IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHAL DIVISION

PROMETHEAN INSULATION TECHNOLOGY LLC,	§	2:13-CV-1113-JRG-RSP
	§	LEAD CASE
Plaintiff,	§	
	§	
v.	§	
	§	
SEALED AIR CORPORATION, ET AL.		

MEMORANDUM OPINION AND ORDER

Before the Court is the opening claim construction brief of Promethean Insulation Technology LLC ("Plaintiff") (Dkt. No. 99, filed on November 24, 2014), the response and motion for partial summary judgment of indefiniteness of Defendants Reflectix, Inc., Innovative Insulation, Inc., TVM Building Products, Inc., Energy Efficient Solutions, LLC, Home Depot U.S.A., Inc., Soprema, Inc. (Canada), Soprema, Inc. (United States), and Soprema U.S.A. Inc. (collectively, "Defendants") (Dkt. No. 105, filed on December 15, 2014), and the reply of Plaintiff (Dkt. No. 109, filed under seal on January 13, 2015). The Court held a hearing on the issues of claim construction and claim definiteness on February 3, 2015. Having considered the arguments and evidence presented by the parties at the hearing and in their briefing, the Court issues this Order.

Table of Contents

I. BACKGROUND

Plaintiff alleges infringement of five related United States patents: No. 7,935,410 (the "'410 Patent"), No. 7,935,411 (the "'411 Patent"), No. 8,221,871 (the "'871 Patent"), No. 8,327,601 (the "'601 Patent"), and No. 8,343,614 (the "'614 Patent") (collectively, the "Asserted Patents"). Each of the Asserted Patents is entitled "Metallized Polymeric Film Reflective Insulation Material" and name a common sole inventor, Furio Orologio. The application leading to the '410 Patent was filed on August 22, 2006 and claims priority to a Canadian patent application filed on April 19, 2006. The '410 Patent issued on May 3, 2011. The application leading to the '411 Patent was filed on June 8, 2007 and is a continuation-in-part of the application for the '410 Patent. The '411 Patent issued on May 3, 2011. The application leading to the '871 Patent was filed on April 13, 2011 and is a divisional of the application for the '410 Patent. The '871 Patent issued on July 17, 2012. The application leading to the '601 Patent was filed on April 13, 2011 and is a divisional of the application for the '411 Patent. The '601 Patent issued on Dec. 11, 2012. The application leading to the '614 Patent was filed on July 12, 2012 and is a continuation of the application for the '871 Patent. The '614 Patent issued on January 1, 2013.

In general, the Asserted Patents are directed to insulating objects with reflective insulation material that incorporate a reflective metallized polymeric film to effect an improved fire rating over reflective insulation materials that incorporate a reflective metal foil. The abstract of the '410 Patent states:

> A method of thermally insulating an object that requires a Class A standard insulation material, said method comprising suitably locating a metallized polymeric reflective insulation material adjacent said object, wherein said polymeric material is selected from a closed cell foam, polyethylene foam, polypropylene foam, expanded polystyrene foam, multi-film layers assembly and a bubble-pack assembly. The object is preferably packaging, a vehicle or a

residential, commercial or industrial building or establishment. The polymeric material may contain a fire-retardant and the bright surface of the metallized layer has a clear lacquer coating to provide anti-corrosion properties, and which maintains satisfactory reflectance commercial criteria.

Claim 1 of the '410 Patent, a representative claim to a method of thermally insulating an object, recites:

> 1. A method of thermally insulating an object that requires a Class A standard insulation material having a flame speed rating value of 0 to 25 and a smoke developed rating value of 0 to 450, said method comprising
>
> suitably locating a reflective insulation material in a thermally insulating position adjacent to said object,
>
> wherein said reflective insulation material comprises a bubble-pack assembly having a metallized polymeric film bonded thereto such that said metallized polymeric film is positioned to provide said assembly with a reflective metallized outer surface, said reflective metallized outer surface having a clear, anticorrosion lacquer protective coating thereon,
>
> wherein said metallized polymeric film with the protective coating thereon has a surface thermal emissivity equivalent to or greater than 95% reflectance and
>
> wherein said metallized polymeric film excludes a metal foil on a polymeric film, said insulation material being sufficient to satisfy the requirements for Class A thermal insulation.

Claim 1 of the '411 Patent, a representative claim to a thermally insulated object, recites:

> 1. A thermally insulated object requiring and provided with a Class A standard thermal insulation material characterized by a flame speed rating value of from 0 to 25 and a smoke developed rating value of 0 to 450, said object being insulated with said Class A standard thermal insulation material located adjacent to said object, said insulation material comprising a bubble-pack insulation assembly provided with a reflective metallized polymeric film as its exposed outer surface, said metallized polymeric film having a clear, anti-corrosion lacquer coating thereon, wherein said metallized polymeric film with the lacquer coating thereon has a surface thermal emissivity equivalent to or greater than 95% reflectance and wherein said metallized polymeric film excludes a metal foil on a polymeric film.

II. LEGAL PRINCIPLES

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See id.* at 1313; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312-13; *accord Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can aid in determining the claim's

meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id*. at 1315 (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *accord Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve the meaning of ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex*, 299 F.3d at 1325. But, "[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *accord Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc., v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the

specification, a patent applicant may define a term in prosecuting a patent."). "[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

Although extrinsic evidence can be useful, it is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Phillips*, 415 F.3d at 1317 (citations and internal quotation marks omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.* The Supreme Court recently explained the role of extrinsic evidence in claim construction:

> In some cases, however, the district court will need to look beyond the patent's intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period. *See, e.g., Seymour v. Osborne*, 11 Wall. 516, 546 (1871) (a patent may be "so interspersed with technical terms and terms of art that the testimony of scientific witnesses is indispensable to a correct understanding of its meaning"). In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the "evidentiary underpinnings" of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.

Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 841 (2015).

The "determination of claim indefiniteness is a legal conclusion that is drawn from the Court's performance of its duty as the construer of patent claims." *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001). Section 112 entails a "delicate balance" between precision and uncertainty:

> On the one hand, the definiteness requirement must take into account the inherent limitations of language. Some modicum of uncertainty, the Court has recognized, is the price of ensuring the appropriate incentives for innovation. . . . At the same time, a patent must be precise enough to afford clear notice of what is claimed, thereby apprising the public of what is still open to them. Otherwise there would be a zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims. And absent a meaningful definiteness check, we are told, patent applicants face powerful incentives to inject ambiguity into their claims. . . . Eliminating that temptation is in order, and the patent drafter is in the best position to resolve the ambiguity in patent claims.

Nautilus Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120, 2128–29 (2014) (citations omitted). Therefore, in order for a patent to be definite under § 112, ¶ 2,[1] "a patent's claims, viewed in light of the specification and prosecution history, [are required to] inform those skilled in the art about the scope of the invention with reasonable certainty." *Id.* at 2129. The determination of "definiteness is measured from the viewpoint of a person skilled in the art at the time the patent was filed." *Id.* at 2128 (emphasis in original, citations omitted). "The definiteness requirement . . . mandates clarity, while recognizing that absolute precision is unattainable." *Id.* at 2129. This standard reflects rulings that have found that "the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter." *Id.* at 2129. "Whether a claim reasonably apprises those skilled in the art of its scope is a question of law." *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1374 (Fed. Cir. 2008). As it is a challenge to the validity of a patent, the failure of any claim in suit to comply with § 112 must be shown by clear and convincing evidence. *Nautilus*, 134 S. Ct. at 2130 n.10.

[1] As the Asserted Patents have an effective filing date earlier than Sept. 16, 2012, the pre-AIA version of 35 U.S.C. § 112 governs the definiteness analysis here.

III. CONSTRUCTION OF AGREED TERMS

The parties originally disputed the meaning of "bubble-pack assembly" and "bubble pack insulation assembly." (*See, e.g.*, Dkt. No. 99 at 24–26; Dkt. No. 105 at 27.) Before the claim-construction hearing, the parties reached an agreement that these terms do not need to be construed with the understanding that the plain and ordinary meaning of the terms encompasses "two films engaged to form a plurality of cavities." (*See* Dkt. No. 110-1 at 4, Jan. 20, 2015 P.R. 4-5(d) Joint Claim Construction Chart.)

The Court agrees with the parties' understanding and holds that **"bubble-pack assembly"** and **"bubble-pack insulation assembly"** do not need to be construed, that they are accorded their plain and ordinary meaning, and that the plain and ordinary meaning encompasses "two films engaged to form a plurality of cavities."

