

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LOUISIANA-PACIFIC CORPORATION,
Petitioner,

v.

HUBER ENGINEERED WOODS LLC,
Patent Owner.

IPR2019-00919
Patent 9,546,479

Before SCOTT A. DANIELS, BARRY L. GROSSMAN, and
MICHAEL L. WOODS, *Administrative Patent Judges*.

WOODS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Louisiana-Pacific Corporation (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–20 of U.S. Patent No. 9,546,479 (“the ’479 patent”). Pet. 4. We issued a decision to institute an *inter partes* review of these claims. Paper 9 (“Inst. Dec.”).

After institution, Huber Engineered Woods LLC (“Patent Owner”) filed a Patent Owner Response (Paper 12 (“PO Resp.” or “Response”)), to which Petitioner replied (Paper 14 (“Pet. Reply” or “Reply”)). Patent Owner also filed a Sur-Reply to Petitioner’s Reply. Paper 18 (“PO Sur-Reply” or “Sur-Reply”).

Oral argument (hearing), was held on July 16, 2020, and the transcript of the hearing has been entered as Paper 23.

We have jurisdiction under 35 U.S.C. § 6. Petitioner bears the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d) (2019). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 (2019). For the reasons that follow, we determine that Petitioner has not shown that any of claims 1–20 of the ’479 patent are unpatentable.

A. Related Proceedings

Petitioner represents that the ’479 patent is at issue in *Huber Engineered Woods LLC v. Louisiana-Pacific Corporation*, USDC, District of Delaware, No. 1:19-cv-00342-LPS, filed February 18, 2019, and in *Huber*

Engineered Woods LLC v. Martco LLC, USDC, Eastern District of Texas, No. 2:18-cv-00530-JRG, filed December. 7, 2018. Pet. 4–5.

We further note that Petitioner filed petitions for *inter partes* review challenging patents related to the '479 patent. In particular, Petitioner filed petitions in IPR2020-00596, IPR2020-00600, IPR2020-00601, IPR2020-00604, IPR2020-00605, IPR2020-00606, and IPR2020-00607 challenging patents related to the '479 patent. Each of the related patents claims priority to U.S. Provisional Application No. 60/547,031, filed on Feb. 23, 2004, just as the '479 patent. *See, e.g.*, Ex. 1001, code [60]. Additionally, Petitioner filed a second, follow-on petition in IPR2020-00609, challenging the same claims (1–20) of the '479 patent. In each of these other *inter partes* review proceedings, we denied to institute review of any of the challenged patents.

B. The '479 Patent (Ex. 1001)

The '479 patent, titled “Panel for Sheathing System and Method,” describes a sheathing panel including a “water resistant barrier layer secured atop its outward facing surface.” Ex. 1001, codes (54), (57).

To illustrate the '479 patent’s panel and sheathing system, we first reproduce its Figure 1, below:

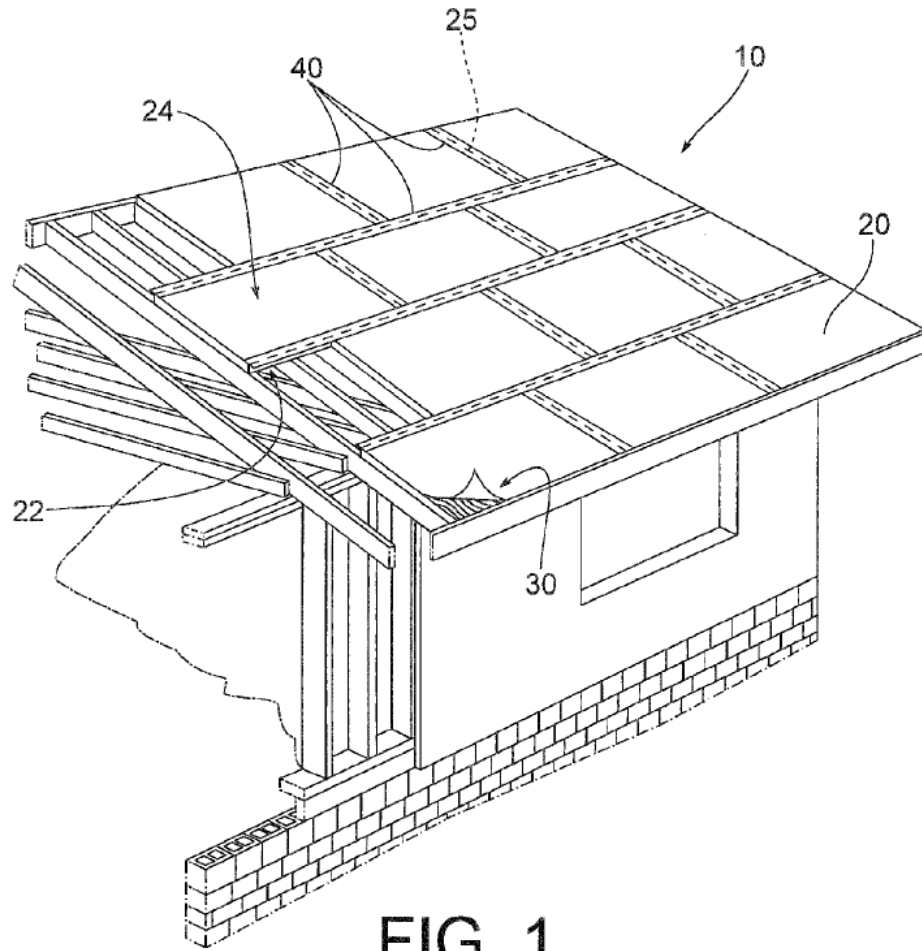


FIG. 1

Figure 1 depicts a roof utilizing the panel and sheathing system. Ex. 1001, 3:27–28. In particular, Figure 1 depicts panelized roof sheathing construction system 10 with panels 20 in abutting relationship attached to a building frame structure. *Id.* at 4:57–61. The system preferably includes water-resistant sealing means 40 sealing joints 25 between adjacent panels 20. *Id.* at 5:3–6.

Although Figure 1 depicts a panelized roofing system, the '479 patent describes, specifically, the panels for use in roof or wall construction. *See, e.g., id.* at 4:46–54.

