seam perpendicular to the axis of the roll thus making this sheet construction practical for storage and transportation.”), 2:64-65 (“...when the formed sheet is used in for example a roof”), 3:29-32 (joining “a first sheet 11 and a second sheet 12 along longitudinal edges 14 and 15 respectively to form a longitudinal seam”): POSITA would have been motivated and found it obvious, straightforward, and advantageous to implement Crook’s teachings of assembling the roof cover by taping non-overlapping strips together, using Vanderzee’s advantageous teachings of performing the assembly off the roof surface. EX1035, 2:31-64; EX1003, ¶163. Using Vanderzee’s teachings of joining plastic sheeting (resulting from taping as described in Crook) off the roof would be more convenient than taping or otherwise adhering lengths of narrow sheeting together while on the angled roof, and that the wider sheeting prepared off the roof (including off site) would be of better quality, e.g., have better sealed seams. EX1003, ¶164. Moreover, POSITA would have been motivated to perform the assembling operations off the roof

Claim 1 ¹⁷	Prior Art
	because it would be impractical to form a water-/wind-resistant membrane made up of strips continuously taped together while on a roof and because performing these operations off the roof significantly increases freedom of movement and positioning, decreases time and the number of operations taking place on the roof, and thus increases safety and ease of installation. EX1003, ¶164.²⁵ Further, POSITA would have been motivated to perform those operations off the roof if, <i>e.g.</i>, the roof had severe damage or the severity of the roof damage could not be ascertained. A POSITA would have been particularly

²⁵ POSITA would have understood that using tape to join strips of heat shrinkable film, as Crook teaches, did not impact the film’s ability to shrink and conform to the roof surface after heating, and that heat shrink tape was known. *E.g.*, EX1003, n.12; EX1004, ¶¶66-67; *see also, e.g.*, EX1040 (Americover website FAQ page referring to “Heat Shrink Tape” to be used with heat shrinkable film). Indeed, the ’484 patent itself refers (without any further explanation or disclosure) to taping together lengths of heat shrinkable film before heating the assembled sheet to shrink and conform to the roof. EX1001, 7:26-33; EX1003, n.12.

Claim 1 ¹⁷	Prior Art
	motivated to use a pre-assembled roof cover for jobs involving large roofs, to reduce the time and operations performed on the roof. EX1003, ¶164. In addition, performing those sheet-assembly operations off the roof facilitates performance of the same steps and leads to the same end result with added ease of installation benefits for those performing the method and therefore would have been obvious to try. EX1003, ¶165. Further, forming a water-resistant membrane by taping strips together off the roof would be beneficially facilitated using machinery to join the strips together, without requiring (as assembly on the roof would) that such machinery be moved to and operated on the rooftop or imposing limits on the parameters (<i>e.g.</i>, size, shape and weight) of such machinery that was practically and safely used for this purpose. EX1003, ¶166. For POSITA, particularly in light of these teachings (including the explicit disclosures in both references of longitudinally joining parallel strips into a wider sheet), assembling the sheet off the roof and then lifting the sheet to the roof surface for positioning would have been an obvious, routine implementation choice

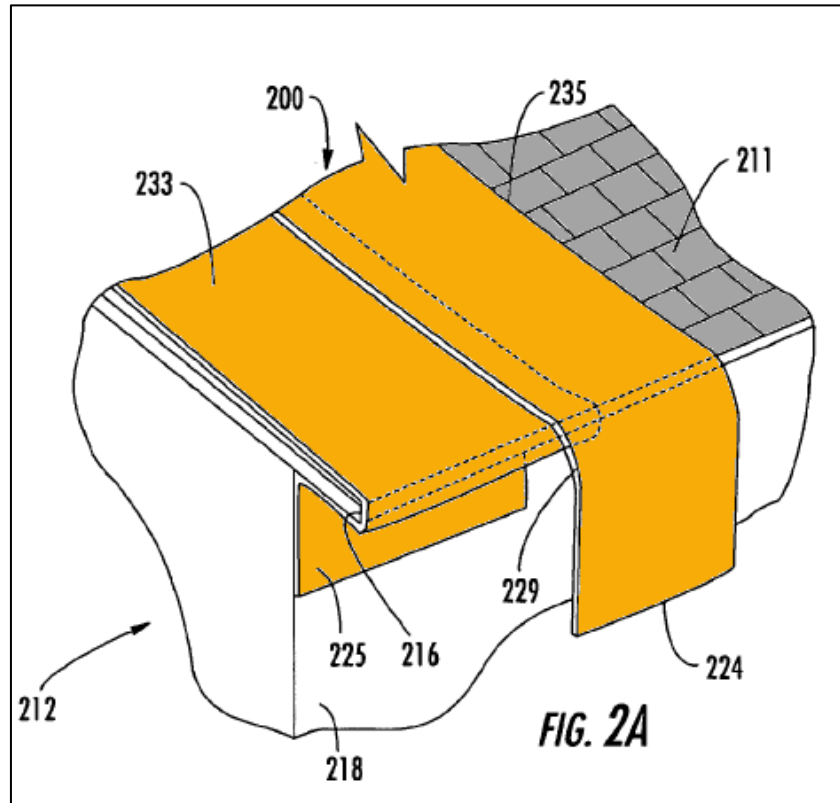
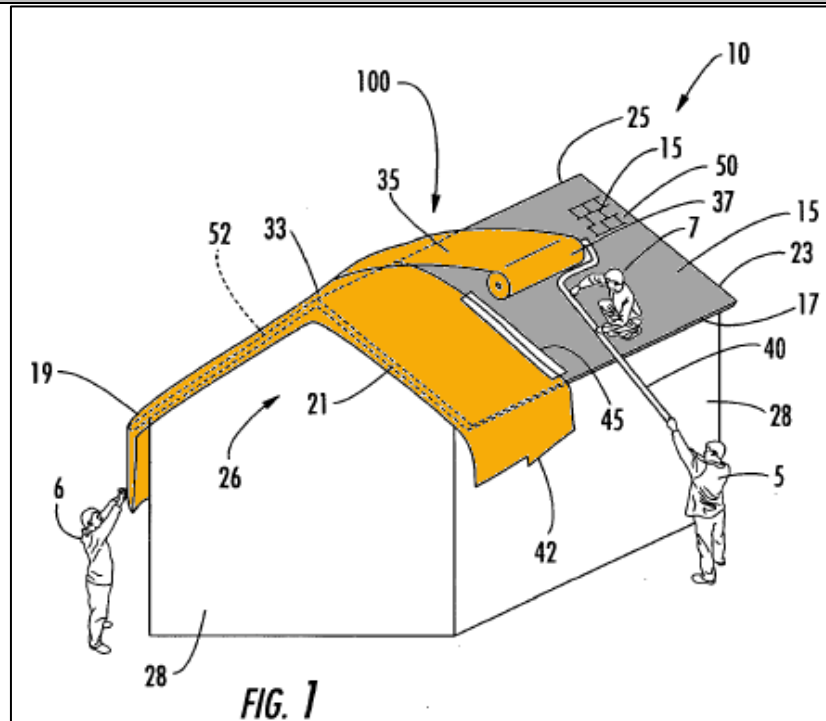
Claim 1 ¹⁷	Prior Art
	and clear this would work, predictably yielding the expected functionality with REOS. EX1003, ¶166. <u>Grounds 1, 3, 5:</u> Additionally, to the extent the claim limitation is interpreted more broadly such that the limitation includes joining strips of film (having leading and trailing edges) together to form a sheet on the roof (as opposed to assembling a sheet (having a leading and trailing edge) prior to applying the sheet over the roof), Crook discloses such a method (as the examiner properly found applying BRI, as opposed to <i>Phillips</i>). E.g., EX1003, ¶167, pp.167-172; EX1002, 263-264, 214, 177, 128-130; EX1011, 285, 288, 290; EX1012, 276 (same). Indeed, in Crook’s On-The-Roof Method,²⁶ Crook discloses cutting a required number of strips from a roll, wherein the strips are of sufficient length to extend