IV. CONSTRUCTION OF DISPUTED TERMS

The parties' positions and the Court's analysis as to the disputed terms are presented below.

A. The Class A Insulation Terms

<table>
<tr><th>Disputed Terms</th><th>Plaintiff's Proposed Construction</th><th>Defendants' Proposed Construction</th></tr>
<tr><td>"Class A standard insulation material"
('410 Patent, claims 1, 14; '601 Patent, claims 1, 3, 30)</td><td rowspan="3">An insulation material that satisfies the Class A specifications for Flame Spread Index and Smoke Developed Index as determined by the standard ASTM E-84 test without the use of a wire mesh supporting material.</td><td rowspan="3">Insulation material having a Flame Spread Index of 0 to 25 and a Smoke Developed Index of 0 to 450 as determined by the standard ASTM E-84-05 test in existence as of the effective filing date of the patents-in-suit.</td></tr>
<tr><td>"Class A standard thermal insulation material"
('411 Patent, claim 1)</td></tr>
<tr><td>"Class A standard thermal insulation"
('871 Patent, claim 1; '614 Patent, claim 1)</td></tr>
</table>

Disputed Terms	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"said insulation material being sufficient to satisfy the requirements for Class A thermal insulation" ('410 Patent, claims 1, 14)		
"A reflective Class A standard thermal insulation" ('871 Patent, claim 18; '614 Patent, claim 14)	A reflective insulation material that satisfies the Class A specifications for Flame Spread Index and Smoke Developed Index as determined by the standard ASTM E-84 test without the use of a wire mesh supporting material.	

The Class A Insulation terms are found in the claims of the Asserted Patents as follows: Claims 1, 3, and 14 of the '410 Patent each recites "Class A standard insulation material" and claims 1 and 14 each recites "said insulation material being sufficient to satisfy the requirements for Class A thermal insulation." Claims 1 and 11 of the '411 Patent each recites "Class A standard thermal insulation material." Claims 1 and 18 of the '871 Patent each recites "Class A standard thermal insulation." Claims 1, 3, and 30 of the '601 Patent each recites "Class A standard insulation material." And claims 1 and 14 of the '614 Patent each recites "Class A standard thermal insulation." [2] Because the parties' arguments and proposed constructions treat these terms as related, the Court addresses them together.

The Parties' Positions

Plaintiff submits that: (1) its proposed constructions capture "one of the defining aspects of the claimed invention" and are consistent with the Asserted Patents' specifications and prosecution histories, and that Defendants' proposed constructions are inconsistent with the

[2] The Court notes that claim 2 of the '411 patent, Claim 2 of the '871 Patent, and claim 2 of the '614 Patent each recites "Class A insulation," a term not identified for construction.

teachings of the Asserted Patents and are in part duplicative of express claim language (Dkt. No. 99 at 3); (2) "Class A," when referring to insulation material in certain industries, denotes that the "material meets certain insulation performance characteristics in a given application" (*id*. at 4); (3) the "primary parameters" of the Class A rating are the material's flame spread index and the smoke developed index, which typically must be in the range 0–25 and 0–450, respectively (*id*.); and (4) in the context of the Asserted Patents, the material's flame spread index and the smoke developed index are measured using the procedure set forth in ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Material without the use of a wire mesh to support the material (*id*. at 5–7).

In addition to the claims themselves, Plaintiff cites the following intrinsic and extrinsic evidence to support its position. **Intrinsic evidence**: '410 Patent col.3 ll.46–65, col.4 ll.2–16, col.9 l.34–col.18 l.13 (Examples); '410 Patent prosecution history July 22, 2010 Inventor Decl. (Pl.'s Exh. 6), Jan. 26, 2009 Response to Office Action (Pl.'s Exh. 17). **Extrinsic evidence**: ASTM E2599–10 (Pl.'s Exh. 8); ASTM E84–05 (Pl.'s Exh. 9); ASTM E84–06 (Pl.'s Exh. 10); ASTM E84–09 (Pl.'s Exh. 11); ASTM E84–09a (Pl.'s Exh. 12); ASTM E84–09b (Pl.'s Exh. 13); ASTM E84–09c (Pl.'s Exh. 14); ASTM E84–10 (Pl.'s Exh. 15).

Defendants respond that: (1) Plaintiff's proposed construction would improperly result in a claim meaning that changes over time—as the ASTM E84 test method changes over time (Dkt. No. 105 at 9–10); (2) the test to determine whether a material qualifies as "Class A" in the context of the Asserted Patents is the same test as defined by the version of ASTM E84 in effect as of the effective filing date of the Asserted Patents, namely ASTM E84–05 (*id*. at 9–11); (3) the ASTM E84–05 test includes support of the material by a wire mesh (*id*. at 11); and (4) the

inventor did not specially redefine the Class A test or disavow any aspect of the ASTM E84-05 test to justify excluding the wire mesh support as Plaintiff proposes (*id*. at 12–15).

In addition to the claims themselves, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: ’410 Patent col.3 l.66–col.4 l.2, col.19 ll.22–42; ’411 Patent col.5 ll.13–16, col.13 ll.26–49; ’410 Patent prosecution history July 22, 2010 Inventor Decl. (Defs.’ Exh. 10), Jan. 26, 2009 Response to Office Action (Defs.’ Exh. 11); U.S. Patent App. No. 13/672,334 (continuation of ’601 Patent) prosecution history July 25, 2014 Response to Office Action (Defs.’ Exh. 9). **Extrinsic evidence**: ASTM E84–05 (Defs.’ Exh. 8); ASTM E2599–10 (Defs. Exh. 6).

Plaintiff replies that: (1) its proposed construction does not result in different meanings at different times, but rather is based on the version of the ASTM E84 in effect as of the effective filing date of the Asserted Patents (Dkt. No. 109 at 2); and (2) the then-in-effect ASTM E84 test procedures permitted the material to be supported by a wire mesh, but did not require the use of a wire mesh (*id*. 2–3).

Plaintiff cites further **extrinsic evidence** to support its position: Tokarski Depo. (Pl.’s Exh. 43).

Analysis

The parties agree that to qualify as a Class A insulation material, a material must exhibit specific fire retardant characteristics. Their dispute lies in defining the test used to determine whether the material possesses the requisite characteristics. Given the purpose and character of the inventions of the Asserted Patents as set forth in the intrinsic evidence, and the various procedures allowed by the test standard that the parties agree defined how the characteristics were measured at the effective filing date of the Asserted Patents, the Court holds that whether a

material qualifies as "Class A" under the Asserted Patents is determined by the ASTM E84–05 test procedure without the use of a wire mesh to support the material, whether or not the material also qualifies as "Class A" with the use of a wire mesh to support the material.

The inventor of the Asserted Patents, Mr. Orologio, recognized the need for insulation assemblies "having improved fire retardant standards." '410 Patent col.3 ll.43–45.[3] He explained that reflective insulation materials "must meet minimum surface burning characteristics to satisfy codes." *Id*. at col.3 ll.46–51. These characteristics are determined through measurements of the material's "Flame Spread and Smoke Developed Values." *See id*. at col.3 ll.51–52. The material is classified according to these values:

Interior Wall and Ceiling Finish	Flame Speed Value	Smoke Developed Value
Class A	0-25	0-450
Class B	26-75	0-450
Class C	76-200	0-450

Id. at col.3 ll.55–63.

The standard test to determine the Flame Spread and Smoke Developed Values was defined by ASTM E84. *See id*. at col.3 ll.46–66. That test allows for "the use of a hexagonal 50 mm steel wire mesh with 6 mm diameter steel rods spaced at 610 mm intervals to support the insulation materials" in the flame test oven. *See id*. at col.3 l.66–col.4 l.2. Mr. Orologio noted that the use of such a wire mesh to support the material was known to allow some reflective insulation materials to satisfy the Class A standard when the materials would not qualify as Class

[3] Other than their claim sets, the '410 Patent, the '871 Patent, and the '614 Patent have nearly identical specifications. The '411 Patent and the '601 Patent have nearly identical specifications (other than the claims) and essentially comprise the '410 Patent specification plus some extra material introduced in the application that led to the '411 Patent. For the purposes of this opinion, the Court primarily cites the '410 Patent realizing that the '411 Patent, the '871 Patent, the '601 Patent, and the '614 Patent have equivalent cites, and cites the '411 Patent for material not found in the '410 Patent realizing the '601 Patent has equivalent cites.

A without the use of the wire mesh support in the test. *Id*. at col.4 ll.3–8. Specifically, "the use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support. This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials." *Id*. at col.12 ll.29–35.