We also reproduce Figure 2 of the '479 patent, below:

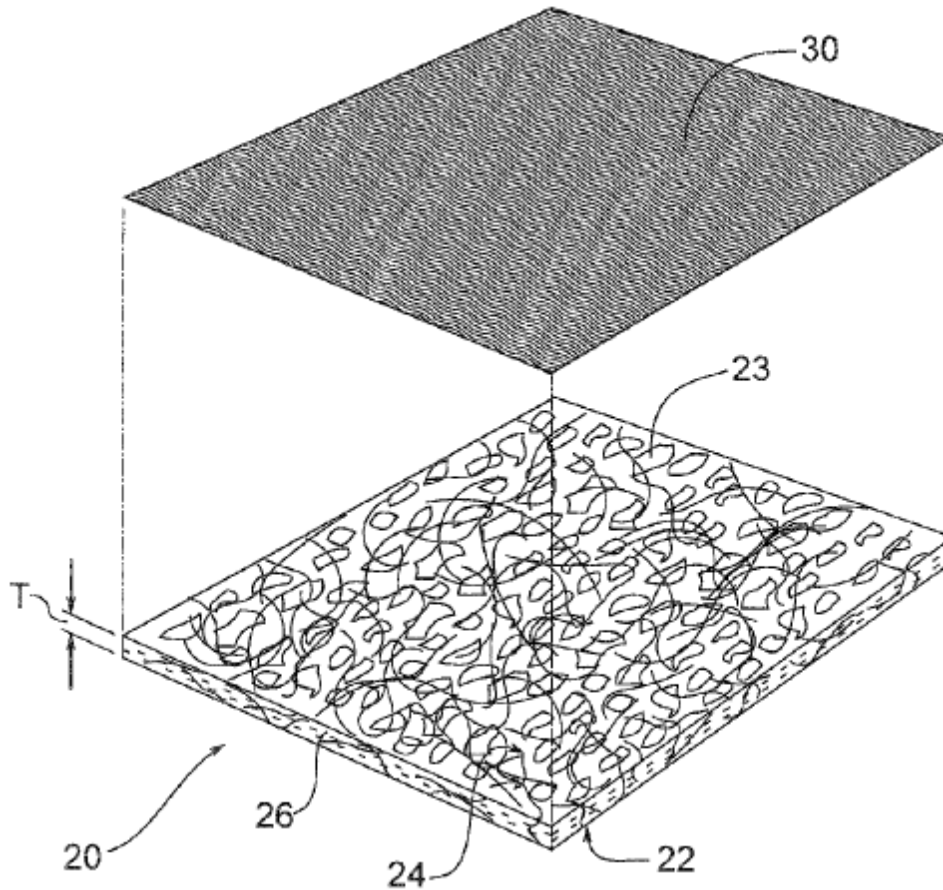


Figure 2 depicts an embodiment of the panel. Ex. 1001, 3:48–51. Specifically, Figure 2 illustrates panel 20 preferably made of an oriented strand board (“OSB”) substrate having two surfaces 22, 24 with core layer 26 disposed between the layers. *Id.* at 5:7–12. Barrier layer 30 is secured to the outward facing surface 24 of panel 20. *See id.* at 6:17–19 (referencing similar Figure 3). The ’479 patent describes barrier layer 30 as resistant to bulk water but permeable to water vapor. *Id.* at 6:47–48.

We next reproduce the ’479 patent’s Figure 9A, below:

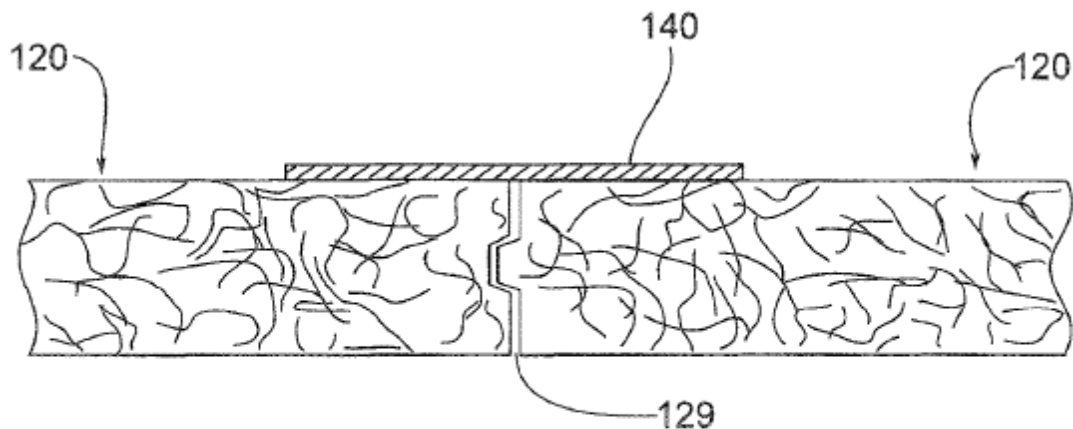


FIG. 9A

Figure 9A depicts a cross-sectional view of two adjacent panels according to an embodiment of the invention. Ex. 1001, 3:37–39. In particular, Figure 9A depicts an embodiment of two panels 120 secured with tongue-and-groove joint 129 (*id.* at 16:25–27) and with a strip of water-resistant pressure-sensitive seam sealant 140, which is preferably a tape (*id.* at 17:18–25).

C. Illustrative Claims

Claims 1, 11, and 20 are independent. Ex. 1001, 22:49–24:20. Independent claims 1 and 11 are representative of the subject matter at issue and are reproduced below, with emphases added to certain limitations addressed in this decision.

1. A panelized sheathing system for external walls of a building structure, the system comprising:
at least two adjacent structural wall panels, each panel including an outer surface, an inner surface, and at least one edge extending therebetween, *each panel aligned with its at least one edge proximate to the at least one edge of the adjacent panel and defining a joint between the two adjacent panels;*

a barrier layer secured to the outer surface of each panel, the barrier layer being bulk water resistant and water vapor permeable; and

a bulk water resistant sealant sealing the joint between the proximate edges of the two adjacent panels.

11. A method of sheathing external walls of a building structure, the method comprising:

positioning at least two wall panel assemblies adjacent to each other, each panel assembly including:

a structural wall panel including an outer surface, an inner surface, and at least one edge; and

a barrier layer secured to the outer surface of each panel, the barrier layer being bulk water resistant and water vapor permeable,

wherein the respective edges of the adjacent at least two wall panel assemblies are proximate to each other and define a joint therebetween and such that the respective inner surfaces contact the structure;

fastening each panel assembly to the structure; and

sealing the joint between the edges of the panel.

Id. at 22:6–18 (emphases added).

D. References Relied Upon

Petitioner's challenges rely on the following references (Pet. 4–5):

Name	Reference	Ex. No.
APA	APA Engineered Wood Handbook	1005
Allen	Fundamentals of Building Construction; Materials and Methods	1010
SmartSide- MSDS	LP SmartSide MSDS-029	1011
ICBO	ICBO Evaluation Report	1012
SmartSide- 2001	LP SmartSide Installation Instructions	1013
Alaska	Building in Alaska: Permeability of Common Building Material to Water Vapor	1008
StoGuard- 2001	Sto Corp. Launches Sto Guard Housewrap Alternative	1014
StoGuard- 2003 ¹	Sto Guard a seamless, fluid-applied air and moisture barrier, provides superior protection under most claddings. It does what other wraps only pretend to do	1015
ASTM D5795	Standard Test Method for Determination of Liquid Water Absorption of Coated Hardboard And Other Composite Wood Products Via 'Cobb Ring' Apparatus	1006
ASTM Report	Interlaboratory Study to Establish Precision Statements for ASTM D5795, Test Method for Determination of Liquid Water Permeability of Applied Coatings on Hardboard and Other Composite Wood Products Via "Cobb Ring" Apparatus	1007

¹ The Petition erroneously references StoGuard 2003 as StoGuard 2002 in its "Applicable Prior Art References" table on pages 17–19. Our Decision refers to the reference as StoGuard 2003, as this is consistent with the remainder of the Petition.