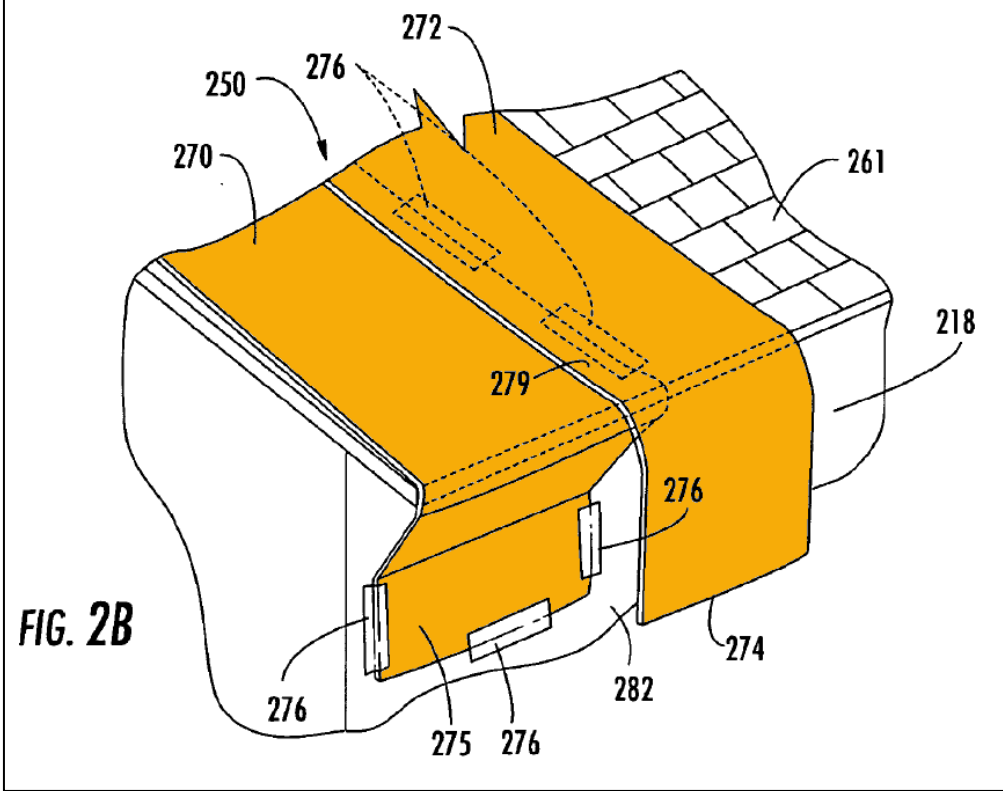
²⁶ For this method (referred to herein as the “On-The-Roof Method”), Crook teaches assembling the “sheet” on the roof. EX1004, ¶¶46-52, 66, Fig.1.

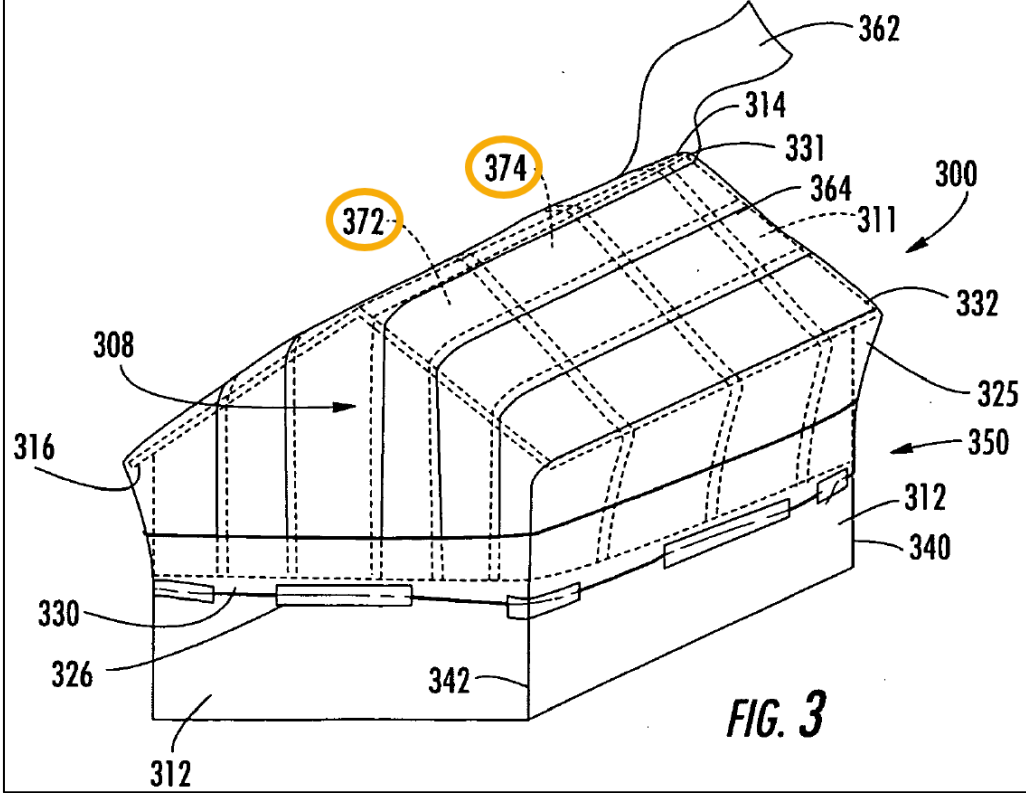
Claim 1 ¹⁷	Prior Art
	from one end of roof structure to an opposite end thereof; positioning the strips over the roof structure by attaching a leading edge of a strip to a first edge of the roof structure and attaching a trailing edge of the strip to a second edge of the roof structure which is opposite the first edge; applying multiple strips to the roof structure with overlapping portions between adjacent strips; and applying adhesive tape to the overlapping portions such that the strips are assembled into a sheet on the roof (<i>e.g.</i>, Figs. 1, 2A-B, and 3; On-The-Roof Method described in ¶¶46-52, 66). <i>E.g.</i>, EX1003, ¶¶167-172; EX1004, ¶26, ¶29, ¶30, ¶37, ¶¶46-52, ¶60 (“roof cover... comprising <i>one</i> to three membranes”), ¶66, Figs. 1, 2A-B, 3:

Claim 1¹⁷

Prior Art



Claim 1 ¹⁷	Prior Art
	 FIG. 2B

Claim 1 ¹⁷	Prior Art
	 FIG. 3 Grounds 1, 3, 5: Because PO asserts in litigation that the claimed “sheet” includes a single strip of film and does not require that two strips of film be connected (EX1036, ¶¶39-44), PO here should not be heard to assert here that a sheet requires more than one strip of film. <i>E.g., CommScope Techs. LLC v. Dali Wireless Inc.</i>, 10 F.4th 1289, 1299 (Fed. Cir. 2021). For the reasons above, Crook discloses applying a “sheet” (using this broader interpretation) of heat shrinkable film over the portion of the roof, the

Claim 1 ¹⁷	Prior Art
	sheet having a leading edge and a trailing edge. <i>E.g.</i>, EX1003, ¶173, p.172.
[1.a(ii)] the sheet...be- ing a film of low density polyeth- ylene in- cluding shrinking resins;	Crook in view of Best renders this limitation obvious in <u>Grounds</u> 1-2: As discussed immediately below, Best discloses heat shrinkable films of low density polyethylene including shrinking resins (<i>e.g.</i>, “heat-shrinkable films” prepared using Best’s non-linear low density polyethylene resins (with or without linear low density polyethylene resins)). <i>See, e.g.</i>, EX1003, ¶¶175-180, 185, pp.172-174; EX1030, ¶¶25, 45-53, 59; EX1007, 1:61-2:23, 15:8-19, 21:4-22:3, 23:13-18. POSITA implementing Crook would have been motivated to identify a specific heat shrinkable wrap to use based on Crook’s teachings about the use of (unspecified) shrink wrap material (<i>e.g.</i>, EX1004, ¶65). <i>E.g.</i>, EX1003, ¶¶178. Best teaches shrink wraps of low density polyethylene including shrinking resins to be beneficial as a heat shrinkable wrap, including for use as a “housewrap.” <i>E.g.</i>, EX1007, 2:10-19, 15:8-19; 21:4-15; EX1030, ¶¶37, 45-48. It would have been obvious, straightforward, and advantageous to implement Crook’s heat shrinkable wrap using Best’s advantageous teachings of utilizing heat shrinkable wrap of low density polyethylene including shrinking resins. EX1003, ¶178; EX1030, ¶¶37, 45-48. As discussed below,

Claim 1 ¹⁷	Prior Art
	Best discloses films of LDPE including shrinking resins, such as films of non-linear LDPE (alone or in a blend with linear LDPE resins). EX1030, ¶45. Each of these two examples of Best’s films of non-linear LDPE would have been an obvious choice for POSITA in appropriate circumstances. EX1030, ¶46-48. Depending on the POSITA’s budget and other design priorities, POSITA with a lower budget less concerned about the film’s long-term durability would have been motivated to use a heat shrinkable film made of only non-linear LDPE resins for cost reasons. EX1030, ¶46. POSITA with a higher budget seeking a more durable film would have been motivated and found it obvious, straightforward, and advantageous to implement Crook using Best’s teachings of films using non-linear LDPE blended with linear LDPE. EX1030, ¶¶47; EX1007, 21:21-25, 21:53-60, 21:61-22:3, 22:4-12, 23:13-18, Tables 2-3, 13, 15-18, 21-23 (showing “shrink” properties of blends of linear and non-linear LDPE resins); <i>see also</i>, <i>e.g.</i>, EX1038, 14, 68; EX1039, 15. POSITA would thus have been motivated and found it obvious to implement Crook using the teachings of each of these two implementation choices disclosed in Best

Claim 1 ¹⁷	Prior Art
	(<i>i.e.</i>, it would have been obvious to implement Crook using Best’s teachings of a film of non-linear LDPE resins made without LLDPE resins, and it would have been obvious to implement Crook using Best’s teachings of a film of non-linear LDPE resins blended with LLDPE resins) depending on the circumstances. EX1003, ¶¶179-180; EX1030, ¶¶46-48. It would have been routine and obvious to make each of these as an implementation choice, and clear either would work and provide the expected functionality to yield predictable results with REOS. EX1003, ¶181; EX1030, ¶48. Best’s Disclosure of Heat Shrinkable Films Made of Non-Linear LDPE Including Shrinking Resins. Best discloses films of non-linear LDPE resins (with²⁷ and without LLDPE resins) including shrinking resins. EX1030, ¶¶49-51. For example, Best discloses that the main structural component of “typical” industrial heat shrinkable films is “high pressure, low density polyethylene (LDPE), often

²⁷ Blending resins that include both non-linear and linear LDPE resins results in a film of non-linear and linear low density polyethylenes. *E.g.*, EX1030, ¶¶37, 49.