Mr. Orologio's invention is based on his discovery that by replacing the metallic foil in the prior art reflective insulation material with a polymer film having a metallized coating, the surface burning characteristics of the insulation material are improved when measured via the ASTM E84 test "in the absence of the wire mesh support." *See id*. at col.4 ll.9–16. His reflective insulation materials having the metallized polymeric film "provide improved safety towards fire." *Id*. at col.4 ll.34–37. The objects of his invention were to provide: (1) "metallized polymeric film reflective insulation material . . . having improved fire retardant properties," *id*. at col.4 ll.42–51; (2) "a method of thermally insulating an [object] with a Class A standard metallized polymeric reflective insulation material having improved fire retardant properties," *id*. at col.4 ll.52–55; and (3) "an improved thermally-insulated [object] having a Class A standard metallized polymeric reflective insulation material," *id*. at col.4 ll.56–59. Thus, his invention was meant to be an improvement over prior art Class A reflective insulation materials in that it would qualify as a Class A material under the ASTM E84 test without use of the wire mesh support.

Various embodiments of the metallized polymer insulation invention, and their performance in the standard ASTM E84–05 test, are described in the Asserted Patents. '410 Patent col.12 l.12–col.14 l.60 (Examples 3–6). All embodiments were tested in the flame test oven without the wire mesh support—they were self-supporting—and all qualified as Class A material. *Id*. The Asserted Patents also describe a number of metallic-foil insulation materials

that were tested under "less stringent ASTM E84 test conditions," but still without the use of the wire mesh support. *Id*. at col.14 l.61–col.15 l.28 (Examples 7–9). The Asserted Patents describe only two ASTM E84 tests that were performed with use of a wire mesh support, and they were performed under ASTM E84-00a conditions, not under ASTM E84-05 conditions, they were of prior art reflective insulation materials, and they were performed over four years before the effective filing date of the Asserted Patents. *Id*. at col.16 l.33–col.17 l.14 (Examples 14 and 15). All described embodiments of the invention that were tested under the ASTM E84-05 standard were tested without a wire mesh support to determine if they were an improvement over the state of the art—i.e., to see if the material had the Flame Spread and Smoke Developed Values to qualify as Class A material as measured without the use of the wire mesh support.

The prosecution history further indicates that Mr. Orologio's invention is directed to a reflective insulation material that qualifies as Class A material under the ASTM E84 test without the use of the wire mesh support. In the prosecution of the application leading to the '410 Patent, Mr. Orologio explained to the patent examiner that his invention was meant to address the need for reflective insulation materials that qualify as Class A under the ASTM E84 test conditions without the use of the wire mesh support. Orologio July 22, 2010 Decl. at ¶ 7 (Pl.'s Exh. 6 at 3). He stated to the patent examiner,

> As a background, it is important to note that prior to the invention of the subject application, bubble pack assemblies, commonly known as reflective insulation, included aluminum foil as the reflective component. It was thought that such assemblies were qualified to serve as Class A thermal insulation based on the results obtained when the assembly was subject to a standard flame test where it was the practice to support the assembly being tested on steel wire mesh. However, it has subsequently been shown that the available reflective insulation assemblies, based on the use of aluminum foil, did not meet Class A requirements and that **for a proper determination regarding Class A status, materials should be tested without the steel wire support conventionally used**.

Id. (emphasis added)

The Court further finds that the extrinsic evidence indicates that those in the field of reflective insulation material at or about the Asserted Patents' effective filing date shared Mr. Orologio's understanding—i.e., the wire mesh support mounting was not appropriate for an ASTM E84-05 test of reflective insulation material. For example, Section 1.3 of ASTM E84-05 states "The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such a support." (Pl.'s Exh. 9 at 1.) Section X4.7.7 of that document states that "[i]f supported on wire screen . . . materials [such as cellular plastics] may be completely engulfed in flame, and a questionable comparison is being made between the surface flame-spread of nominal 1-in. (0.039-mm) thick red oak with the burning rate of these materials." (Pl.'s Exh. 9 at 19.) Given that the ASTM E84-05 test "is intended to provide only comparative measurements of surface flame spread and smoke density measurements with that of a select grade of red oak and fiber-cement board surfaces" a "questionable comparison" with red oak will lead to a questionable result. *See* ASTM E84-05 at § 4.1 (Pl.'s Exh. 9 at 2). The standard ultimately recognized that "[f]or some building materials none of the [mounting] methods described may be applicable. In such cases, other means of support may have to be devised." *Id*. at § X1.1.1.2 (Pl.'s Exh. 9 at 13); *see also*, *id*. at § X1.1.1.3 (Pl.'s Exh. 9 at 13) (describing the listed mounting methods as "suggested"). And Defendant Reflectix's president testified that everyone in the industry knew by March 2006—months before the effective filing date of the Asserted Patents—that the ASTM E84 test standard was going to be changed to eliminate the option to use wire mesh support. *See, e.g.*, Tokarksi Depo. at 51:9–19, 100:9–17 (Pl.'s Exh. 43 at 2, 8).

Defendants' argument that the Asserted Patents do not sufficiently exclude the wire mesh support from the Class A test is unavailing. First, the ASTM E84-05 mounting methods are not

mandated, they are suggested. And the standard itself recognizes that the wire-mesh-support mounting may be inapplicable in some circumstances and notes that a different, appropriate, mounting method should be used when a described mounting means is inapplicable. Second, not only did Mr. Orologio clearly state in the intrinsic record that mounting the reflective insulation material using a wire mesh support was inappropriate for ASTM E84-05 testing of the material, those in the industry knew that such mounting was inappropriate as of the effective filing date. Finally, the intrinsic record is replete with references to the invention as or using an improved reflective insulation material that qualifies as a Class A material under the ASTM E84-05 test when mounted other than with a wire mesh support because the use of the wire mesh support does not yield a trustworthy result. Indeed, the very problem that Mr. Orologio set out to solve was to devise a reflective insulation material that qualifies as a Class A material when tested according to the ASTM E84 standard when mounted without the use of the wire mesh support. The Court's construction is consistent with what Mr. Orologio described as his invention in the Asserted Patents and their prosecution histories and Defendants' proposed construction is not. *See Inpro II Licensing, S.A.R.L. v. T-Mobile USA Inc.*, 450 F.3d 1350, 1353–57 (Fed. Cir. 2006) (limiting a claim to exclude certain technology when that technology was disparaged in the patent and when overcoming the failing of that technology was described as a purpose of the invention); *Chicago Bd. Options Exch., Inc. v. Int'l Sec. Exch., LLC*, 677 F.3d 1361, 1371–72 (Fed. Cir. 2012) (same).

Defendants argue that: (1) Mr. Orologio knew how to expressly claim testing without a wire mesh support because he included "when tested without wire mesh support" in an amended claim in a related pending Patent Application No. 13/672,334 on March 26, 2014 (Dkt. No. 105 at 12); and (2) because the claims of the Asserted Patents do not include "when tested without

wire mesh support," the claims allow for testing with a wire mesh support. At the hearing, Defendants reiterated this argument, pointing to the claim as it issued on January 20, 2015 in U.S. Patent No. 8,936,847. The Court disagrees with Defendants' conclusion. First, the intrinsic and extrinsic evidence is conclusive that Mr. Orologio's invention as claimed in the Asserted Patents was an improvement over the prior art in that it qualified as Class A without the use of the wire mesh support in the qualification test. Second, the claim in the related patent is of substantially different scope than the Class-A claims. For example, it does not recite Class A. The claim language was introduced into a substantially different claim in a related patent application roughly eight years after the effective filing date of the Asserted Patents, and nearly three years after the '410 Patent issued, and it does not overcome the evidence of the meaning of the Class A terms in the Asserted Patents as of the effective filing date.

Further, because the claims separately recite the Flame Spread and Smoke Developed values that are the defining characteristics of a Class A material, the Court will not incorporate those values into its constructions.

But the meaning of "Class A" in the claims cannot be tied to a test standard that did not exist as of the effective filing date or that could be changed in a way that changes the scope of the claims over time. As Defendants note, "[a] claim cannot have different meanings at different times; its meaning must be interpreted as of its effective filing date." *PC Connector Solutions LLC f. SmartDisk Corp.*, 406 F.3d 1359, 1363 (Fed. Cir. 2005) (citing *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 986 (Fed. Cir. 1995) (en banc)). Whether a material is Class A for purposes of the Asserted Patents is determined by the ASTM E84 test in effect as of the effective filing date, namely ASTM E84–05, but without using the wire mesh support, regardless of whether it also qualifies as Class A when using the wire mesh support.