Name	Reference	Ex. No.
ASTM E96	Standard Test Methods for Water Vapor Transmission of Materials	1016
Van Wagoner	US Pat. No. 4,719,723, issued Jan. 19, 1988	1018
Hsu	US Pat. No. 5,616,419, issued Apr. 1, 1997	1026
Ou	US Pat. No. 6,737,155 B1, issued May 18, 2004	1020
Lionel	US Pat. No. 6,901,712 B2, issued June 7, 2005	1019
Arnold	Installing Housewrap	1022
Grace	Wall-Sheathing Seam Tape	1023
Biblis	Performance of southern OSB overlaid with resin-impregnated paper	1021

E. Alleged Grounds of Unpatentability

Petitioner contends that claims 1–20 of the '479 patent are unpatentable under the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1, 6, 7, 9–11, 16, 17, 19, 20	102(a)	APA
1–20	103(a)	APA, StoGuard-2001, StoGuard-2003, for claims 1 and 11, and combined with one or more of ASTM D5795, ASTM Report, Alaska, ASTM E96, Van Wagoner, Arnold, Hsu, and Grace for claims 2–10, 12–20 (<i>see</i> Pet. 17–19).
1–20	103(a)	APA, SmartSide-MSDS, SmartSide-2001, ICBO, for claims 1 and 11, and combined with one or more of ASTM D5795, ASTM Report, Alaska, ASTM E96, Van Wagoner, Arnold, Hsu, Grace for claims 2–10, 12–20.

Pet. 17–20. Petitioner also relies on the declaration testimony of Dr. Peter E. Laks (Ex. 1002) in support of its Petition. *See, e.g.*, Pet. 22 (referencing Ex. 1002).

II. ANALYSIS

A. Claim Construction

In an *inter partes* review proceeding for a petition filed on or after November 13, 2018, a patent claim shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (2019). This rule adopts the same claim construction standard used by Article III federal courts, which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) and its progeny. Under the *Phillips* standard, the words of a claim are generally given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *See Phillips*, 415 F.3d at 1312–13. “[W]here a party believes that a specific term has meaning other than its plain meaning, the party should provide a statement identifying a proposed construction of the particular term and where the disclosure supports that meaning.” Office Trial Practice Guide, 77 Fed. Reg. 48,756, 48,764 (Aug. 14, 2012).

In our Decision to Institute, we construed the phrase “a barrier layer secured to the outer surface of each panel” of independent claim 1 “to require each panel to have a barrier layer secured to it, whether or not the barrier layer is secured to the panel before or after the panel is fastened to a building structure.” Inst. Dec. 10–11.

In its Response, Patent Owner states, “The Board is correct that this phrase should ‘require each panel to have a barrier layer secured to it’” but argues that “the Board should clarify that a barrier layer is secured to each individual panel and not to other panels.” PO Resp. 14 (emphasis omitted) (citing Ex. 2034 ¶¶ 87–91, 93).

In its Reply, Petitioner disagrees with Patent Owner’s revised construction, contending, “There is simply no reason to assume that the phrase ‘each panel with its secured barrier layer’ prohibits the barrier layer from being secured to another panel.” Pet. Reply 17.

Despite the disagreement between Patent Owner and Petitioner regarding the meaning of the claimed “barrier layer secured to the outer surface of each panel,” construing this claim phrase is not necessary for purposes of this Decision. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy’” (internal citation omitted)).

Rather, we determine that the only claim that requires construction is method claim 11.

1. Claim 11

Independent claim 11 recites the step of “positioning” wall panels, where each panel comprises a “barrier layer.” Ex. 1001, 22:49–63. The claim further requires the separate step of “fastening” each panel assembly to a building structure. *Id.* As a matter of logic, the panels cannot be fastened onto the structure until they have first been positioned. *See Mformation Techs., Inc. v. Research In Motion Ltd.*, 764 F.3d 1392, 1398–99 (Fed. Cir. 2014) (“[A] claim ‘requires an ordering of steps when the

claim language, as a matter of logic or grammar, requires that the steps be performed in the order written, or the specification directly or implicitly requires' an order of steps.”). Accordingly, claim 11’s step of “positioning at least two wall panel assemblies” occurs before the step of “fastening each panel assembly to the structure.” *Id.*; *see also* Ex. 1001, 3:59–61, Fig. 10 (depicting a flow diagram of the steps included in the manufacture of a panel for roof or wall sheathing).

Furthermore, because the “positioning” step of the claim requires each of its panels to have “a barrier layer secured to the outer surface of each panel,” it logically follows that the panels have barrier layers before the panels are fastened to the structure.

For the foregoing reason, we interpret claim 11 to require the “adjacent structural wall panels” to each have a “barrier layer secured to the outer surface of each panel” *before* the panels are fastened to the structure, and *before* the joint between the edges of the adjacent panels are sealed.

2. *Other Claim Terms*

No other claim limitation requires express construction for purposes of this Decision. *See Wellman*, 642 F.3d at 1361.

B. Principles of Law

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden never shifts to Patent Owner. *Dynamic Drinkware*, 800 F.3d at 1378.

Petitioner's challenges are based on anticipation and obviousness.
Pet. 17.

As to anticipation, “[a] prior art reference anticipates a patent’s claim under § 102(b) if it ‘discloses each and every element of the claimed invention arranged or combined in the same way as in the claim.’”

Monsanto Tech. LLC v. E.I. DuPont de Nemours & Co., 878 F.3d 1336, 1342–43 (Fed. Cir. 2018) (quoting *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1341 (Fed. Cir. 2016)).

As to obviousness, a claim is unpatentable as obvious under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.² *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the application from which the ’479 patent issued claims priority to an application filed before this date, the pre-AIA version of § 103 applies.

C. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17.

Factors pertinent to a determination of the level of a person having ordinary skill in the art (“POSITA”) include: (1) educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology, and (6) educational level of workers active in the field. *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case. *Id.* Moreover, these factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. Ltd, Inc. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). We also may look to the prior art, which may reflect an appropriate skill level. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Additionally, the Supreme Court informs us that “[a] person of ordinary skill is also a person of ordinary creativity, not an automaton.” *KSR*, 550 U.S. at 421.

In our Decision to Institute, we determined that a POSITA “would have had a degree in civil engineering, building, material, wood science, or other degree, if such other degree required coursework or experience in the pertinent technology and two years of industry experience or equivalent

therein.” Inst. Dec. 14. We further determined, “Additional education, such as an advanced degree, could offset less work experience, and additional work experience could offset less education or coursework.” *Id.*

Patent Owner adopts the level of a POSITA set forth in our Decision to Institute. PO Resp. 13 (“HEW adopts the Board’s definition of a POSA.”). Petitioner does not address our definition in its Reply. *See generally* Pet. Reply.

We maintain the level of a POSITA that we provided in our Decision to Institute.

D. Ground 1 - Anticipated by APA

Petitioner contends that claims 1, 6, 7, 9–11, 16, 17, 19, and 20 are anticipated by APA. Pet. 17.

1. APA (Ex. 1005)³

APA is a published handbook titled “APA Engineered Wood Handbook,” published by McGraw-Hill Companies, Inc., in 2002. Ex. 1005, 1, 3. APA has twelve chapters (*id.* at 4–6), including Chapter 2 (Wood Structural Panels), Chapter 4 (Structural Glued Laminated Timber (Glulam)), Chapter 9 (Treatments and Finishes for Wood), and Chapter 12 (Designing and Detailing for Permanence), each of which Petitioner cites to (*see, e.g.*, Pet. 24–34).