Claim 1 ¹⁷	Prior Art
	blended with up to about 30 weight percent of linear low density polyethylene (LLDPE) to reduce problems of hole formation during shrinkage.” EX1007 (Best), 21:17-25, 1:61-2:9 (blends); EX1030, ¶¶49-50. POSITA would have understood Best’s discussion of “typical” industrial heat shrinkable films made of LDPE and statement that they are “often” blended with LLDPE as an affirmative disclosure of films of only non-linear LDPE and films of non-linear LDPE blended with linear LDPE. EX1030, ¶49. POSITA would have understood these heat shrinkable films of only non-linear low density polyethylene resins and the blends both to include “shrinking resins.” EX1030, ¶25, 51. Indeed, POSITA would have recognized Best’s teachings that its resins and resin blends provide “improved shrink properties” to be a disclosure of “shrinking resins.” EX1030, ¶51; <i>e.g.</i>, EX1007, 23:13-23, 21:53-60. Inherency of “Shrinking Resins” In Best’s Non-Linear LDPE Film. If argued that “shrinking resins” is not explicitly disclosed in

Claim 1 ¹⁷	Prior Art
	Best, at a minimum, POSITA would have understood that these polyethylene resins described in Best are “shrinking resins” because these resins provide the shrinking properties of the film after processing. EX1030, ¶52. Therefore, at a minimum, POSITA would have understood that films of non-linear LDPE (with and without LLDPE resins) that are heat shrinkable (as Best describes) are necessarily (and thus inherently) made of “shrinking resins” because creating polyethylene film that shrinks necessarily involves processing the polyethylene resins in a way that orients and stresses the molecules that make up the resins to provide the shrinking properties of the film when it is later heated (and this stress is released, thus shrinking the film). EX1030, ¶52; EX1038, 41. Obviousness of “Shrinking Resins” In Best Non-Linear LDPE Film. If it is argued that “shrinking resins” is not disclosed (expressly or inherently) in connection with Best’s disclosure of a heat shrinkable film of non-linear LDPE resins (with and without blended LLDPE resins), based on these same disclosures it would at minimum have

Claim 1 ¹⁷	Prior Art
	been obvious to implement Best using shrinking resins, beneficially providing Best’s disclosed heat shrinkable properties using a known and readily-implementable technique. EX1030, ¶53. Such heat shrinkable capabilities were already disclosed in Best itself. <i>E.g.</i>, EX1030 ¶53; EX1007, 21:7-9. For POSITA it would have been routine and obvious to make such an implementation choice, and clear it would work and provide the expected functionality of a heat shrinkable film that could be put into practical use for, <i>e.g.</i>, a roof cover, and would yield predictable results of a film that shrinks upon the application of heat, with REOS, when put in practical use for, <i>e.g.</i>, a roof cover. <i>E.g.</i>, EX1030 ¶53; <i>see also</i> EX1002, 215, 177; EX1011, 288-289 (“there must be some polymeric component in [Best’s] blend which shrinks in order to form a shrink wrap film”); EX1012, 280-281. *** Crook in view of Americover also renders obvious a sheet being a film of low density polyethylene including shrinking resins. EX1003, ¶¶182-185. (Grounds 3-6).

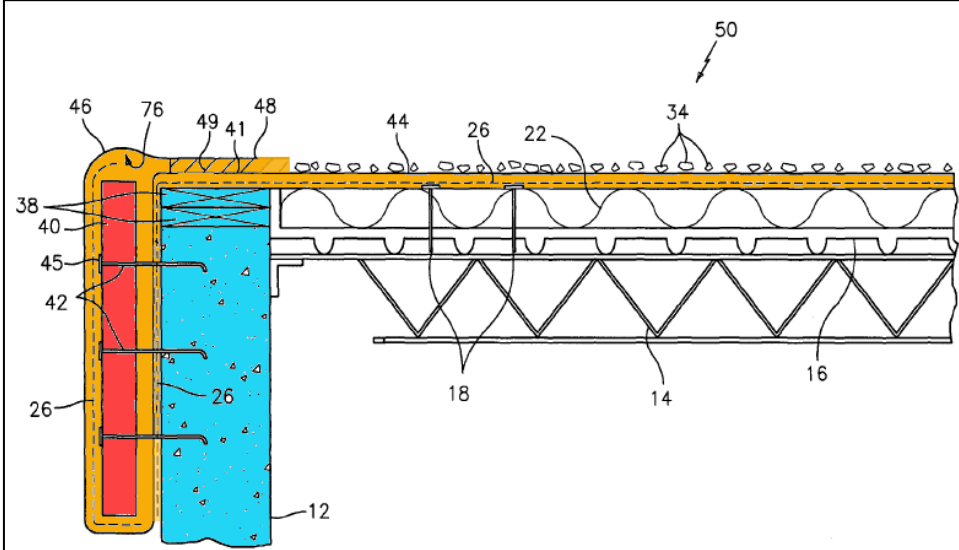
Claim 1 ¹⁷	Prior Art
	As discussed immediately below, Americover discloses heat shrinkable films of low density polyethylene including shrinking resins (<i>e.g.</i>, “Heat Shrink Films” “made using Low Density Polyethylene containing fractional melt virgin resins and other additives” and “shrinks in all directions” when heated; “biaxial shrinking process”; “will shrink 20-25%”). <i>E.g.</i>, EX1003, ¶¶182-185, pp.175-176; EX1030, ¶¶25, 54-59. EX1021, 1. Crook teaches the use of a heat shrinkable wrap, but does not explicitly disclose the details regarding the composition of that wrap. POSITA would have been motivated to identify a specific heat shrinkable wrap to use to implement Crook’s teachings about the use of heat shrinkable material (<i>e.g.</i>, EX1004, ¶ 65). EX1003, ¶184. Americover teaches shrink wrap of low density polyethylene including shrinking resins to be beneficial as a heat shrinkable wrap, including to protect houses after hurricanes. <i>E.g.</i>, EX1021, 1; EX1030, ¶¶36, 56. It would have been obvious, straightforward, and advantageous to implement Crook’s heat shrinkable wrap using Americover’s advantageous teachings of utilizing low density polyethylene processed into a heat shrinkable film. EX1003, ¶184; EX1030, ¶¶36, 56. For POSITA, it would have been an obvious, routine implementation choice and clear

Claim 1 ¹⁷	Prior Art
	this would work, predictably yielding the expected functionality with REOS. EX1003, ¶184. Americover’s Disclosure of Heat Shrinkable Film of LDPE Including Shrinking Resins. POSITA would have understood that Americover’s disclosures above, including its discussion of its heat shrink film being “made using Low Density Polyethylene containing fractional melt virgin resins,” to be a disclosure of heat shrinkable film of low density polyethylene including “shrinking resins.” EX1030, ¶¶25, 54-57. POSITA would have understood that Americover’s disclosed “resins” are “shrinking resins,” given its teachings that its “formulations” provide the film with its shrinking properties, which shrinking properties POSITA would have understood were provided by the resins after processing. <i>E.g.</i>, EX1030, ¶¶25, 57; EX1021, 1. Obviousness of “Shrinking Resins” In Americover. If argued that “shrinking resins” is not disclosed in Americover, based on these

Claim 1 ¹⁷	Prior Art
	same disclosures it would at minimum have been obvious to implement Americover’s disclosures of heat shrinkable films using shrinking resins for the reasons discussed above for Best. <i>See supra</i>, 49-54; EX1030, ¶58.
[1.b] wrapping portions of the leading edge around a first batten and attaching the first batten to an underside of a first eave or to a fascia of the	Crook in view of Kelly and Inzeo renders this limitation obvious in <u>Grounds 1-4</u>: Crook discloses²⁸ attaching portions of the leading edge (see cl.1a(i)) to the built structure adjacent to the roof edge (e.g., “positioning a first end of at least a portion of a roof cover so that the first end extends adjacent (and preferably over) a first edge of a roof and so that the first end is held in place adjacent the first edge”). E.g., EX1003, ¶¶186-189, 206, pp.176-177; EX1004, ¶7, ¶29 (“<i>the membrane strips 233, 235 may be attached adjacent the roof 211 by stretching the membrane strips 233,235 over an edge... and against a vertical wall 218 adjacent the roof 211. The ends of the membrane strips 233, 235 may then be secured in place adjacent the vertical wall 218 with fasteners....</i>”), ¶37, ¶44 (“attaching the end of the membrane... adjacent a portion of the roof...”); ¶49 (“secur[ing] the

²⁸ Although Crook discloses both assembling a sheet off the roof (Off-The-Roof Method) and on the roof (On-The-Roof Method), there is no distinction between the methods with respect to how the sheet is attached to the roof. POSITA would have understood the disclosures in Crook of attaching the sheet or sheeting to the roof in Crook as applying regardless of where the sheet is assembled. EX1003, n.16.