Accordingly, the Court construes the Class A Insulation terms as follows:

- "Class A standard insulation material" means "thermal insulation material that qualifies as a Class A material under the ASTM E84-05 standard without the use of a wire mesh supporting material";
- "Class A standard thermal insulation material" means "thermal insulation material that qualifies as a Class A material under the ASTM E84-05 standard without the use of a wire mesh supporting material";
- "Class A standard thermal insulation material" means "thermal insulation material that qualifies as a Class A material under the ASTM E84-05 standard without the use of a wire mesh supporting material";
- "said insulation material being sufficient to satisfy the requirements for Class A thermal insulation" means "said insulation material being sufficient to qualify as a Class A material under the ASTM E84-05 standard without the use of a wire mesh supporting material"; and
- "a reflective Class A standard thermal insulation" means "a reflective thermal insulation material that qualifies as a Class A material under the ASTM E84-05 standard without the use of a wire mesh supporting material."

B. The Rating Value Terms

Disputed Terms	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"flame speed rating value" ('410 Patent, claims 1, 14; '411 Patent, claim 1; '601 Patent, claims 1, 30)	Flame spread index as measured by ASTM E-84 without the use of a wire mesh supporting material	No construction necessary

Disputed Terms	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"flame spread speed rating value" ('871 Patent, claim 1, 18; '614 Patent, claims 1, 14)		
"smoke developed rating value" ('410 Patent, claims 1, 14; '411 Patent, claim 1; '871 Patent, claims 1, 18; '601 Patent, claims 1, 30; '614 Patent, claims 1, 14)	Smoke developed index as measured by ASTM E-84 without the use of a wire mesh supporting material	No construction necessary

The Rating Value terms are found in the claims of the Asserted Patents as follows: Claims 1 and 14 of the '410 Patent each recites "flame speed rating value" and "smoke developed rating value." Claims 1 and 11 of the '411 Patent each recites "flame speed rating value" and "smoke developed rating value." Claims 1 and 18 of the '871 Patent each recites "flame spread speed rating value" and "smoke developed rating value." Claims 1 and 30 of the '601 Patent each recites "flame speed rating value" and "smoke developed rating value." And claims 1 and 14 of the '614 Patent each recites "flame spread speed rating value" and "smoke developed rating value." Because the parties' arguments and proposed constructions treat the terms as related, the Court addresses them together.

The Parties' Positions

Plaintiff submits that: (1) "flame speed rating value" and "flame spread speed rating value" are both synonymous with "flame spread index" as that index is defined in ASTM E84 (Dkt. No 99 at 9); (2) "smoke developed rating value" is synonymous with "smoke developed index" as that index is defined in ASTM E84 (*id*.); and (3) the rating values are described in the intrinsic record as being determined through the ASTM E84 test method without the use of the wire mesh support (*id*.).

In addition to the claims themselves, Plaintiff cites the following intrinsic and extrinsic evidence to support its position. **Intrinsic evidence**: '410 Patent col.3 ll.54–63, col.9 l.34–col.18 l.13 (Examples). **Extrinsic Evidence**: ASTM E84–05 (Pl.'s Exh. 9).

Defendants respond that: (1) the rating values are the indices as determined according to version of the ESTM E84 test procedure in effect as of the effective filing date of the Asserted Patents (*see* Dkt. No. 105 at 15–16); and (2) that the then-effective ESTM E84 test procedure did not exclude the use of a wire mesh support (*id*.).

In addition to the claims themselves, Defendants cite the following **extrinsic evidence** to support their position: ASTM E84–05 (Defs.' Exh. 8); ASTM E2599–10 (Defs. Exh. 6).

Plaintiff replies that: (1) the ASTM E84 test procedures in effect as of the effective filing date of the Asserted Patents permitted the material to be supported by a wire mesh, but did not require the use of a wire mesh (Dkt. No. 109 at 1), and (2) the intrinsic record specifies using the ASTM E-84 test procedure without using the supporting wire mesh (*id*. at 1–3).

Plaintiff cites further **extrinsic evidence** to support its position: Tokarski Depo. (Pl.'s Exh. 43).

Analysis

The parties agree that: (1) "flame speed rating value" and "flame spread speed rating value" mean the "flame spread index" of ASTM E84 and (2) the "smoke developed rating value" means the "smoke developed index" of ASTM E84. The Court agrees. The value terms are used in the Asserted Patents identically to the index terms of ASTM E84. *See, e.g.*, '410 Patent col.3 ll.54–63 (flame speed value and smoke developed value) and col.12 ll.56–67 (flame spread index and smoke developed index).

The parties disagree with respect to the process to determine these indices. In essence, this is the same disagreement that the parties have with respect to the Class A Insulation terms, and for the reasons stated above, the Court holds that these terms are defined with respect to ASTM E84–05 without the use of a wire mesh support.

Accordingly, the Court construes the Rating Value terms as follows:

- "flame speed rating value" means "flame spread index as measured under the ASTM E84-05 standard without the use of a wire mesh supporting material";
- "flame spread speed rating value" means "flame spread index as measured under the ASTM E84-05 standard without the use of a wire mesh supporting material"; and
- "smoke developed rating value" means " smoke developed index as measured under the ASTM E84-05 standard without the use of a wire mesh supporting material."

C. The Outwardly Exposed Terms

Disputed Terms	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"reflective metallized outer surface" ('410 Patent, claims 1, 14)	A reflective metallized surface that faces away from the insulated object.	A reflective metallized layer positioned externally relative the insulation material.
"a reflective metallized polymeric film as its exposed outer surface" ('411 Patent, claim 1)	A polymeric film having a reflective metallized surface that faces away from the insulated object.	
"foil free metallized outwardly exposed surface" ('871 Patent, claims 1, 18; '601 Patent, claim 1, 30)	A foil free metallized surface that faces away from the insulated object.	
"at least one outer layer of said metallized film" ('601 Patent, claim 14)	No construction necessary	

Disputed Terms	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"exposed surface" ('614 Patent, claim 1)	A surface that faces away from the insulated object.	

The outer-surface and exposed-surface terms are found in the claims of the Asserted Patents as follows: Claims 1 and 14 of the '410 Patent each recites "reflective metallized outer surface." Claims 1 and 11 of the '411 Patent each recites "a reflective metallized polymeric film as its exposed outer surface." Claims 1 and 18 of the '871 Patent each recites "foil-free metallized outwardly exposed surface."[4] Claims 1 and 30 of the '601 Patent each recites "foil-free metallized outwardly exposed surface" and claim 14 recites "at least one outer layer of said metallized film."[5] And claims 1 and 19 of the '614 Patent each recites "exposed surface," and claim 14 recites "at least one outer layer of said metallized film."[6] Because the parties' arguments and proposed constructions treat these terms as related, the Court addresses them together.

The Parties' Positions

Plaintiff submits that: (1) the outer-surface terms should be construed to recognize that the claims are directed to methods for insulating objects and to insulated objects and that Defendants' exclusive focus on the insulation material is improper (*see* Dkt. No. 99 at 10); (2) examination of the entirety of the methods for insulating an object reveals that the "suitably locating" step positions the insulation material adjacent to the object such that the material has a

[4] The Court notes that claim 6 of the '871 Patent recites "at least one outer layer of said metallized thermoplastic film" and claim 7 recites "An object as claimed in claim 6 having two outer layers."

[5] The Court notes that claim 15 of the '601 Patent recites "A method as claimed in claim 4 wherein said assembly has two outer layers."

[6] The Court notes that claim 6 of the '614 Patent recites "at least one outer layer of said metallized thermoplastic film" and claim 7 recites "An object as claimed in claim 6 having two outer layers."

surface that faces away from the object, so "outer surface" and "outwardly exposed surface" refer to the surface that faces away from the object (*see id*. at 11–12); (3) examination of the entirety of the claims to an insulated object reveals that the terms "exposed outer surface," "outwardly exposed surface," and "exposed surface" refer to the insulation material as assembled with the object to insulate the object, so the terms relate to the insulated object, not just the material (*see id*. at 12–13); and (4) statements made by the patentee in an ex parte reexamination of the '410 Patent explain that the metalized surface of the insulation material faces outward from the object being insulated (*id*. at 13–14).