³ Our citations to APA are to the exhibit’s page numbers rather than the handbook’s native page numbers.

2. *Petitioner's Challenge*

In challenging independent claims 1, 11, and 20, Petitioner cites to APA's figures 2.6 and 2.7 to satisfy the claimed "at least two adjacent structural wall panels, . . . each panel aligned with its at least one edge proximate to the at least one edge of the adjacent panel and defining a joint between the two adjacent panels." *See* Pet. 24–25. We reproduce APA's Figure 2.7, below:

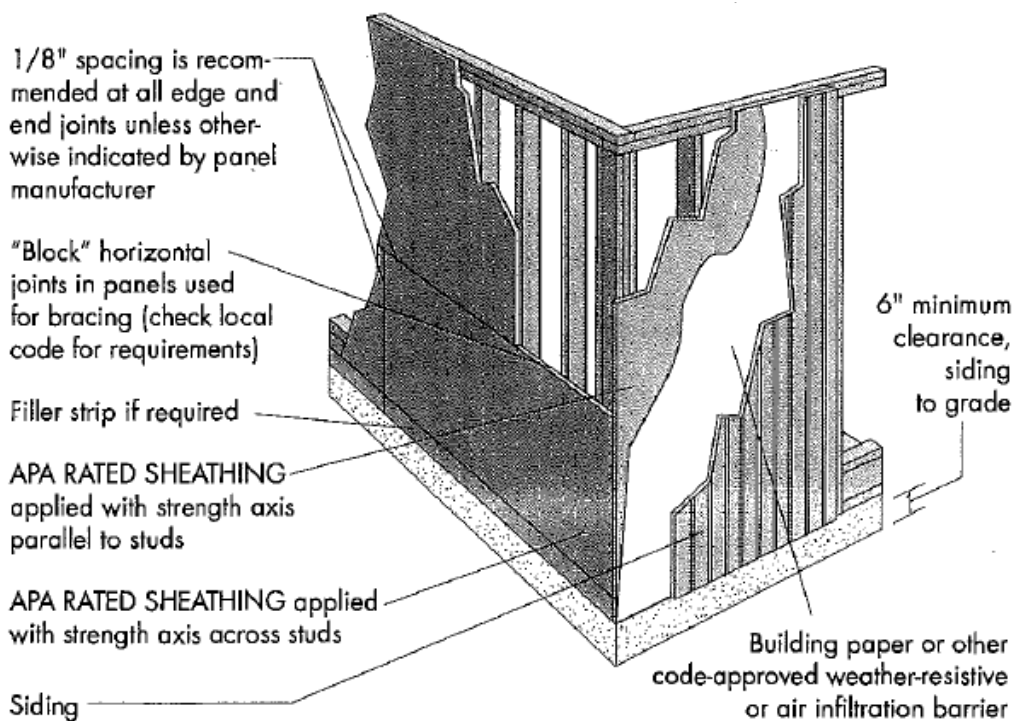


FIGURE 2.7 Wood structural panel wall sheathing.

Ex. 1005, 29. Figure 2.7 depicts sheathing with 1/8" recommended spacing "at all edge and end joints unless otherwise indicated by panel manufacturer." *Id.*

To address the claimed "barrier layer secured to the outer surface of each panel," Petitioner cites to APA's disclosure of a "barrier applied over the structural frame of a structure" (citing APA's Figure 12.27). Pet. 26

(citing in part Ex. 1005, 120–121, 132, and Figs. 12.27, 12.28). We reproduce APA’s Figure 12.27, below:

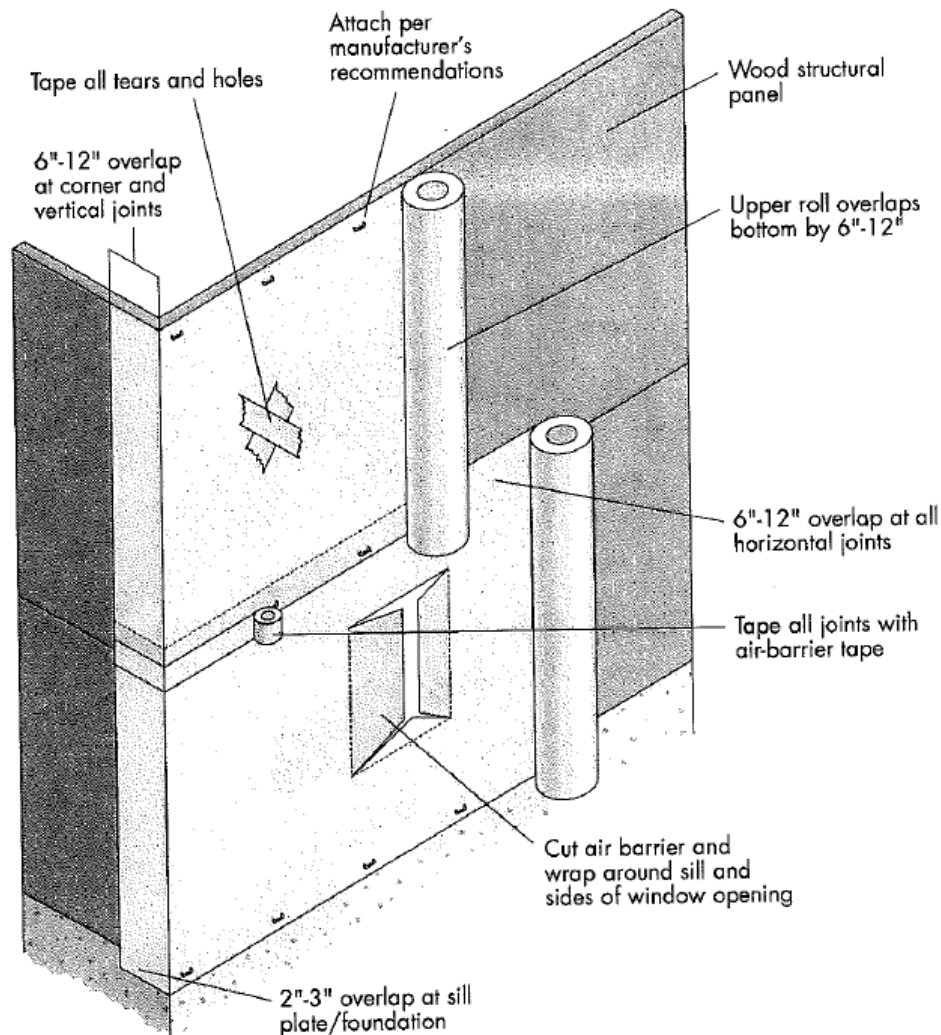


FIGURE 12.27 Proper air barrier installation details (two story wall shown—not to scale).

Ex. 1005, 121. Figure 12.27 depicts two rolls of barrier being wrapped around a building structure. *See id.*

To address the claimed “sealant sealing the joint between the proximate edges of the two adjacent panels,” Petitioner again cites to APA’s Figures 12.27 and 12.28 and finds that these figures “show [the] use of ‘seam tape’ and taping joints with air-barrier tape.” Pet. 27–28. Petitioner also cites to APA’s disclosure of “exterior sealants called caulks . . . used to

seal up the cracks between individual elements of the building's exterior finish." *Id.* at 27 (citing Ex. 1005, 112–113).