Claim 1 ¹⁷	Prior Art
built structure;	cut end of the first membrane strip 33 to the wall by using a fastener...”), ¶50, ¶60, ¶65 (“method of applying such a <i>roof cover</i> [<i>roof cover compris[ing] shrink wrap material</i>]...<i>positioning a first [and second] end of at least a portion of a roof cover so that the first end extends adjacent (and preferably over) a first [or second] edge of a roof</i> and so that the first end is held in place <i>adjacent the first edge...</i>”), ¶67. Crook in view of Kelly and Inzeo renders obvious wrapping portions of the leading edge around a first batten and attaching the first batten to an underside of a first eave or to a fascia of the built structure in <u>Grounds 1-4</u>: Kelly discloses wrapping a roof covering’s edge around a batten (e.g., “extend[ing] [a waterproof membrane] beyond the wall 12 far enough to have a wrap portion 46 of the membrane 44 back wrap around a stiff member 40 [i.e., a batten] and allow an interior edge 48 to lay back upon a membrane portion 41 of the membrane 44,” “encapsulating the stiff member 40 within the waterproof membrane 44”; Figs. 2A-2B ((orange) roof covering’s edge and (red) batten)) and attaching it to a built structure (e.g., “fasteners 42 in this embodiment attach the encapsulated stiff member 40, which lies flush with a surface of the wall 12, to the building structure of the wall 12”; Figs. 2A-2B). E.g., EX1003, ¶¶190-194, 199, 206, pp.177-182; EX1005, 2:62-3:26 (“extend[ing] [the membrane] beyond the wall 12 far enough to have a wrap portion 46 of the membrane 44 back wrap around a stiff member 40 [i.e., a batten] and allow an interior edge 48 to lay back upon a membrane portion 41 of the membrane 44... encapsulating the stiff member 40 within the waterproof membrane 44... fasteners 42 in this embodiment <i>attach the encapsulated stiff member 40, which lies flush with a surface of the wall 12, to the building structure of the wall 12</i>”), Fig. 12, 3:31-41 (“... <i>membrane portion 46 is retained uniformly...</i> prevents the formation of any local stress risers.... Additionally, <i>by being sealed in a waterproof</i>

Claim 1 ¹⁷	Prior Art
	<i>envelope created by the encapsulating membrane portion 46 the stiff member 40 will remain dry; preventing it from rotting.”), 3:52-62, 7:42-49, Figs. 2A-2B:</i>  FIG. 2A Inzeo discloses attaching a roof covering (e.g., a membrane) to a fascia of a roof (e.g., “the extending portion of the membrane 12 can be secured against the vertical face of the nailer 16” (fascia) using a “fascia assembly”). E.g., EX1003, ¶¶195-198, 200, 206, pp.179-182; EX1006, 2:38-43 (“the extending portion of the membrane 12 can be secured against the vertical face of the nailer 16”), 2:52-54, 4:7-20 (“<i>fascia assembly</i> 10... for clamping the edge of the rubber membrane 12 against the surface of the roof 14....”), Figs. 1 and 3 ((orange) roof covering and (blue) fascia):

Claim 1 ¹⁷	Prior Art
	 Fig. 3 facia
	It would have been obvious, straightforward, and advantageous to implement Crook’s disclosure of securing the leading edge of the sheet using Kelly’s advantageous teachings of wrapping an edge of material around a batten to fasten waterproof membranes on roof structures. EX1003, ¶199; EX1005, 3:4-26, 3:31-47, 3:52-58, 7:42-49, Figs.2A-2B, 12. Wrapping the film around a batten, as taught in Kelly, to implement Crook’s teachings to use an “appropriate fastening device” (rather than Crook’s examples of tape, nails, clips, or clamps (EX1004 ¶49)), would have uniformly distributed the load on the film associated with the attachment over a larger area,

Claim 1 ¹⁷	Prior Art
	thereby reducing stress and the risk of tearing of the film. Batten-wrapping would also better seal the film's edge and the surface to which the batten is attached. EX1003, ¶199; EX1005, 3:31-47, 3:52-58. For POSITA it would have been an obvious, routine implementation choice and clear it would work, predictably yielding the expected functionality with REOS. EX1003, ¶199. It would have been obvious, straightforward, and advantageous to implement the combination of Crook and Kelly using Inzeo's advantageous teaching of using the fascia as the attachment point. EX1003, ¶200. Crook describes attaching the roof membrane "adjacent" to the portion of the roof including, <i>e.g.</i>, on the vertical wall (<i>e.g.</i>, EX1004, ¶65). EX1003, ¶200. Attaching the membrane on the fascia, as taught in Inzeo, to implement Crook's teachings to attach adjacent to the portion of the roof (rather than on another surface such as the vertical house wall), would advantageously have required less membrane material while still protecting the entire roof surface, as well as the edge of the roof between the roof and fascia. EX1003, ¶200. Additionally, POSITA would have understood that the fascia

Claim 1 ¹⁷	Prior Art
	material is frequently an easier surface to secure something to by nailing, as compared to the vertical surface of a house which may be made of, <i>e.g.</i>, brick, and would create more visible unsightly holes after removal of the material. EX1003, ¶200. Additionally, attachment to the fascia or the underside of the eaves would have been an obvious choice for POSITA where, <i>e.g.</i>, there was damage to the roof and walls, making attachment to those locations more difficult. For POSITA it would have been an obvious, routine implementation choice and clear it would work, predictably yielding the expected functionality with REOS.²⁹ EX1003, ¶200; <i>see also, e.g.</i>, EX1011, 286-287, 289-290; EX1012, 278-279. Crook in view of Lowe’s also renders obvious wrapping portions of the leading edge around a first batten and attaching the first

²⁹ This is consistent with Petitioner’s position in prosecuting one of Petitioner’s patents, where the art-of-record failed to disclose attachment at the fascia, and Petitioner argued that “better waterproofing” was not a known benefit of such attachment. *See* EX1048, 79-80, 93-99.

Claim 1 ¹⁷	Prior Art
	batten to an underside of a first eave or to a fascia of the built structure in <u>Grounds 5-6</u>: Lowe’s discloses wrapping portions of an edge of a tarp around a batten (e.g., “rolling” the “end of the tarp around another 2x4”) and attaching the wrapped batten to an underside of a first eave or to a fascia of the built structure (e.g., “nail under the e[a]ve”; video showing man nailing tarp-wrapped batten to fascia of roof). E.g., EX1003, ¶¶201-206, pp.182-184; EX1037, 4:12-4:14 (“roll[ing]” the “end of the tarp around another two-by-four and nail[ing] under the e[a]ve”):  Tarp Your Roof ajdanciu 96 subscribers Subscribe Like Comment Share Save ... 51,496 views Sep 28, 2006 Secure open roofs with the use of tarps. EX1016-5, 0:28 (showing attachment of wrapped batten to the fascia). It would have been obvious, straightforward, and advantageous to implement Crook’s attachment using Lowe’s teachings of the

Claim 1 ¹⁷	Prior Art
	2x4 (batten) wrapping and attachment techniques (to each of fascia and the underside of eaves) for the same reasons as with Kelly and Inzeo above (but substituting Lowe’s teachings for Kelly’s and Inzeo’s). EX1003, ¶¶204-205, <i>supra</i> 60-62; <i>see also supra</i>, §II.
[1.c] wrapping portions of the trailing edge around a second batten and attaching the second batten to an underside of a second eave or to the fascia of the built structure at a location different than the first batten; and	Crook in view of Kelly and Inzeo renders this limitation obvious in <u>Grounds 1-4</u>: Crook discloses attaching portions of the trailing edge (<i>see</i> cl.1a(i), <i>e.g.</i>, “second end of the roof cover”) to the built structure adjacent to the roof edge (<i>see</i> cl.1b; “positioning the second end of the roof cover so that the second end of the roof cover extends adjacent (and preferably over) a second edge of the roof and so that the second end of the roof cover is held in place adjacent the second edge”) at a location different than the first batten (<i>e.g.</i>, “second edge of the roof”). <i>E.g.</i>, EX1003, ¶¶207-208, 216, pp.184-185. Crook in view of Kelly and Inzeo renders obvious this limitation including wrapping portions of the trailing edge around a second batten and attaching the second batten to an underside of a second eave or to the fascia of the built structure at a location different than the first batten in <u>Grounds 1-4</u>: Kelly discloses wrapping a roof covering’s edge around a batten (<i>see</i> cl.1b) and attaching it to the built structure (<i>see</i> cl.1b). <i>E.g.</i>, EX1003, ¶¶209-210, 212, 216, p.185.