In addition to the claims themselves, Plaintiff cites the following intrinsic and extrinsic evidence to support its position. **Intrinsic evidence**: '410 Patent reexamination prosecution history Dec. 1, 2011 Supplemental Submission of Request for Ex Parte Reexamination (Pl.'s Exh. 18); '411 Patent prosecution history May 2, 2011 Submission (Pl.'s Exh. 19). **Extrinsic Evidence**: ASTM C1224–03 (Pl.'s Exh. 20).[7]

Defendants respond that the plain language of the claims, the description of the inventions, and the prosecution history indicate that in an insulation material comprising a reflective metallized film bonded to a bubble-pack assembly, the metallized film is an "outer" surface if it is "positioned external to the bubble-pack assembly." (Dkt. No. 105 at 17–19.) Defendants argue that the descriptions of the invention contrast an "outer" metallized layer of the insulation with an inner layer and thus "outer" means "external." (*Id*. at 19.) Defendants further argue that in an ex parte reexamination of the '411 Patent, the patentee explained that the

[7] Plaintiff contends that the May 2, 2011 submission and the ASTM C1224-03 standard were submitted to the U.S. Patent and Trademark Office in the reexamination of the '410 Patent. (*See* Dkt. No. 99 at 13 n.12.)

metallized film is positioned "outwardly" or "externally" to the bubble-pack assembly to provide a reflective outer surface. (*Id*.)

In addition to the claims themselves, Defendants cite the following **intrinsic evidence** to support their position: '410 Patent Fig. 14, col.6 ll.4–6, col.7 ll.39–42, col.8 ll.41–45; '411 Patent col.8 ll.19–22; '411 Patent reexamination prosecution history Nov. 4, 2011 Supplemental Submission of Request for Ex Parte Reexamination (Defs.' Exh. 12).

Plaintiff replies that the outer-surface terms must be construed in the context of the entire claim in which they are found, and that the Defendants improperly isolate the claim terms to reach their proposed construction. (Dkt. No. 109 at 4–5.) Plaintiff argues that statements in the prosecution history explain that the metalized surface is both (1) positioned on the outer surface of the bubble-pack assembly and (2) positioned so that it faces away from the insulated object. (*Id*. at 5.) Plaintiff further argues that even if the statements in the reexamination of the '411 Patent that the Defendants' cite explain that the metallized film is on the outer surface of a bubble-pack assembly, the statements do not preclude that the metallized film is also facing outwardly from the insulated object, as stated elsewhere in the prosecution history. (*Id*. at 6.)

Analysis

The parties appear to equate "outer surface," "outwardly exposed surface," "exposed outer surface" and "exposed surface." Defendants would also equate "outer layer" with those terms. The parties' main dispute is with respect to the relative position of the surface (or layer) in question. Plaintiff proposes that the surface faces away from the insulated object. Defendants propose that the surface be an external surface of the insulation material.

To begin, the Court is not convinced that "exposed" and "outer" are interchangeable or that "layer" and "surface" are interchangeable.

2. (Double Bubble)
aluminum foil (2.75 Mil)
adhesive
polyethylene film (1.2 Mil)
polyethylene bubble (2 Mil)
EVA (1.2 Mil)
polyethylene bubble (2 Mil)
polyethylene film (1.2 Mil)
3. (Single Bubble)
aluminum foil (2.75 Mil)
adhesive
polyethylene film (1.2 Mil)
polyethylene bubble (2.0 Mil)
polyethylene film (1.2 Mil)
adhesive
aluminum foil (2.75 Mil)

'411 Patent col.23 ll.40–56

The term "exposed surface" is used in the Asserted Patents to describe a surface that is not enclosed or covered by the insulated object. *See, e.g.*, '410 Patent col.9 ll.51–53 ("This method is used to evaluate the flammability characteristics of finish wall and ceiling coverings when such materials constitute the exposed interior surfaces of buildings."), col.12 ll.17–20 ("The method is for determining the comparative surface burning behaviour of building materials. This test is applicable to exposed surfaces, such as ceilings or walls"). The '411 Patent describes a burn test of reflective insulation comprising foil bonded to polymer film in various configurations. '411 Patent col.23 l.16–col.24 l.60 (Example 21). "Whenever an exposed polymer film face was present in the sample the blowtorch was directed on that surface because it is the polymer surface that is exposed to the interior of the walls and ceiling of a building and which surface is generally, initially, subject to a fire within the building." *Id.* col.23 ll.27–31. Two listed samples, reproduced here, are illustrative. Sample 2 has aluminum foil on top and a polymer film on the bottom. Sample 3 has aluminum foil on the top and the bottom. The other samples are of similar configuration, with variations in the inner layers. *Id*. at col.23 ll.34–67. In sample 2, the bottom face of the bottom polymer film is the "exposed" surface because that face, when the insulation is installed, would face away from the object such that the bottom face was exposed—the aluminum foil surface would face toward the object and would not be exposed. The '411 Patent

similarly describes another sample set, having a metallized-polymer layer in place of the metallic-foil layer. *Id*. at col.24 ll.48–60.

The term "outer" as used in the Asserted Patents to describe the insulation refers to a position with respect to the insulation. For example, an "outer layer" is contrasted with an "inner layer." *See, e.g.*, '410 Patent col. 6, ll.4–6 ("The assembly, as hereinabove defined, may have at least one outer layer of metallized thermoplastic film, or, surprisingly, one or more inner, only, layers"); FIG. 14 (referring to the outermost layer of the bubble-pack assembly as an "outer layer" without reference to an object insulated by the assembly).

The term "layer" as used in the Asserted Patents to describe the insulation refers to the various films and foils stacked to form the insulation. *See, e.g.*, '410 Patent col.4 ll.9–15 ("substitution of metallic foil, particularly, aluminum foil, with a metallized, particularly, aluminum, coating on an organic polymer layer . . . favourably enhances the surface burning characteristics of the reflective insulation in the aforesaid ASTM E84 test in the absence of the wire mesh support"), col.4 ll.17–20 ("the presence of a fire retardant compound in or on one or more of the polymer layers of a reflective insulation assembly further favourably enhances the surface burning characteristics of the insulation"), col.5 ll.32–35 ("the use of at least one layer of metallized thermoplastic film provides enhanced fire retardant properties over those having only a corresponding layer(s) of aluminum foil"), col.8 ll.41–45 ("FIG. **14** is a bubble-pack-scrim laminated blanket assembly having polyethylene layers **112**, **114**, **116** and **118** and scrim layer

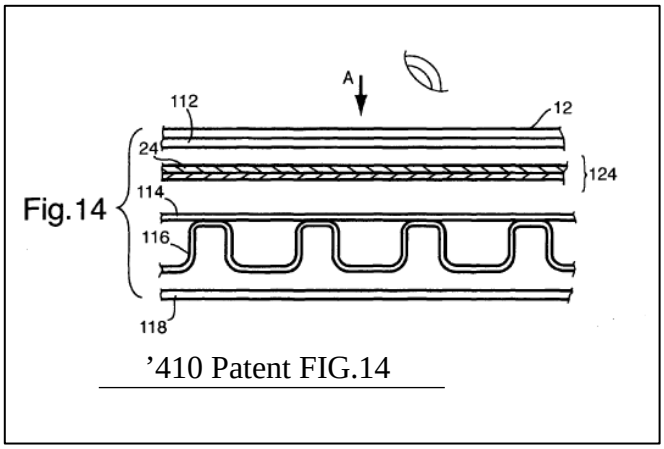

Fig.14

'410 Patent FIG.14

126 with nylon tapes **124** laminated between layers **112** and **114**. Adhered to outer layer **112** is a metallized PET layer **12**.").

The term "surface" as used in the Asserted Patents to describe the insulation refers to the surfaces of the layers. *See, e.g.*, '410 Patent col.3 ll.35–39 ("Metallized films and their methods of production are well-known in the art. One technique is to evaporate an extremely thin layer of nearly pure aluminum onto a surface of the non-porous plastics material under vacuum by a so-called 'vacuum metallizer.'"), col.7 ll.23–27 ("a clear polymeric lacquer coating applied to the metallic layer having the higher reflectivity (bright) surface as the outer layer provides a protective layer to manual handling without significant loss of reflectance"), col.19 ll.3–10 ("Standard Surface Emittance (reflectivity) tests . . . with the embodiments shown in FIG. **3** and FIG. **17** gave a measured emittance of 0.30 (65% reflectance) for the dull surface of the metallized coated PET material and a value of 0.06 (96% reflectance) for the shiny surface.").