3. *Analysis*

In our Decision to Institute, we explained that the Petition did not establish that APA discloses a sealant for sealing the joint between the proximate edges of two adjacent panels, as required by the claims. Dec. Inst. 22–25. Petitioner did not address our Decision to Institute in its Reply. *See* Pet. Reply; *see also* PO Sur-Reply 1 (confirming the same; “HEW agrees with Petitioner’s implicit concession that Grounds 1 and 3 fail to show any claims of the ’479 Patent are invalid”). As explained below, we maintain our position that the Petition fails to establish that APA discloses the claimed sealant.

Each of independent claims 1, 11, and 20 recites a sealant for sealing the joint between the proximate edges of the two adjacent panels. *See* Ex. 1001, 22:6–24:20. To address this limitation, Petitioner cites to several different disclosures within APA, but the cited disclosure fails to satisfy the claimed sealant. *See* Pet. 27–28.

First, Petitioner cites to APA’s disclosure of caulk. *Id.* at 27 (citing Ex. 1005, 112–13, Fig. 12.16). The cited disclosure of APA’s caulk, however, describes:

Caulking. Elastomeric exterior sealants called caulks are a popular component of the waterproofing system used in modern structures. They are used to seal up the cracks between individual elements of the building’s exterior finish to keep wind and water from penetrating the skin of the structure. In this respect, the caulking provides a part of the walls’ first line of defense against water intrusion. The waterproofing performance

of modern structures often depends on many hundreds of feet of caulked joints.

Ex. 1005, 112–14 (second emphasis added).

APA discloses that this caulk is used as an exterior sealant applied to the exterior finish of a building, in order to serve as the “first line of defense” against water intrusion. *See id.* The disclosure does not state that these caulks are applied to seal the joints between adjacent panels of sheathing, as Petitioner asserts.

Second, Petitioner cites to APA’s Figure 12.16, which we reproduce, below:

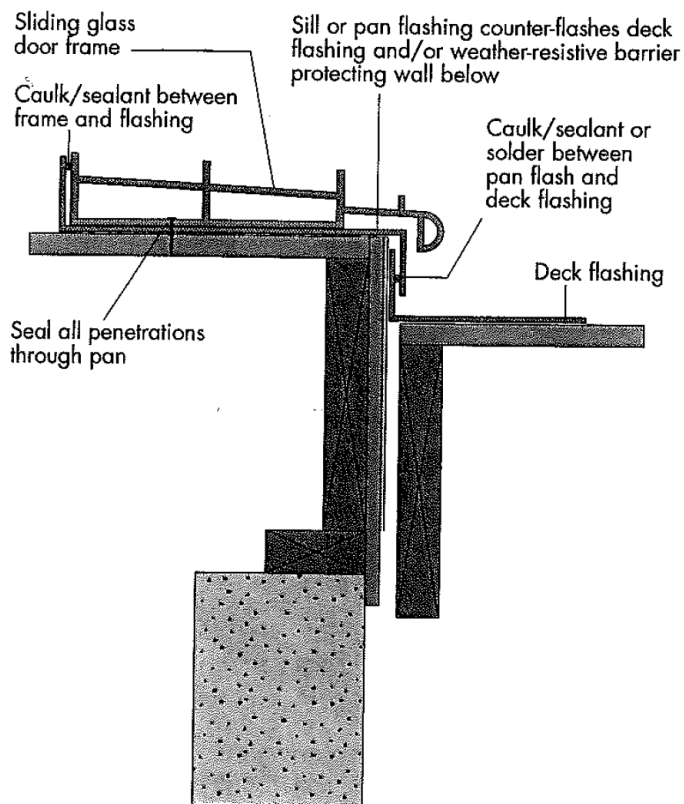


FIGURE 12.16 Sill flashing at sliding glass door.

Ex. 1005, 111. Figure 12.16 depicts sill flashing at a sliding glass door and illustrates caulk or sealant between the frame and flashing. *Id.* We do not

find anything in this figure that depicts caulking used as a sealant between the joint created by two adjacent sheathing panels, however.

Third, Petitioner cites to APA's Figures 12.27 and 12.28, asserting that these figures depict tape for sealing the claimed joints. Pet. 28.

As to Figure 12.27, the tape that Petitioner relies on seals the area where different layers of housewrap overlap, not the joints created by adjacent sheathing panels.

As to Figure 12.28, we reproduce that figure, below:

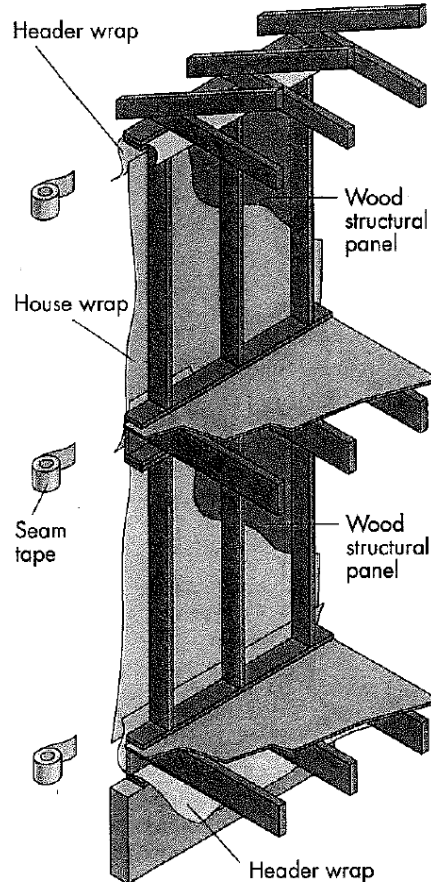


FIGURE 12.28 Air barrier installation details using header wrap.

Ex. 1005, 122. Figure 12.28 depicts “Air barrier installation details using header wrap.” *Id.* As can be seen in the above figure, APA’s seam tape is

used to seal the seams of the header wrap. We find nothing in this figure that depicts the joint formed between two adjacent sheathing panels as being sealed by the tape.

For the foregoing reasons, Petitioner fails to show by a preponderance of the evidence that APA discloses a sealant for sealing the joint between the proximate edges of two adjacent panels. As such, Petitioner has not shown by a preponderance of the evidence that APA anticipates any of claims 1, 6, 7, 9–11, 16, 17, 19, or 20.

E. Ground 2 - APA StoGuard-2001, StoGuard-2003, and other.

Petitioner contends that claims 1–20 are unpatentable over APA, StoGuard-2001, StoGuard-2003, ASTM D5795, ASTM Report, Alaska, ASTM E96, Van Wagoner, Arnold, Hsu, and Grace. Pet. 37. In challenging independent claims 1 and 11, Petitioner relies on APA, StoGuard-2001, and StoGuard-2003. *Id.* at 17, 18. In challenging independent claim 20, Petitioner relies on APA, StoGuard-2001, StoGuard-2003, Arnold, and Van Wagoner. *Id.* at 19. Because APA, StoGuard-2001, and StoGuard-2003 form the primary basis to Petitioner’s challenge, we focus our analysis on these references.