Claim 1 ¹⁷	Prior Art
	Inzeo discloses attaching a roof covering (see cl.1b) to a fascia of a roof (see cl.1b). E.g., EX1003, ¶¶209, 211-212, 216, p.185. It would have been obvious, straightforward, and advantageous to implement Crook using the teachings of Kelly and Inzeo to secure the trailing edge of the sheet to the <i>second</i> end of the roof (as disclosed in Crook) for the same reasons discussed above regarding securing the leading edge of the <i>first</i> end of the roof (see cl.1b). EX1003, ¶212. Crook in view of Lowe’s also renders obvious this limitation including wrapping portions of the trailing edge around a second batten and attaching the second batten to an underside of a second eave or to the fascia of the built structure at a location different than the first batten in <u>Grounds 5-6</u>: Lowe’s discloses wrapping portions of the edge of a tarp around a batten (see cl.1b) and attaching the wrapped batten to an underside of an eave or to a fascia of the built structure (see cl.1b). EX1003, ¶¶213-216, p.185.

Claim 1 ¹⁷	Prior Art
	It would have been obvious, straightforward, and advantageous to implement Crook using Lowe’s teachings of batten-wrapping and attachment techniques to secure the trailing edge of the sheet to the <i>second</i> end of the roof (as disclosed in Crook), for the same reasons discussed above regarding securing the leading edge to the <i>first</i> end of the roof (<i>see</i> cl.1b). EX1003, ¶215.
[1.d]	Crook discloses this limitation in <u>Grounds 1-6</u>: Crook discloses heating (<i>e.g.</i>, “applying heat to the roof cover”) the sheet³⁰ of heat shrinkable film (<i>see</i> cl.1a(i)) to bring the film into conformity with the portion of the roof (<i>e.g.</i>, “roof cover shrinks and thereby attaches adjacent the roof”), wherein said heating step shrinks the sheet of film tight against the built structure to cover over the portion of the roof (<i>e.g.</i>, a “apply heat to the roof cover until the roof cover shrinks and thereby is secured adjacent the roof”). <i>E.g.</i>, EX1003, ¶¶217-221, pp.186-187; EX1004, ¶8 (“<i>applying heat to the roof cover until the roof cover shrinks and thereby attaches adjacent the roof...</i>”), ¶65 (“... <i>shrink wrap material that is configured to shrink in response to being exposed to heat...</i>”). <i>See also, e.g.</i>, EX1002, 263, 104, 137, 187-88; EX1011, 285, 288; EX1012, 276.

³⁰ As discussed in cl.1a, “the sheet” is rendered obvious by Crook in view of Americover, Crook in view of Americover and Vanderzee, Crook in view of Best, and Crook in view of Vanderzee and Best. EX1003, n.17.

Claim 1 ¹⁷	Prior Art
	POSITA would have understood Crook’s disclosures regarding its heat shrinkable film that the “roof cover shrinks and thereby attaches adjacent the roof” and that “roof cover shrinks and thereby is secured adjacent the roof” (EX1004, ¶¶8, 65), to mean that the film is brought into conformity with the covered portion of the roof and that the heating step shrinks the sheet of film tight against the roof. EX1003, ¶220. POSITA would, <i>e.g.</i>, have understood that heat shrinkable film used to cover a roof provided a tight-fitting film forming a “skin-like protective covering” and would have “mold[ed]” itself to the structure. EX1003, ¶20; EX1021, 1.

(b) Claims 2-3 (Grounds 7-10)

Claim 2	Prior Art
[2.pre]	To the extent the preamble is limiting, Crook discloses it for <u>Grounds 7-10:</u> Crook discloses a method of covering at least a portion of a roof of a built structure (<i>see</i> cl.1.pre (discussing “method of providing

Claim 2	Prior Art
	covers over at least a portion of a roof” ³¹)). <i>E.g.</i> , EX1003, ¶¶224-229, pp.187-189.
[2.a] cutting a sheet ^[32] of film from a roll of heat shrinkable film;	Crook renders this limitation obvious for <u>Grounds 7 and 9</u>: Crook discloses a sheet of heat shrinkable film (<i>see</i> Crook’s Off-The-Roof Method in cl.1a(i))³³ and a consumer roof wrap kit including a knife and a roof membrane supply roll (<i>e.g.</i>, an “improved protective roof wrap kit” including “at least one roof membrane supply roll 520, at least one roll of water-resistant tape 580, a roller 540 (<i>e.g.</i>, an extendable roller), and optionally a knife or cutting blade 590.”; Fig. 5). EX1003, ¶¶230-234, 243, pp.189-192; EX1004 ¶70 (“improved protective roof wrap kit... includes at least one roof membrane supply roll 520, at least one roll of water-resistant tape 580, a roller 540 (<i>e.g.</i>, an extendable roller), and optionally a knife or cutting blade 590.”), Fig. 5:

³¹ Citations to Claim 1 (*e.g.*, cl.1.pre) incorporate the citations for the corresponding reference for that claim element (*e.g.*, EX1004 citations in cl.1.pre chart).

EX1003, n.19.

³² The plain and ordinary meaning of “cutting a sheet” is that the action (cutting) is performed on the fully-assembled “sheet,” not individual, unassembled lengths/strips. EX1003, n.20.

³³ *See* n.21.

Claim 2	Prior Art
	FIG. 5 Crook renders obvious cutting a sheet from a roll before applying the sheet. EX1003, ¶233. Crook’s Off-The-Roof Method also discloses (or, alternatively, at minimum, renders obvious in view of Vanderzee) applying a sheet having a leading and trailing edge over the roof (<i>see</i> cl.1a(i)). EX1003, ¶233. Crook additionally teaches a kit for a user to store at their home until needed, the kit including “at least one roof membrane supply roll 520, at least one roll of water-resistant tape 580, a roller 540 (e.g., an extendable roller), and optionally a knife or cutting blade 590.” EX1003, ¶233; EX1004, ¶¶70-72,

Claim 2	Prior Art
	Fig. 5.³⁴ POSITA would have understood that, for those entities assembling such kits for distribution to consumers (as disclosed in Crook (EX1004, ¶70)), plastic sheeting purchased from an original manufacturer is more available, affordable, manufacturable, transportable, and manipulable in widths of only several feet (and not likely wide enough to cover a roof from edge to edge). EX1003, ¶233; EX1035, 1:6-19. POSITA would have been motivated and found it obvious, straightforward, and advantageous to implement Crook's teachings of its Off-The-Roof Method and of a roll of membrane in a kit designed for consumers by including a membrane that is sufficiently wide to reduce the number of membranes a consumer would need to install to cover their roof, because taping together membranes to form a water-resistant seam (<i>see supra</i> claim 1(a)(i); <i>e.g.</i>, EX1004, ¶¶7-8, 35, 65, 67, 70), either on or off the roof, would be difficult for

³⁴ POSITA would have understood that distributors would have also beneficially created kits (as disclosed in Crook) for purchase and use by roof repair professionals. EX1003, n.22.