For the terms that do not include "exposed," the Court agrees with Defendants' proposed construction in so far as "outer" refers to a position with respect to the insulation material. For example, in the following phrase from claim 1 of the '410 Patent, the metallized polymeric film is claimed as "positioned" with respect to the bubble-pack assembly without reference to the insulated object:

> suitably locating a reflective insulation material in a thermally insulating position adjacent to said object,
>
> wherein said reflective insulation material comprises a bubble-pack assembly having a metallized polymeric film bonded thereto such that said metallized polymeric film is positioned to provide said assembly with a reflective metallized outer surface, said reflective metallized outer surface having a clear, anticorrosion lacquer protective coating thereon.

Given that the Asserted Patents distinguish between "inner" and "outer" with respect to the insulation material itself rather than with respect to the insulation material as located on the

insulated object, Defendants' proposed construction best matches the claim language and aligns with the description of the invention. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc) ("'The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.'" (quoting *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)).

For the terms that include "exposed," the Court agrees with Plaintiff's proposed construction. For example, in the following phrase from claim 1 of the '411 Patent, the outer surface of the metallized polymeric film is claimed as exposed with respect to the insulated object:

> said object being insulated with said Class A standard thermal insulation material located adjacent to said object, said insulation material comprising a bubble-pack insulation assembly provided with a reflective metallized polymeric film as its exposed outer surface.

Given that the Asserted Patents describe the various embodiments of the invention as having an insulation material with an "exposed" surface with respect to the insulation material as located on the insulated object, Plaintiff's proposed construction best matches the claim language and aligns with the description of the invention. *See Phillips*, 415 F.3d at 1316 ("'The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.'" (quoting *Renishaw*, 158 F.3d at 1250). Plaintiff's proposed construction also gives separate effect to the words "exposed" and "outer," and thus the word "exposed" is not rendered superfluous, as it is under Defendants' proposed construction. *See id.* at 1314 (reasoning that the phrase "steel baffles" "strongly implies that the term 'baffles' does not inherently mean objects made of steel"); *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) ("claims are interpreted with an eye toward giving effect to all terms in the claim"). And contrary to Defendants' argument, the word "its" in the claim

phrase "as its exposed outer surface" does not mandate Defendants' construction. True, "its" in the phrase refers to "said insulation material" in the claim. But "said insulation material" refers to "Class A standard insulation material located adjacent to said object." Thus, the "exposed outer surface" is of the outer surface of the insulation material that is exposed when the insulation material is located adjacent to the insulated object.

Finally, the Court rejects Defendants' proposed construction in so far is it equates the words "layer" and "surface." These terms are used in differently in the Asserted Patents. And Defendants' proposed construction not only fails to capture the differences, it runs counter to the presumption that "different terms in the claims connotes different meanings." *See CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("we must presume that the use of . . . different terms in the claims connotes different meanings").

Accordingly, the Court construes the Outwardly Exposed terms as follows:

- "reflective metallized outer surface" means "reflective metallized surface that faces away from the insulation material";
- "foil-free metallized outwardly exposed surface" means "foil-free metallized surface that faces away from the insulated object";
- "a reflective metallized polymeric film as its exposed outer surface" means "a polymeric film having a reflective metallized surface that faces away from the insulated object";
- "exposed surface" means "surface that faces away from the insulated object"; and
- "at least one outer layer of said metallized film" means "at least one reflective metallized layer positioned externally relative to the insulation material."

D. The Surface Emissivity Terms

Disputed Terms	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"a surface thermal emissivity equivalent to or greater than 95% reflectance" ('410 Patent, claims 1, 14)	The measure of the percentage of infrared radiation reflecting from the surface is equal to or greater than 95%	The measure of the percentage of thermal radiation reflecting from the surface is greater than 95%.
"the surface thermal emissivity is equivalent to or greater than 95% reflectance" ('871 Patent, claim 24; '601 Patent, claim 36, '614 Patent, claim 20)		
"wherein said metallized polymeric film with the lacquer coating thereon has a surface thermal emissivity equivalent to or greater than 95% reflectance" ('411 Patent, claim 1)		
"effective surface emissivity of said exposed surface" ('871 Patent, claim 1; '614 Patent, claim 1)	An emittance of the exposed surface less than or equal to .1	An emittance of the surface less than 0.05
"an effective surface emissivity of the exposed surface" ('871 Patent, claim 23; '601 Patent, claim 35; '614 Patent, claim 19)		
"a surface thermal emissivity sufficient to meet required emissivity" ('601 Patent, claim 1)	An emittance of the surface less than or equal to .1	

The Surface Emissivity terms are found in the claims of the Asserted Patents as follows: Claims 1 and 14 of the '410 Patent each recites "a surface thermal emissivity equivalent to or greater than 95% reflectance." Claims 1 and 11 of the '411 Patent each recites "surface thermal emissivity equivalent to or greater than 95% reflectance." Claims 1 and 23 the '871 Patent each

recites "effective surface emissivity" and claim 24 recites "surface thermal emissivity is equivalent to or greater than 95% reflectance." Claim 1 of the '601 Patent recites "surface thermal emissivity sufficient to meet required emissivity," claim 35 recites "an effective surface emissivity of the exposed surface," and claim 36 recites "a surface thermal emissivity is equivalent to or greater than 95% reflectance."[8] And claims 1 and 19 of the '614 Patent each recites "an effective surface emissivity of the exposed surface" and claim 20 recites "the surface thermal emissivity is equivalent to or greater than 95% reflectance." Because the parties' arguments and proposed constructions treat these terms as related, the Court addresses them together.

The Parties' Positions

Plaintiff submits that: (1) within the field of the invention, the prosecution history, and the description of the invention, "thermal emissivity" refers to the emissivity of infrared radiation (Dkt. No. 99 at 16–19), (2) an emissivity "equivalent to or greater than 95% reflectance" refers to an emissivity that is 95% or greater reflectance (*id*. at 19–22), and (3) an emissivity is considered "effective" or "sufficient to meet required emissivity" according to relevant industry standards if it is less than or equal to 0.1, and the terms are used in the patent as in they were in industry (*id*. at 22–24).

In addition to the claims themselves, Plaintiff cites the following intrinsic and extrinsic evidence to support its position. **Intrinsic evidence**: '410 Patent col.6 ll.65–67, col.19 ll.1–10; '410 Patent prosecution history Sept. 2, 2009 Office Action (Pl.'s Exh. 31), March 24, 2010 Office Action (Pl.'s Exh. 30), Apr. 22, 2010 Response to Office Action (Pl.'s Exh. 35); '411 Patent prosecution history Sept. 1, 2009 Office Action (Pl.'s Exh. 34), Dec. 31, 2009 Response

[8] The Court notes that claim 29 of the '601 Patent recites "an emissivity of no more than 0.04 or a reflectance of greater than 95%."

to Office Action (Pl.'s Exh. 39), March 8, 2010 Supplemental Response to Office Action (Pl.'s Exh. 36), March 25, 2010 Office Action (Pl.'s Exh. 33), May 4, 2010 Office Action (Pl.'s Exh. 32); U.S. Patent App. No. 13/672,334 (continuation of '601 Patent) prosecution history November 13, 2014 Notice of Allowance (Pl.'s Exh. 37). **Extrinsic Evidence**: ASTM C727–01 (Pl.'s Exh. 38); ASTM C1224–03 (Pl.'s Exh. 24); ASTM C1371–04a (Pl.'s Exh. 25); RIMA Int'l, *Understanding and Using Reflective Insulation Barriers and Radiation Control Coating* (2d. ed. May 2002) (Pl.'s Exh. 21); Innovative Insulation Inc. webpages (Pl.'s Exhs. 22 and 23); Energy Efficient Solutions webpage (Pl.'s Exh. 26); tvm Building Products, *Technical Data Sheet Between-Joint Insulation* (Pl.'s Exh. 27); Innovative Energy, Inc., *Astro-Therm Thermal Insulation* (Pl.'s Exh. 28); Insulation Solutions, *Radiant Shield Flexible Attic Radiant Barrier* (Pl.'s Exh. 29).

Defendants respond that: (1) "thermal emissivity" refers to thermal radiation and that Plaintiff's proposed "infrared radiation" is ambiguous because it is not clear what wavelengths are considered "infrared" and it is inaccurate because it does not capture all wavelengths of thermal radiation (*see* Dkt. No. 105 at 24); (2) an emissivity "equivalent to or greater than 95% reflectance" refers to an emissivity that is greater than 95% reflectance because the patentee disavowed 95% reflectance in the prosecution of the application for the '411 Patent and because there is no written description support for an emittance equal to 95% reflectance (*id*. at 21–23); and (3) an emissivity is "effective" or "sufficient to meet required emissivity" in the context of the Asserted Patents if it is less than 0.05 because emissivity and reflectance sum to approximately 1 and the prosecution history dictates that reflectance must be greater than 0.95 (*id*. at 25–26).