1. StoGuard-2001 (Ex. 1014)⁴

StoGuard-2001 (Ex. 1014) is a press release titled, “STO CORP. LAUNCHES STO GUARD HOUSEWARP ALTERNATIVE,” dated February 10, 2001. Ex. 1014, 1.

⁴ The terms “Sto Guard” and “StoGuard” are used interchangeably in the record. For consistency, our references to the product will be to “StoGuard.”

2. *StoGuard-2003 (Ex. 1015)*⁵

StoGuard-2003 (Ex. 1015) is a press release titled, “Sto Guard™, a seamless, fluid-applied air and moisture barrier, provides superior protection under most claddings. It does what other wraps only pretend to do.” Ex. 1015, 1. StoGuard-2003 is dated 2003. *Id.*

3. *Petitioner’s Challenge*

In challenging the claims, Petitioner relies on APA for disclosing the claimed wall panel assemblies fastened to a building structure. *See* Pet. 38–41 (addressing independent claim 1); *see also id.* at 48–51 (addressing independent claim 11); *see also id.* at 54–55 (addressing independent claim 20).

As to independent claim 1, Petitioner relies on StoGuard-2001 and StoGuard-2003 to address the claimed “barrier layer secured to the outer surface of each panel” and the claimed “sealant” for “sealing the joint” between adjacent panels. *See id.* at 38–41. In particular, Petitioner asserts that “StoGuard-2001 and StoGuard-2003 teach liquid-applied waterproof coatings applied to panel surfaces and trowel-applied filler for joints, as well as a tape-like mesh.” *Id.* at 55. StoGuard-2001 and StoGuard-2003 each teaches a waterproof Sto Gold Coat that is applied over a Sto Gold Fill,

⁵ The Petition refers to Exhibit 1015 as both “StoGuard-2002” and “StoGuard-2003.” *See, e.g.,* Pet. ii (“Ground 2”), *id.* at 17 (Ground 2, claim 1). We find that the reference to “StoGuard-2002” to be an inadvertent and harmless typographical error, and the Petition intended to refer to StoGuard-2003. For consistency in this Decision, we refer to the Exhibit 1015 as StoGuard-2003.

which itself is used to “cover joints and gaps between sheathing.” *See, e.g.,* Ex. 1014, 1.

In combining APA with StoGuard-2001 and StoGuard-2003, Petitioner reasons:

It would have been obvious to use the *StoGuard waterproof coating and joint filler* as a form of the water-resistive barrier and joint sealants of APA, motivated to improve resistance to water infiltration with a cost-effective and functionally *effective alternative to housewraps*. All claimed elements were known in the prior art, one skilled in the art could have combined the elements as claimed by known methods with no change in respective functions, and the combination yields nothing more than predictable results. Alternatively, use of the StoGuard coating and joint filler would be the simple substitution of one known element for another to obtain a predictable result, or use of a known technique to improve a similar product or method in the same way.

Pet. 56 (citations omitted) (emphases added).

As to independent claim 11, Petitioner similarly reasons,

[I]t would have been obvious to use the *StoGuard waterproof coating and joint filler* as a form of the water-resistive barrier and joint sealants of APA, motivated to improve resistance to water infiltration with a cost-effective and functionally *effective alternative to housewrap*. As discussed regarding claim 1, all claimed elements were known in the prior art, one skilled in the art could have combined (or substituted) the elements as claimed by known methods with no change in respective functions (or to improve similar method in the same way), yielding nothing more than predictable results.

Id. at 60 (citing MPEP §§ 2141.III, 2143) (emphases added).

Turning to independent claim 20, which is different from claims 1 and 11 in that claim 20 recites a “bulk water resistant *tape* sealant,” Petitioner relies largely on its analysis of claim 1, but cites to Arnold and Van

Wagoner for their teaching of a bulk water resistant tape. Ex. 1001, 24:18–20 (emphasis added); *see also* Pet. 61 (“Claim 20 is substantively the same as claim 1, but with OSB stipulated as the wall panel, and bulk water resistant tape stipulated as the joint sealant. APA’s disclosure of seam tape and Arnold’s and Van Wagoner’s teachings of bulk water resistant seam tape have been discussed regarding claim 7.”).

4. *Patent Owner’s Response*

Patent Owner argues that none of Petitioner’s cited disclosures, alone or in combination, teach the claimed sealant for sealing joints. PO Resp. 36.

As to independent claims 1 and 20 and their respective dependent claims, we agree.

Patent Owner also argues that, as to the method of independent claim 11, “the barrier layer is secured *before* the panel is positioned or fastened” (*id.* at 43) and that the “Sto Gold Coat cannot be the claimed barrier layer because it, too, is applied to the sheathing panels *after* the panels are positioned on the structure” (*id.* at 44 (citing Ex. 2034 ¶ 140)).

As to independent claim 11 and its respective dependent claims, we also agree.

We explain our positions in the following section.

5. *Analysis*

a) *Claims 1–10*

Independent claim 1 recites a “bulk water resistant sealant sealing the joint between the proximate edges of the two adjacent panels.” Ex. 1001,

22:15–16. Claims 2–10 also require the claimed sealant through their dependency to claim 1. *See id.* at 22:19–48.

To satisfy the claimed “bulk water resistant sealant,” Petitioner relies on StoGuard’s “joint fill,” which is specifically referred to as “Sto Gold Fill.” *See* Pet. 41 (“StoGuard fill taught by the above StoGuard references a bulk water resistant joint sealant, and can serve as the joint sealant of APA, or substitute for one of the specific examples thereof in APA”); *see also id.* at 56 (proposing to use StoGuard’s “joint filler” as a joint sealant); *see also* Ex. 1015, 1 (referring to the product as “Sto Gold Fill”).

The record does not support a finding that Sto Gold Fill is a bulk water resistant sealant, however. Rather, it is *Sto Gold Coat*—which is applied over the Sto Gold Fill—that is waterproof. Ex. 1015 (“**Sto Gold Coat** – a waterproof coating applied . . . to wall sheathing surfaces treated with Sto Gold Fill”). StoGuard-2001 further discloses:

Sto Gold Coat can easily be applied by roller to cementitious and non-cementitious sheathing including plywood, gypsum and glass-fiber-faced sheathing boards. Because Sto Gold Coat is roller applied, builders and contractors enjoy significantly reduced application costs over trowel application products. Sto Gold Fill is a safe, non-toxic material designed to bridge normal movement in wood sheathing. It is trowel-applied to cover joints and gaps between sheathing and around windows, ensuring continuous protection from air and moisture intrusion.

Ex. 1014, 1. From this disclosure, we find that Sto Gold Fill is used to “cover joints and gaps” between sheathing panels so that the Sto Gold Coat may later be applied over the fill to provide continuous water proofing. *See id.* Nothing in either StoGuard-2001 or StoGuard-2003 supports a finding that Sto Gold Fill itself is bulk water resistant.

Mr. Straube further confirms our understanding. We credit the testimony of Mr. Straube, who testifies, “The purpose of Sto Gold Fill® is simply to bridge the gaps between the panels and provide a surface on which to apply the waterproof Sto Gold Coat™.” Ex. 2034 ¶ 56 (citing Ex. 2037, 2).