Claim 2	Prior Art
	consumers. EX1003, ¶234. This would have also allowed those assembling kits to create membranes of different widths for deployment—<i>e.g.</i>, double or triple the single width—but starting with a single width supply of plastic, which would be lighter, less bulky, and more available, affordable, manufacturable, and transportable, than rolls that are, <i>e.g.</i>, double or triple that width. EX1003, ¶234. Thus, POSITA would have been motivated and found it obvious, straightforward, and advantageous—including based on Crook’s explicit teachings of pre-taping such strips of membrane together to form a sheet (or a wider sheet) (EX1004, ¶67)—to implement Crook’s teachings of providing a consumer kit including rolls of membrane assembled of multiple, taped-together widths of narrower plastic sheeting available from original manufacturers. EX1003, ¶234. Additionally, this would beneficially facilitate users of the kit cutting complete, water-resistant sheets (which comprise at least two lengths previously taped together) from the rolls. EX1003, ¶234. For POSITA, particularly in light of these teachings, cutting a sheet from a roll prior to lifting the sheet to the roof surface for positioning would have been

Claim 2	Prior Art
	an obvious, routine implementation choice and clear this would work, predictably yielding the expected functionality with REOS. EX1003, ¶234. Crook³⁵ in view of Vanderzee also renders obvious this limitation based on the same Crook disclosures above, in addition to the Vanderzee disclosures below, including in particular performing the assembly of a sheet from strips off the roof surface (before placement on the roof) and rolling it up for which Petitioner relies on Vanderzee for <u>Grounds 8 and 10</u>: Vanderzee discloses performing the assembly of parallel strips of plastic (<i>see</i> cl.1a(i)) for a roof (<i>see</i> cl.1a(i)) off the roof surface (<i>see</i> cl.1a(i)) and rolling them up (<i>e.g.</i>, “[f]ormed sheets are rolled up”). <i>E.g.</i>, EX1003, ¶¶234-241, 243, pp.192-195; EX1035, Abstract; 2:31-39 (“a <i>roll</i>... formed by bonding two sheets together...”); 2:61-64 (“[F]ormed sheets are rolled up”). POSITA would have been motivated and found it obvious, straightforward, and advantageous to implement Crook’s teachings (in its Off-The-Roof Method) of assembling the roof cover by

³⁵ See n.21.

Claim 2	Prior Art
	taping non-overlapping strips together, using Vanderzee’s advantageous teachings of performing the assembly off the roof surface and then rolling up the formed sheeting for movement to where it will be used. See cl.1a(i); EX1035, 2:31-64; EX1003, ¶238. Assembling the sheet off the roof and then lifting the sheet to the roof surface for positioning would have been an obvious, as discussed in cl.1a(i). Further, for POSITA, particularly in light of the teachings above, rolling the assembled sheet into a roll would have been an obvious, routine implementation choice and clear this would work, predictably yielding the expected functionality with a reasonable expectation of success. EX1003, ¶¶238-240; see cl.1a(i). Having rolled (as in Vanderzee) the sheet and having a knife to cut strips from a roll (as in Crook (EX1004, ¶70)), POSITA would have been motivated and found it obvious to implement Crook’s teachings by cutting a sheet (which comprises at least two lengths previously taped together) from the roll and then lifting the sheet (now having a leading and trailing edge) to the roof surface for positioning. E.g., EX1004, ¶¶7-8, 65; EX1003, ¶241. For POSITA, particularly in light of these teachings,

Claim 2	Prior Art
	cutting a sheet from a roll and then lifting the sheet to the roof surface for positioning would have been an obvious, routine implementation choice and clear this would work, predictably yielding the expected functionality with REOS. EX1003, ¶¶240-241. <u>Grounds 7, 9:</u> Additionally, to the extent the plain and ordinary meaning is interpreted more broadly to include cutting strips of film and then joining the strips together to form a sheet, Crook’s On-The-Roof Method discloses such a method. <i>See</i> cl.1a(i), <i>supra</i> 48-49; EX1003, ¶242, p.195. <u>Grounds 7, 9:</u> Under PO’s broader litigation interpretation, which includes a “sheet” being a single strip of film (<i>see supra</i> 48-49), for the same reasons discussed above, Crook discloses cutting a “sheet” of film from a roll of heat shrinkable film. <i>E.g.</i>, EX1003, ¶242, p.195.
[2.b] after said cutting step, applying	Crook renders this limitation obvious for <u>Grounds 7 and 9:</u> Crook’s Off-The-Roof Method discloses applying (<i>see</i> cl.1a(i)) the sheet of film (<i>see</i> cl.1a(i)) over the portion of the roof to extend from a first edge to a second edge of the [built] structure (<i>see</i> cl.1a(i)), wherein the film includes a leading edge (<i>see</i> cl.1a(i)) and a trailing edge (<i>see</i> cl.1a(i)). <i>E.g.</i>, EX1003, ¶¶244-247, 255, pp.195-196.

Claim 2	Prior Art
the sheet³⁶ of film over the portion of the roof to extend from a first edge to a sec- ond edge of the [built] structure, wherein the film includes a leading edge and a trailing edge;	Crook renders obvious cutting the sheet before applying it for <u>Grounds 7 and 9:</u> As discussed above, POSITA would have been motivated and found it obvious to implement Crook’s teachings to cut the sheet before applying it. <i>See</i> cl.2a; EX1003, ¶247. For POSITA, cutting the sheet before lifting the sheet to the roof surface for positioning would have been an obvious, routine implementation choice and clear this would work, predictably yielding the expected functionality with REOS. <i>See</i> cl.2a; EX1003, ¶247. Crook in view of Vanderzee also renders obvious this limitation based on the same Crook disclosures above, in addition to the Vanderzee disclosures below, including in particular rolling a sheet (cut by the knife of Crook) for which Petitioner relies on Vanderzee for <u>Grounds 8 and 10:</u>

³⁶ *See* n.30.

Claim 2	Prior Art
	Vanderzee discloses performing the assembly of parallel strips of plastic (see cl.1a(i)) for a roof (see cl.1a(i)) off the roof surface (see cl.1a(i)) and rolling them up (see cl.2a). E.g., EX1003, ¶¶248-250, 255, p.196. As discussed above, POSITA would have been motivated and found it obvious to implement Crook by rolling up (as taught by Vanderzee) the sheet and cutting a sheet from the roll before applying it. See cl.2a; EX1003, ¶250. For POSITA, cutting the sheet from a roll before lifting the sheet to the roof surface for positioning would have been an obvious, routine implementation choice and clear this would work, predictably yielding the expected functionality with REOS. See cl.2a; EX1003, ¶250. <u>Grounds 7, 9:</u> To the extent the limitation is interpreted more broadly such that it includes cutting strips of film from a roll to extend from a first edge to a second edge of the built structure and then joining the strips together to form a sheet on the roof (as opposed to assembling a sheet to extend from a first edge to a second edge of the built structure, prior to applying the sheet over the roof), Crook's On-The-Roof Method discloses such a method

Claim 2	Prior Art
	(as the examiner properly found applying BRI, as opposed to <i>Phillips</i>). See cl.1.a(i); EX1003, 251. Further, Crook’s On-The-Roof Method renders obvious applying the sheet after the cutting step. EX1003, ¶252. POSITA would have been motivated and found it obvious, straightforward, and advantageous to implement Crook’s teachings to perform the cutting operations off the roof before applying strips to the roof. See cl.2a; EX1003, ¶252. Cutting off the roof increases the safety and efficiency of the installation, as discussed above. See cl.2a; EX1003, ¶252. For POSITA, cutting before lifting the strips to the roof surface would have been an obvious, routine implementation choice and clear this would work, predictably yielding the expected functionality with REOS. See cl.2a; EX1003, ¶¶252-253, pp.196-197. See EX1011, 285. <u>Grounds 7, 9:</u> Because PO asserts in litigation that the claimed “sheet” includes a single strip of film, for the same reasons discussed above, Crook renders obvious applying a “sheet” of film after cutting the “sheet” from a roll of heat shrinkable film (using this broader interpretation of sheet). <i>E.g.</i>, EX1003, ¶254, p.197.

Claim 2	Prior Art
[2.c] & [2.d]	Crook in view of Kelly and Inzeo renders this limitation obvious. (Grounds 7-8) <i>See</i> EX1003, ¶¶256-262, 266-272, 276, pp.198-200; <i>supra</i> cl.1b, 1c. Crook in view of Lowe’s also renders this limitation obvious. (Grounds 9-10) <i>See</i> EX1003, ¶¶263-266, 273-276, pp.199-201; <i>supra</i> cl.1b, 1c.
[2.e]	Crook discloses this limitation. (Grounds 7-10) Crook discloses heating the film (<i>see</i> cl.1d) to cause the film to conform to the portion of the roof (<i>see</i> cl.1d). <i>E.g.</i>, EX1003, ¶¶277-279, p.201.