In addition to the claims themselves, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '411 Patent col.4 ll.60–65, col.7 ll.28–30, col.8 ll.11–18, col.22 ll.32–34; '601 Patent col.7 l.65–col.8 l.15; '410 Patent prosecution history March 8, 2010 Supplemental Response to Office Action (Defs.' Exh. 18); '411 Patent prosecution history June 19, 2009 Amendment Accompanying Request for Continued Examination (Defs.' Exh. 13), Sept. 1, 2009 Office Action (Defs.' Exh. 14), Dec. 31, 2009 Response to Office Action (Defs.' Exh. 15), March 8, 2010 Supplemental Response to Office Action (Defs.' Exh. 16), U.S. Patent Publ'n No. 2007/0245664 (Defs.' Exh. 17), March 25, 2010 Office Action (Defs.' Exh. 19). **Extrinsic evidence**: ASTM C1224–03 (Defs. Exh. 20).

Plaintiff replies that: (1) the insulation industry, including Defendants, use "emissivity" and "reflectance" to refer to a material's ability to emit or reflect infrared radiation and the Patent Office understood the terms to be used that way during examination of the applications for the Asserted Patents (Dkt. No. 109 at 7); (2) the amendment of pending claims to restrict the emissivity to greater than 95% reflectance during prosecution of an application cannot qualify as a disavowal of 95% when the pending claims were later amended in prosecution to expressly encompass emissivity equivalent to or greater than 95% reflectance and the Asserted Patents issued with, and their descriptions support, the broader claim language (*id*. at 8–9); and (3) that even if the prosecution history dictated that "equivalent to or greater than 95% reflectance" means "greater than 95% reflectance" the "effective" and "sufficient" emissivity terms are independent of the "equivalent to or greater than 95% reflectance" terms and the prosecution history related to the "equivalent to or greater than 95% reflectance" terms cannot constitute a disavowal of what constitutes "effective" or "sufficient" emissivity (*id*. at 10–11).

Plaintiff cites further **intrinsic evidence** to support its position: ’410 Patent col.1 ll.33–35, col.4 ll.42–44, col.7 ll.23–35; ’411 Patent col.7 l.66–col.8 l.10, col.22 ll.13–16; ’410 Patent prosecution history U.S. Patent Publ’n No. 2007/0248805 (Pl.’s Exh. 44); ’411 Patent prosecution history April 22, 2010 Response to Office Action (Pl.’s Exh. 45), Aug. 25, 2010 Supplemental Response to Office Action (Pl.’s Exh. 46), Feb. 11, 2011 Request for Continued Examination (Pl.’s Exh. 47).

Analysis

The parties agree that emissivity and reflectance refer to a material’s ability to emit and reflect radiation. There are three issues in dispute with respect to the Surface Emissivity terms: (1) whether the emissivity and reflectance terms refer to the emissivity and reflectance of thermal radiation or of infrared radiation; (2) whether a disclaimer by amendment attaches to the “equivalent to or greater than 95% reflectance” terms when the amended claims never issued as amended; and (3) whether an “effective” and “sufficient” emissivity refers to an emittance of less than or equal to 0.1 or to an emittance of less than 0.05.

Infrared / Thermal Radiation. There are two references to “radiation” in the Asserted Patents. The first reference explains that the metallized polymer is used to reflect **infrared radiation**. ’410 Patent col.6 ll.65–67 (“The bubble-pack further comprises one or more organic polymer films metallized with a suitable metal, for example, aluminum to enhance reflection of infra-red radiation.”). The second reference explains that an effective lacquer coating on the metallized polymer protects the metallized polymer from corrosion while maintaining the layer’s ability to reflect **thermal radiation**. ’411 Patent at col.8 ll.11–16 (“Thus, by anti-corrosion effective clear lacquer in this specification is meant that the layer coating has a sufficient thickness to provide effective anti-corrosion protection to the metallized layer while providing an

emissivity reading of no more than 0.04, i.e. that at least 96% of thermal radiation is reflected from that face."). There is not a clear definition of "thermal radiation" as "infrared radiation," or of "thermal emissivity" as "emissivity of infrared radiation."

Plaintiff points to statements by the patent examiner in the prosecution history and extrinsic evidence to support its argument that "thermal emissivity" refers to emission/reflectance of infrared radiation. (Dkt. No. 99 at 17–19.) But these references can equally be interpreted to mean that thermal emissivity refers to emission/reflectance of thermal radiation, which includes infrared radiation. The example extrinsic evidence provided by Plaintiff on page 17 of its opening brief is illustrative: "emittance" is defined as "refer[ing] to the ability of a material's surface to emit radiant energy." (*Id.* at 17.) The same section that defines emittance goes on to explain that "The lower the emittance of a material, the lower the heat (infra-red radiant energy) radiated from its surface." (*Id.*) The fact that the document refers to "infrared radiant energy" can be interpreted to mean that the term "radiant energy" does not inherently mean infrared radiant energy. *See Phillips*, 415 F.3d at 1314 (reasoning that the phrase "steel baffles" "strongly implies that the term 'baffles' does not inherently mean objects made of steel").

The Asserted Patents identify a standard by which the emissivity values are determined, namely ASTM C1371-04a. '410 Patent col.19 ll.1–10 (Example 16); '411 Patent col.22 ll.5–46 (Example 19). The Court finds that the ASTM standard sets forth a "means of quantifying the emittance of opaque, highly thermally conductive materials near room temperature." ASTM C1371-04a § 1.1 (Pl.'s Exh. 25 at 2). While the standard does caution that it does not apply to materials that are "transparent to infrared radiation" it does not state that the measurement is restricted to infrared radiation. See ASTM C1371-04a § 5.1.3 (Pl.'s Exh. 25 at 4). This can be

interpreted to mean that the standard measures emissivity with respect to thermal radiation and that thermal radiation includes, but is not limited to, infrared radiation.

Given that the term is "thermal emissivity" and not "infrared emissivity" the Court prefers Defendants' construction, but modified to explicitly recognize that thermal radiation includes infrared radiation. The Court also notes that the thermal emissivity in the Asserted Patents is determined according to ASTM C1371-04a, and that standard refers to a measurement "near room temperature." The Court's construction does not render the ASMT C1371-04a test inapplicable.

Equivalent to or greater than 95% reflectance. The Court rejects Defendants' argument that the patentee somehow disclaimed 95% from the "equivalent to or greater than 95%" claim language. While Mr. Orologio did at one point narrow his claims to "greater than 95%" in the course of prosecuting the '411 Patent application, *see* Dec. 31, 2009 Response to Office Action at 2 (Defs.' Exh. 15 at 3), he later amended the claims to recite "equivalent to or greater than 95%"—and clearly announced such to the patent examiner, *see* Mar. 8, 2010 Response to Office Action at 5 (Pl.'s Exh. 36 at 3). It can hardly be said that he narrowed his claims to secure issuance of the patent when he actually broadened his claims in prosecution and it was the broader claims that issued. Defendants' reliance on *United Video Props. v. Amazon.com, Inc.*, 561 F. App'x 914 (Fed. Cir. 2014) is unfounded. That case considered an issued claim that was narrowed by amendment in the course of prosecution. *Id*. at 917–18. Here, while the claims were narrowed by amendment at one point in the prosecution, they were later broadened by amendment. And it is the broadened claim that issued that we are considering. There cannot be a clear and unmistakable disavowal of claim scope when an applicant expressly and overtly injects into the pending claims the very subject matter asserted to be disavowed. *See*

id. at 917 ("We do not rely on the prosecution history to construe the meaning of the claim to be narrower than it would otherwise be unless a patentee limited or surrendered claim scope through a clear and unmistakable disavowal.").

Having determined that there was no disavowal of claim scope and because the plain meaning of "equivalent to or greater than 95% reflectance" is not ambiguous, the Court refuses to engage in the validity analysis the Defendants propose. As the Federal Circuit stated in *Phillips*,

> While we have acknowledged the maxim that claims should be construed to preserve their validity, we have not applied that principle broadly, and we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction. Instead, we have limited the maxim to cases in which the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous.

415 F.3d at 1327 (citations and quotation marks omitted). Here, as in *Phillips*, the requested validity analysis is inappropriate.