Accordingly, and based on the record before us, we find that Sto Gold Fill fails to satisfy the claim limitation of a “bulk water resistant sealant.” For at least this reason, Petitioner has not shown by a preponderance of the evidence that APA in view of StoGuard-2001, StoGuard-2003, and the other references cited in Ground 2 renders any of claims 1–10 unpatentable.

b) Claim 20

Independent claim 20 recites a “bulk water resistant *tape sealant* sealing the joint between the proximate edges of the two adjacent panels.” *Id.* at 24:18–20 (emphasis added).

In challenging claim 20 under this ground, Petitioner explains,

Claim 20 is substantively the same as claim 1, but with OSB stipulated as the wall panel, and bulk water resistant tape stipulated as the joint sealant. APA’s disclosure of seam tape and Arnold’s and Van Wagoner’s teachings of bulk water resistant seam tape have been discussed regarding claim 7.

Pet. 61; *see also id.* at 55 (referencing “claim 1 element [c] and claim 7” in addressing the “bulk water resistant tape sealant sealing the joint between the proximate edges of the two adjacent panels”).

In combining APA, StoGuard-2001, StoGuard-2003, Arnold, and Van Wagoner, Petitioner reasons,

It would have been obvious to use the *StoGuard waterproof coating* as a form of the water-resistive barrier APA, with the water resistant tape of Arnold/VanWagoner as the joint sealant, motivated to improve resistance to water infiltration with a cost-effective and *functionally effective alternative to housewraps*.

Pet. 61 (emphases added).

As similarly discussed in connection with independent claim 1, Petitioner relies on *Sto Gold Coat's waterproof coating* as a functionally effective *alternative to housewraps*. *See id.* Sto Gold Coat, however, is applied over the Sto Gold Fill, which itself is not a bulk water resistant sealant. *See, e.g.,* Ex. 2034 ¶ 56 (“Sto Gold Fill® is not waterproof”); *see also supra* Part II.E.5.a. Indeed, we see no need for Sto Gold Fill to be waterproof as it is Sto Gold Coat that is waterproof and applied over Sto Gold Fill. *See, e.g.,* Ex. 1015 (“**Sto Gold Coat** – a waterproof coating applied . . . to wall sheathing surfaces treated with Sto Gold Fill”). Because there is no need for Sto Gold Fill to be waterproof, we are not persuaded by Petitioner’s reasoning that a skilled artisan would have used “the water resistant tape of Arnold/VanWagoner as the joint sealant” as a substitute for Sto Gold Fill, as Petitioner suggests. *See* Pet. 61. Petitioner’s proposed modification is based on impermissible hindsight.

Furthermore, Petitioner’s reasoning that the proposed modification would yield “a cost-effective and functionally effective alternative to housewraps” is also unpersuasive. *See id.* Because APA’s housewraps are water-proof barriers that already cover the joints formed between adjacent sheathing panels, we do not see any need to provide a water-resistant tape to cover those joints. *See, e.g.,* Ex. 1005, Fig. 12.27 (depicting a housewrap covering the joints formed between adjacent sheathing panels).

Based on the record before us, we are not persuaded that a skilled artisan would have combined the teachings of APA, StoGuard-2001, StoGuard-2003, Arnold, and Van Wagoner to arrive at the claimed “bulk water resistant tape sealant.” For at least this reason, Petitioner has not shown by a preponderance of the evidence that APA in view of StoGuard-2001, StoGuard-2003, and the other references cited in Ground 2 renders claim 20 unpatentable.

c) Claims 11–19

In its challenge of independent claim 11, Petitioner reasons that “it would have been obvious to use the *StoGuard waterproof coating and joint filler* as a form of the water-resistive barrier and joint sealants of APA, motivated to improve resistance to water infiltration with a cost-effective and functionally effective *alternative to housewrap*.” Pet. 60 (citing MPEP §§ 2141.III, 2143) (emphases added). In a nutshell, Petitioner relies on the *Sto Gold Fill* for satisfying the claimed step of “sealing the joint between the edges of the panel” (*id.* at 50–51 (citations omitted)) and *Sto Gold Coat* for satisfying the claimed “barrier layer secured to the outer surface of each panel” (*id.* at 49 (citations omitted)).

Petitioner’s proposed combination, however, fails to satisfy the order of steps required by the method of claim 11.

As discussed above, we interpret claim 11 to require the “adjacent structural wall panels” to each have a “barrier layer secured to the outer surface of each panel” *before* the panels are fastened to the structure, and *before* the joint between the edges of the adjacent panels are sealed. *Supra*

Part II.A.1. Claims 12–19 depend from claim 11 and require this same order of steps. *See* Ex. 1001, 22:49–24:6.

Petitioner proposes to use the StoGuard waterproof coating and joint filler as a “functionally effective alternative to [APA’s] housewrap.” Pet. 60. StoGuard-2001 and StoGuard-2003 collectively disclose the application of Sto Gold Fill and Sto Gold Coat *after* the panels are fastened to the building structure, however. Exs. 1014, 1015. Indeed, Sto Gold Fill “is trowel-applied to cover joints and gaps between sheathing,” and StoGuard-2001 teaches that Sto Gold Fill is applied after the panels are applied to the building structure. Ex. 1014, 1. Moreover, Sto Gold Coat is applied over Sto Gold Fill, so the Sto Gold Coat must also be applied after the panels are assembled on the building structure. *See id.*; *see also* Ex. 2034 ¶ 56 (confirming the same).

Because Sto Gold Coat—the claimed “barrier layer”—is applied *after* the wall panel assemblies are fastened to the building structure, Petitioner’s proposed combination fails to satisfy the claimed order of steps.

In its Reply Brief, Petitioner attempts to address this shortcoming by asserting that its “cited combination still includes sufficient support to render Claim 11 obvious even if claim 11 is interpreted to require pre-application of the Sto Gold® barrier layer prior to installation on the structure.” Pet. Reply 21. Petitioner’s argument, however, directly contradicts the express teaching of StoGuard-2001 and StoGuard-2003. Specifically, StoGuard-2003 teaches that the Sto Gold Coat is applied after the Sto Gold Fill is applied over the joints. *See* Ex. 1015 (“**Sto Gold Fill** – a spray or trowel applied joint treatment . . . **Sto Gold Coat** – a waterproof coating applied . . . to wall sheathing surfaces treated with Sto Gold Fill”). As such, Petitioner’s

argument in its Reply that a skilled artisan would have found it obvious to apply Sto Gold Coat before the panels are fastened to the building structure, and before the Sto Gold Fill is used as a joint treatment, is contradicted by the explicit teachings of StoGuard-2001 or StoGuard-2003.

Based on the record before us, Petitioner's proposed combination of APA, StoGuard-2001, StoGuard-2003, and the other cited references fails to satisfy the order of steps required by independent claim 11. Furthermore, claims 12–19 depend from claim 11, and Petitioner's challenge of the dependent claims also suffers from the same infirmity. As such, Petitioner has not shown by a preponderance of the evidence that APA in view of StoGuard-2001, StoGuard-2003, and the other references cited in Ground 2 renders any of claims 11–19 unpatentable.

d) Summary

For the foregoing reasons, Petitioner has not shown by a preponderance of the evidence that any of claims 1–20 are unpatentable under Ground 2.