Claim 3	Prior Art
[3.pre]	To the extent the preamble is limiting, Crook discloses it for <u>Grounds 7-10</u>. <i>See</i> EX1003, ¶¶281-284, n.25, p.201; <i>supra</i> cl.2.pre.
[3.a] ap- plying a pre-cut	Crook renders this limitation obvious for <u>Grounds 7 and 9</u>: Crook’s Off-The-Roof Method discloses applying (<i>see</i> cl.1a(i)) a sheet of heat shrinkable film (<i>see</i> Crook’s Off-The-Roof Method in

Claim 3	Prior Art
sheet³⁷ of heat shrinkable film over the portion of the roof to extend from a first edge to a second edge of the [built] structure, wherein the film includes a leading edge and a trailing edge;	cl.1a(i)).³⁸ over the portion of the roof to extend from a first edge to a second edge of the built structure (<i>see</i> Crook’s Off-The-Roof Method in cl.1a(i)), wherein the film includes a leading edge (<i>see</i> Crook’s Off-The-Roof Method in cl.1a(i)) and a trailing edge (<i>see</i> cl.1a(i)). EX1003, ¶¶285-286, 293, pp.201-202. Additionally, Crook renders obvious pre-cutting the sheet. EX1003, ¶287. POSITA would have been motivated and found it obvious, straightforward, and advantageous to implement Crook’s Off-The-Roof Method by cutting strips to extend from a first edge to a second edge prior to assembling them into a sheet. EX1003, ¶287. POSITA would have understood that they could have advantageously cut strips of film from supply rolls, as taught by Crook, prior to assembling the strips into a pre-cut sheet. EX1004, ¶70, Fig. 5; EX1003, ¶287. For POSITA, particularly in light of these teachings, this would have been an obvious, routine implementation choice and clear this

³⁷ The plain and ordinary meaning of “applying a pre-cut sheet” is that the action (applying) is performed on the fully-assembled “pre-cut sheet,” not individual, un-assembled lengths/strips. EX1003, n.26.

³⁸ *See* n.21.

Claim 3	Prior Art
	would work, predictably yielding the expected functionality with REOS. EX1003, ¶287. Crook³⁹ in view of Vanderzee also renders obvious this limitation based on the same Crook disclosures above, in addition to the Vanderzee disclosures below, including in particular performing the assembly of a sheet from strips off the roof surface, rolling it up (to be pre-cut by the knife of Crook) for <u>Grounds 8 and 10</u>: Vanderzee discloses performing the assembly of parallel strips of plastic (see cl.1a(i)) for a roof (see cl.1a(i)) off the roof surface (see cl.1a(i)) and rolling them up (see cl.2a). E.g., EX1003, ¶¶288-290, pp.202-203. As discussed above, POSITA would have been motivated and found it obvious to implement Crook by rolling up (as taught by Vanderzee) the sheet and pre-cutting a sheet from the roll before applying it. See cl.2a; EX1003, ¶290. For POSITA, cutting the sheet before lifting the sheet to the roof surface for positioning would have been an obvious, routine implementation choice and clear this would work, predictably

³⁹ See n.21.

Claim 3	Prior Art
	yielding the expected functionality with REOS. <i>See</i> cl.2a, cl.2b; EX1003, ¶290. <u>Grounds 7 and 9:</u> To the extent the claim limitation is interpreted more broadly such that it includes cutting strips of film to have leading and trailing edges and then joining the strips together to form a pre-cut sheet on the roof (as opposed to assembling a pre-cut sheet (having a leading and trailing edge) prior to applying the sheet over the roof), Crook’s On-The-Roof Method also renders obvious such a method (as the Examiner properly found in prosecution of the ’787 Application applying BRI, as opposed to <i>Phillips</i>). <i>See</i> cl.2b; EX1011, 285-286; EX1003, ¶291, p.203. <u>Grounds 7 and 9:</u> Under PO’s litigation construction, for the same reasons discussed above (<i>supra</i> 48-49), Crook renders obvious applying a pre-cut “sheet” (using this broader interpretation). <i>E.g.</i>, EX1003, ¶292, p.203.

Claim 3	Prior Art
[3.b], [3.c]	Crook in view of (1) Kelly and Inzeo (Grounds 7-8) or (2) Lowe’s (Grounds 9-10) renders this limitation obvious. See EX1003, ¶¶294-314, pp.203-206; <i>supra</i> cl.1b, 1c.
[3.d]	Crook discloses this limitation. (Grounds 7-10) See EX1003, ¶¶315-318, p.206; <i>supra</i> cl.2.d.

* * *

Though PO has the burden, none of PO’s identified evidence to-date shows secondary considerations. *See* EX1023 at 7-10; *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). For example, PO has failed to demonstrate any nexus. *See* EX1023 at 7-10.

PO apparently plans to argue there are secondary considerations of long-felt, unmet need, commercial success, industry praise, and copying. *See* EX1023 at 7-10. But, the “a long-felt need for a better temporary roof covering than the existing practice of securing loose-fitting tarpaulins using sandbags or construction material” (*id.* at 9) was not unmet. *See* §I.C. In addition, while PO identified alleged awards and industry praise, it identifies no relationship to ’484’s Claims. *Id.* at 9-10. PO points to no evidence to support its allegations related to commercial success and copying.

Accordingly, Petitioner is aware of no evidence from PO of secondary considerations with a nexus to '484, and reserves the right to address any PO may raise. *See Petroleum Geo-Servs. Inc. v. WesternGeco LLC*, IPR2014-01475, Pap.18, 28 (Mar. 17, 2015) (secondary considerations evidence “must be *first developed...by Patent Owner*”); EX1003, ¶319.

VII. The Board Should Not Exercise §314(a) Discretion

Petitioner has provided a *Sotera* Stipulation (EX1022) that, “if the PTAB institutes IPR, Structural Wrap will not pursue in [the District Court litigation] the same grounds asserted in the petition, or any grounds that could have reasonably been raised in the petition.” Accordingly, the Board should not deny institution under §314(a). *See* USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022).

VIII. The Board Should Not Exercise §325(d) Discretion

Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH, IPR2019-01469, Pap.6, 7, 8-9 (Feb. 13, 2020) (precedential) (“AB”) does not support discretionary denial.

With respect to the **AB part 1**, only Crook was before the Examiner during prosecution of '484 and its parent. *See generally* EX1002; EX1014.⁴⁰ Therefore, none of Grounds 1-10 were previously presented. *See Throne Rsch., Inc. v. Trs. of Dartmouth Coll.*, IPR2021-00268, Pap.21, 9 (June 10, 2021) (“combination of prior art” is “not the same or substantially the same... [so] we need not reach the second part of [AB]”); *Netflix, Inc. v. DivX, LLC*, IPR2020-00646, Pap.12, 51-55 (Sept. 15, 2020).

Even if post-'484 prosecutions of child applications were considered, and Kelly, Inzeo, and Best were regarded as having been considered during *later* examination—but *see Ironsource Ltd. v. Digital Turbine Inc.*, PGR2021-00096, Pap.14, 52 (January 6, 2022) (“We construe ‘previously presented’ in... §325(d) to refer to art and arguments presented to the Office **prior to the filing** of the petition at issue.”)—under *AB* part one §325(d) is nevertheless inapplicable to *eight* of Petitioner’s *ten* Grounds (2-6 and 8-10), which include references (Lowe’s, Americover, and/or Vanderzee) that were *not* before the Examiner in any related

⁴⁰ Indeed, the Examiner had not, at that time, identified art that taught wrapping a batten, such as Kelly or Lowe’s here. *See* EX1002, 293. When Kelly was **later** discovered during prosecution of the child application, the Examiner determined the prior art *does* disclose batten-wrapping. *See* §I.C.

application before *or since* '484. And even with respect to Grounds 1 and 7, §325(d) is inapplicable because the combinations using Kelly, Inzeo, and Best *were not overcome at the Office* in those child applications, as discussed in §I.C and for *AB* part 2 below.

Although unnecessary, to the extent the Board reaches ***AB* part 2**, Petitioner's Grounds 1 and 7 also do not support discretionary denial. The '484 Claims issued in error, *and the Office agrees*: during later prosecution the combinations of Crook, Kelly, Inzeo, and Best *rendered obvious claims of identical scope* (and near-identical language) *to the challenged '484 claims*. See §I.C. The new secondary reference, Kelly (absent from '484's prosecution but found and applied by the Examiner in the '787 Application) supplied the sole batten-wrapping limitation the Examiner previously—and (by the Examiner's own admission) *mistakenly*—found to be missing from the art. *Id.* Thus, as the Office has already concluded, if the Examiner had been aware of Kelly (or other art teaching batten wrapping), the '484 *would not have issued*.⁴¹ *Cf. Apple Inc. v. SEVEN Networks, LLC*, IPR2020-00285, Pap.10, 28–31 (July 28, 2020) (granting

⁴¹ The same would be true for any other art or combination of art that is otherwise cumulative to the applied '484 art when combined with art teaching batten-wrapping.

institution even when, in the challenged patent's child application, the PO *overcame* the asserted references). Moreover, Petitioner is using the references in Grounds 1 and 7 (including Crook, the reference that was previously before the Examiner) in a way that is *not inconsistent with* how they were used in the prosecution histories (indeed, in the *same way*). *Intel Corp. v. Godo Kaisha IP Bridge 1*, IPR2018-00855, Pap.7, 28-35 (Nov. 6, 2018) (declining discretionary denial, analyzing *BD* factor (c) in considering that petitioner's use of previously-cited references was not inconsistent with examiner's prosecution findings). Thus, even with respect to Grounds 1 and 7, *AB* part 2 does not favor discretionary denial.

For at least these reasons and those presented *supra* (§I.C), the Board should not exercise its §325(d) discretion.

IX. CONCLUSION

Petitioner requests this Petition be instituted and the Claims found unpatentable/canceled. Per §§1.33(c), 42.105(c), and 42.100, pursuant to agreement with PO's counsel this Request is being served via electronic mail on PO's counsel. The Director is authorized to charge any fee deficiency (including for any paper this firm hereafter files in this proceeding) to Deposit Account DA604974.

Respectfully submitted:

/Megan Raymond/
Megan F. Raymond

October 28, 2023

CLAIM APPENDIX

The claim listing below assigns element labels to the independent claim(s) corresponding to the mappings provided in the Petition.

Limitation	Text
1[pre]	A method of providing covers over at least a portion of a roof of a storm damaged built structure comprising the steps of:
1[a]	applying a sheet of heat shrinkable film over the portion of the roof, the sheet having a leading edge and a trailing edge and being a film of low density polyethylene including shrinking resins;
1[b]	wrapping portions of the leading edge around a first batten and attaching the first batten to an underside of a first eave or to a fascia of the built structure;
1[c]	wrapping portions of the trailing edge around a second batten and attaching the second batten to an underside of a second eave or to the fascia of the built structure at a location different than the first batten; and
1[d]	heating the sheet of heat shrinkable film to bring the film into conformity with the portion of the roof, wherein said heating step shrinks the sheet of film tight against the built structure to cover over the portion of the roof.
2[pre]	A method of covering at least a portion of a roof of a [built] structure comprising the steps of:
2[a]	cutting a sheet of film from a roll of heat shrinkable film;
2[b]	after said cutting step, applying the sheet of film over the portion of the roof to extend from a first edge to a second edge of the [built] structure, wherein the film includes a leading edge and a trailing edge;
2[c]	wrapping portions of the leading edge around a first batten and attaching the first batten to an underside of a first eave or to a fascia of the [built] structure;

2[d]	wrapping portions of the trailing edge around a second batten and attaching the second batten to an underside of a second eave or to the fascia of the built structure at a location different than the first batten; and
2[e]	heating the film to cause the film to conform to the portion of the roof.
3[pre]	A method of covering at least a portion of a roof of a [built] structure comprising the steps of:
3[a]	applying a pre-cut sheet of heat shrinkable film over the portion of the roof to extend from a first edge to a second edge of the [built] structure, wherein the film includes a leading edge and a trailing edge;
3[b]	wrapping portions of the leading edge around a first batten and attaching the first batten to an underside of a first eave or to a fascia of the [built] structure;
3[c]	wrapping portions of the trailing edge around a second batten and attaching the second batten to an underside of a second eave or to the fascia of the built structure at a location different than the first batten; and
3[d]	heating the film to cause the film to conform to the portion of the roof.

CERTIFICATION UNDER 37 CFR §42.24(d)

Pursuant to 37 CFR §42.24(d), the undersigned certifies that this Petition complies with the type-volume limitation of 37 CFR §42.24(a). The word count application of the word processing program used to prepare this Petition indicates that the Petition contains 13,285 words, excluding the parts of the brief exempted by 37 C.F.R. §42.24(a).

Respectfully submitted:

/Michael F. Milea/
Michael F. Milea

October 28, 2023

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the following documents has been served in its entirety on the patent owner as provided in 37 CFR §42.105:

Petition For *Inter Partes* Review of United States Patent No. 11,168,484 and accompanying exhibits:

Exhibit	Description
EX1001	U.S. Patent No. 11,168,484
EX1002	U.S. Patent No. 11,168,484 File History
EX1003	Declaration of Douglas R. Stieve
EX1004	U.S. Patent Application Pub. No. 2005/0217202 (“Crook”)
EX1005	U.S. Patent No. 8,407,958 (“Kelly”)
EX1006	U.S. Patent No. 6,851,229 (“Inzeo”)
EX1007	U.S. Patent No. 7,951,873 (“Best”)
EX1008	U.S. Patent No. 6,206,991 (“Starr”)
EX1009	U.S. Patent No. 6,425,213 (“Lachapelle”)
EX1010	U.S. Patent No. 7,517,941 (“Myhre”)
EX1011	U.S. Application No. 17/519,787 File History
EX1012	U.S. Application No. 17/977,136 File History
EX1013	U.S. Patent No. 9,822,536
EX1014	U.S. Patent No. 9,822,536 File History
EX1015	U.S. Patent Publication No. US 2005/0279040 (“Panasik”)
EX1016	Video Screen Recording of https://www.youtube.com/watch?v=2PKUMDmVRMY (“Lowe’s Video” or “Lowe’s”)
EX1017	<i>This Old House</i> Magazine, March 2005 Issue (“This-Old-House”)
EX1018	Blue Roof Tarps Webpage (“Blue-Roof-Tarps”)
EX1019	Plastic Sheeting: A guide to the specification and use of plastic sheeting in humanitarian relief (IFRC & Oxfam, 2007) (“Plastic-Sheeting”)

Exhibit	Description
EX1020	Emergency Management Australia, Storm and Water Damage Operations, Third Edition (2007) (“EMA”)
EX1021	Americover Heat Shrink Wrap Webpage (“Americover”)
EX1022	October 26, 2023 Email re: Stormseal USA, LLC et al. v. Structural Wrap, LLC et al., No. 22-cv-81726 (S.D. Fla.) (Sotera Stipulation)
EX1023	Redacted Version of Plaintiffs’ Responses and Objections to Defendant Structural Wrap, LLC’s First Set of Interrogatories to Plaintiffs, dated June 12, 2023, in <i>Stormseal USA, LLC and System Stormseal Pty Ltd v. ABC Supply Co., Inc., Mule-Hide Products Co., Inc.</i> , and Structural Wrap, LLC, Case No. 9:22-cv-81726-AHS (S.D. Fla.)
EX1024	Declaration of Sayem Osman
EX1025	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding Americover
EX1026	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding EMA
EX1027	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding “Plastic-Sheeting”
EX1028	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding “Blue-Roof-Tarps”
EX1029	Affidavit of Nathaniel E Frank-White and Records from Internet Archive on September 9, 2023 regarding “Lowe’s Video”
EX1030	Declaration of Yash P. Khanna, Ph.D
EX1031	U.S. Patent Application Pub. No. 2002/009589 (“Bettencourt”)
EX1032	WO 2004/022646 (“Ohlsson”)
EX1033	U.S. Patent No. 4,247,509 (“Talbot 509”)
EX1034	U.S. Patent No. 4,763,783 (“Talbot 783”)
EX1035	U.S. Patent No. 4,715,915 (“Vanderzee”)
EX1036	DE 1, Complaint, in <i>Stormseal USA, LLC and System Stormseal Pty Ltd v. ABC Supply Co., Inc., Mule-Hide Products Co., Inc.</i> , and Structural Wrap, LLC, Case No. 9:22-cv-81726-AHS (S.D. Fla.)
EX1037	Transcript of EX1016 “Tarp Your Roof,” https://www.youtube.com/watch?v=2PKUMDmVRMY (“Lowe’s Transcript”)

Exhibit	Description
EX1038	Rapra Technology Limited, <i>Handbook of Plastic Films</i> (2003) (“Rapra”)
EX1039	John H. Briston, <i>Plastics Films</i> , Third Edition (1989) (“Briston”)
EX1040	Americover Heat Shrink Wrap FAQ Webpage (“Americover-FAQ”)
EX1041	Library of Congress Record for EX1038
EX1042	Library of Congress Record for EX1039
EX1043	OMITTED
EX1044	Fine Homebuilding Discussion Forum, https://www.finehomebuilding.com/forum/temporary-12-month-roof-covering
EX1045	Library of Congress Borrow Record (Handbook of Plastic Films)
EX1046	Library of Congress Borrow Record (Plastics Films)
EX1047	John H. Briston, <i>Plastics Films</i> , Third Edition (1989) (1990 Reprint)
EX1048	U.S. Patent No. 10,472,827 File History
EX1049	October 20, 2023 Letter from Google Custodian of Records Ra Bacchus and October 26, 2023 Certificate of Authenticity by Ra Bacchus
EX1050	YouTube Video Metadata
EX1051	Declaration of Stephen Maniscalco
EX1052	Declaration of Chieh-Ming Hsu

Pursuant to agreement with PO’s counsel, the copy has been served on October 28, 2023, by causing the aforementioned document to be electronically mailed to the following attorneys of record for PO listed below:

Litigation Counsel	DUANE MORRIS LLP Tyler R. Marandola tmarandola@duanemorris.com Joseph Powers japowers@duanemorris.com David Wolfsohn
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	djwolfsohn@duanemorris.com Stephanie Vazquez svazquez@duanemorris.com By Electronic Mail
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Dated: October 28, 2023

**GROOMBRIDGE, WU, BAUGHMAN &
STONE LLP**

/Sayem Osman/
Sayem Osman