F. Ground 3 - APA and SmartSide-MSDS, ICBO, and SmartSide-2001 et al.

Petitioner contends that claims 1–20 are unpatentable over APA, SmartSide-MSDS, ICBO, SmartSide-2001, ASTM D5795, ASTM Report, Alaska, ASTM E96, Van Wagoner, Arnold, Hsu, and Grace. Pet. 62. Petitioner relies primarily on APA, SmartSide-MSDS, ICBO, and SmartSide-2001 in its challenge. *See id.* at 19–20. Our analysis focuses on these references.

1. *SmartSide-MSDS (Ex. 1011)*

SmartSide-MSDS is a product summary of LP SmartSide. Ex. 1011, 1, 4.

2. *ICBO (Ex. 1012)*

ICBO is an “ES Report” issued March 1, 2002. Ex. 1012. ICBO describes, in-part, the “SmartSystem Siding.” *Id.* at 2 (“2.6.1 SmartSystem Siding: General: L-P SmartSystem sidings are a composite product consisting of an engineered wood substrate containing zinc borate bonded to a phenolic resin-saturated, primed paper overlay with glue line”).

3. *SmartSide-2001 (Ex. 1013)*

SmartSide-2001 is “Application Instructions” for SmartLap, SmartPanel, SmartSide, and SmartPanel. Ex. 1013.

4. *Petitioner’s Challenge*

Petitioner relies on APA for disclosing wood structural panels and exterior sealants (caulks) as discussed above. *See* Pet. 62–63 (citing, in-part, Ex. 1005, Figs. 2.6, 2.7, 12.27, and 12.28). Petitioner also relies on SmartSide-2001 for teaching “the application of treated (including a water-resistant overlay) engineered wood siding, including panels, to building structures, and shows panels with aligned edges with an 1/8 [inch] gap forming joints.” *Id.* at 63 (citing Ex. 1013 1, 3). Petitioner further asserts that “SmartSide MSDS and ICBO disclose the water-resistant barrier being a phenolic resin-impregnated paper overlay secured (via glue line) to the outer

surface of a panel.” *Id.* at 63–64 (citing Exs. 1012, 1014). In combining APA with the cited art, Petitioner reasons:

It would have been obvious to use the SmartGuard paper overlay as a form of or in place of the kraft waterproof building paper or “other” water-resistive barrier of APA, and the SmartGuard caulk joint sealant as instructed as a form of or in place of the caulk, seam tape, or air-barrier tape of APA, motivated to improve resistance to air leakage and water infiltration resistance through the wall construction as a cost-effective and more effective alternative. A person of ordinary skill also would recognize the benefit of less labor required, as the SmartGuard paper overlay is applied during manufacturing (i.e., at the factory), thereby avoiding the time, expense and possible loss of effectiveness in on-site applications of the barrier layer.

Pet. 64 (emphases added).

5. Analysis

In our Decision to Institute, we explained that we are not persuaded that a skilled artisan would have combined APA with SmartSide-MSDS, ICBO, and SmartSide-2001, as Petitioner has done. Dec. Inst. 36. Petitioner did not address our Decision to Institute in its Reply. *See generally* Pet. Reply; *see also* PO Sur-Reply 1 (confirming the same; “HEW agrees with Petitioner’s implicit concession that Grounds 1 and 3 fail to show any claims of the ’479 Patent are invalid”). We maintain our position that the Petition fails to establish that a skilled artisan would have combined APA with the other cited art.

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic*, 815 F.3d at 1363 (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the

evidence that supports the grounds for the challenge to each claim’’)).

Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

Petitioner reasons that a skilled artisan would have used “SmartGuard paper” overlay “in place of APA’s water-resistive barrier,” yet fails to identify anything in the record that describes what this SmartGuard paper is. *See* Pet. 63–64. We cannot confirm that the paper is applied during manufacturing, as Petitioner asserts. *See id.* at 64 (Petitioner arguing that “the SmartGuard paper overlay is applied during manufacturing (i.e., at the factory)’’).

Petitioner cites to the entirety of Exhibits 1012 and 1014 (Pet. 64) for disclosing a “water-resistant barrier being a phenolic resin-impregnated paper overlay secured (via glue line) to the outer surface of a panel” (*id.* at 63–64), yet we find no mention of SmartGuard overlay in either exhibit.

Even if we give Petitioner the benefit of the doubt, and that it intended to cite to the *SmartSide* product of Exhibits 1011, 1012, and 1013, and that reference to *SmartGuard* was an inadvertent typographical error, we are still unpersuaded that a skilled artisan would have modified APA as Petitioner has done. The most relevant disclosure we can find to support Petitioner’s modification is that the “L-P SmartSystem sidings are a composite product consisting of an engineered wood substrate containing zinc borate, *bonded to a phenolic resin-saturated, primed paper overlay with glue line.*” Ex. 1012, 2 (emphasis added). We do not find this disclosure as motivating a skilled artisan to replace APA’s housewrap, as Petitioner proposes. *See* Pet. 64.

Furthermore, the SmartSide product appears to be an *exterior siding product*, not a paper overlay secured to the outer surface of a sheathing panel. *See, e.g.*, Ex. 1011, 1 (“LP SmartSide, Siding & Exterior Trim”); *see also, e.g.*, Ex. 1013, 1 (“General . . . Apply *siding* in a manner that prevents moisture intrusion and water buildup” (emphasis added)). Rather than disclose an improved water-resistant paper overlay named “SmartGuard,” SmartSide-2001 instructs us that “[a]ll exposed wood substrate must be *primed and painted in a manner that prevents moisture intrusion* and water buildup.” Ex. 1013, 1, General (emphasis added). If anything, SmartSide teaches the application of paint or primer to exposed wood substrates, not an improved paper overlay, as Petitioner contends. *See* Pet. 64 (“SmartGuard paper overlay as a form of or in place of . . . waterproof building paper or ‘other’ water-resistive barrier of APA”).

For the foregoing reasons, Petitioner failed to “show with particularity why the patent it challenges is unpatentable.” *Harmonic*, 815 F.3d at 1363. We are not persuaded that a skilled artisan would have modified APA based on the teachings of SmartSide-MSDS, ICBO, and SmartSide-2001 to arrive at the challenged claims. Accordingly, Petitioner has not shown by a preponderance of the evidence that APA in view of SmartSide-MSDS, ICBO, and SmartSide-2001 renders any of claims 1–20 unpatentable.

III. CONCLUSION

Petitioner has not shown that any of claims 1–20 of the ’479 patent is unpatentable.

IV. ORDER

Weighing the evidence of the disclosure of the references, the competing testimony, and the reasoning to combine the references, we determine that Petitioner has not shown by a preponderance of the evidence that any of claims 1–20 of the '479 patent is unpatentable.

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 6, 7, 9–11, 16, 17, 19, 20	102(a)	APA		1, 6, 7, 9–11, 16, 17, 19, 20
1–20	103(a)	APA, StoGuard- 2001, StoGuard- 2003, ASTM D5795, ASTM Report, Alaska, ASTM E96, Van Wagoner, Arnold, Hsu, Grace		1–20
1–20	103(a)	APA, SmartSide- MSDS, SmartSide- 2001, ICBO, ASTM D5795, ASTM Report, Alaska, ASTM E96, Van Wagoner, Arnold, Hsu, Grace		1–20
Overall Outcome				1–20

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