Effective / Sufficient Emissivity. For the reasons stated in the discussion on the "equivalent to or greater than 95% reflectance" term, the Court rejects Defendants' disavowal argument. The Court further rejects Defendants' proposed construction—"an emittance . . . less than 0.05"—as that construction would exclude an exemplary embodiment having a 0.06 emittance:

> Standard Surface Emittance (reflectivity) tests (ASTM C 1371-04a—"Standard Test Method for Determination of Emittance of Materials near Room Temperature Using Portable Emissometers") with the embodiments shown in FIG. **3** and FIG. **17** gave a measured emittance of 0.30 (65% reflectance) for the dull surface of the metallized coated PET material and a value of 0.06 (96% reflectance) for the shiny surface.

'410 Patent col.19 ll.1–10. And "[a] construction that excludes a preferred embodiment is rarely, if ever, correct." *C.R. Bard, Inc. v. United States Surgical Corp.*, 388 F.3d 858, 865 (Fed. Cir. 2004).

Plaintiff argues that an emissivity is "sufficient" or "effective" if it meets the industry standard. (Dkt. No. 99 at 23.) The Court agrees. For example, the '410 Patent describes:

> Thus, I also have found that a suitable and effective thickness of the lacquer polymeric coating can provide satisfactory anti-corrosion protection to the metal surface and still allow of **sufficient reflectance as to meet the emissivity standard as set by the industry**.

col.7 ll.26–32 (emphasis added). Plaintiff further argues that a "sufficient" or "effective emissivity" is different than an emissivity "equivalent to or greater than 95% reflectance" as expressly recited in separate claims. (Dkt. No. 99 at 23.) The Court agrees. *See SRI Int'l v. Matsushita Elec. Corp of Am.*, 775 F.2d 1107, 1122 (Fed. Cir. 1985) (en banc) ("It is settled law that when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement."). The question remains: what does it mean for the emissivity to meet the industry standard?

Plaintiff submits that the industry standard is an emissivity of 0.1 or less. (Dkt. No. 99 at 23.) The Court agrees. First, this was explained in the intrinsic record. The patentee submitted the following statement to the patent examiner in the course of prosecuting the '411 Patent:

> The term "reflective insulation" is a term of art. Reflective insulation has a high degree of reflectivity and, accordingly, a low degree of emissivity, the inverse of reflectivity. According to ASTM standard C 1224 the emissivity of reflective insulation must [be] 0.10 or less. This means that it must reflect at least 90% of the radiant energy to which it is exposed.

Dec. 31, 2009 Response to Office Action at 4, and attachment (Pl.'s Exh. 39 at 3, 17). The Court finds that the extrinsic evidence further supports the statement in the intrinsic record: Section 1.1 of ASTM C1224-03 states that "[r]eflective insulations derive their thermal performance from surfaces with an **emittance of 0.1 or less, facing enclosed air spaces**" (emphasis in original) (Pl.'s Exh. 24 at 2). And the Asserted Patents refer to emissivity as measured according to another ASTM standard, the ASTM C1371–04a standard. *See, e.g.*, '410 Patent col.19 ll.1–10

(Example 16); ’411 Patent col.22 ll.5–46 (Example 19). One of skill in the art would read the claims knowing that the industry standard is the ASTM standard, and that the standard calls for an emissivity of 0.1 or less. *See Phillips*, 415 F.3d at 1313 (one of ordinary skill in the art “is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field”) (quoting *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998)).

Accordingly, the Court construes the Surface Emissivity Terms as follows:

- “a surface thermal emissivity equivalent to or greater than 95% reflectance” means “a measure of the percentage of thermal radiation, including infrared radiation, reflecting from the surface near room temperature is equal to or greater than 95%”;
- “the surface thermal emissivity is equivalent to or greater than 95% reflectance” means “the measure of the percentage of thermal radiation, including infrared radiation, reflecting from the surface near room temperature is equal to or greater than 95%”;
- “wherein said metallized polymeric film with the lacquer coating thereon has a surface thermal emissivity equivalent to or greater than 95% reflectance” means “wherein said metallized polymeric film with the lacquer coating thereon has a measure of the percentage of thermal radiation, including infrared radiation, reflecting from the surface near room temperature that is equal to or greater than 95%”;
- “effective surface emissivity of said exposed surface” means “an emittance of the exposed surface less than or equal to 0.1”;

- "an effective surface emissivity of the exposed surface" means "an emittance of the exposed surface less than or equal to 0.1"; and
- "a surface thermal emissivity sufficient to meet required emissivity" means "an emittance of the surface less than or equal to 0.1."

E. "lacquer protective coating" / "lacquer coating"

Disputed Terms	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"lacquer protective coating" ('410 Patent, claims 1, 14)	No construction necessary Alternatively, Promethean proposes: "a coating that dissolves in a lacquer solvent"	A protective coating formed using a liquid-based material that may be applied by techniques, such as by brushing, spraying, and deposition.
"lacquer coating" ('411 Patent, claim 1; '871 Patent, claim 1; '601 Patent, claim 1; '614 Patent, claim 1)		

The lacquer terms are found in the Asserted Patents as follows: Claims 1 and 14 of the '410 Patent each recites "lacquer protective coating."[9] Claims 1 and 11 of the '411 Patent each recites "lacquer coating."[10] Claims 1 and 25 of the '871 Patent each recites "lacquer coating." Claims 1, 29, and 37 of the '601 Patent each recites "lacquer coating." And Claims 1 and 21 of the '614 Patent each recites "lacquer coating."

The Parties' Positions

Plaintiff submits that: (1) the terms "lacquer protective coating" and "lacquer coating" will be readily understood by the fact finder so no construction is necessary (Dkt. No. 99 at 26); and (2) the terms are used in the Asserted Patents without restriction on the method of applying the lacquer so no such restriction should be incorporated by construction (*id*. at 27).

[9] The Court notes that claim 13 of the '410 patent recites "said lacquer protective coating comprises an acrylic polymer or copolymer of 80,000-150,000 molecular weight."
[10] The Court notes that claims 3 and 11 of the '411 patent each recites "the lacquer protective coating comprises an acrylic polymer or copolymer of 80,000-150,000 molecular weight."

In addition to the claims themselves, Plaintiff cites the following **intrinsic evidence** to support its position: ’410 Patent col.7 ll.23–32, 43–47.

Defendants respond that: (1) the meaning of “lacquer” and “lacquer coating” is susceptible to conflicting interpretations so the terms must be construed to guide the jury (Dkt. No. 105 at 28); (2) the terms must be construed to give effect to “lacquer” such that not every coating is a “lacquer coating” (*see id*.); and (3) the description of the invention explains what a lacquer is by reference to its application process, it is something that can be applied “by brushing, spraying, deposition and the like” so construction of the term should incorporate the application process (*see id*. at 28–29); and (4) one of ordinary skill in the art would understand “lacquer” to be a liquid-based material both in the context of the Asserted Patents and generally in the art (*see id*. at 29–30).

In addition to the claims themselves, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: ’410 Patent col.7 ll.43–46; ’411 Patent col.8 ll.6–10. **Extrinsic evidence**: Richard J. Lewis, Sr., *Hawley’s Condensed Chemical Dictionary* (13th ed. 1997) (Defs.’ Exh. 21); Stephen L. Rosen, *Fundamental Principles of Polymeric Materials* (2d ed. 1993) (Defs. Exh. 22).

Plaintiff replies that: (1) the lacquer terms include words used in common parlance and are thus understandable without construction (Dkt. No. 109 at 11); (2) the claims recite a coating made of lacquer, not a method of applying a lacquer, so the claims should not be limited by the method of application (*id*. at 11–13); and (3) the Asserted Patents describe that a lacquer may applied by “deposition” thus a lacquer need not be applied in liquid form, it may be applied as a vapor, as was known in the art (*see id*. at 12–13). Plaintiff further replies that if the Court decides

to construe the terms, the terms should be construed as "a coating that dissolves in a lacquer solvent" as that "is consistent with the commonly understood definition of lacquer." (*Id*. at 13.)

Plaintiff cites further **extrinsic evidence** to support its position: Tokarski Depo. (Pl.'s Exh. 43); Ex. 12 to Tokarski Depo. (Pl.'s Exh. 48).

Analysis

The parties do not dispute the meaning of "coating" as each use that word in their proposed constructions. The dispute centers on the meaning of "lacquer." The dispute is three-fold: (1) whether the term should be construed at all; (2) whether exemplary application methods should be incorporated into the construction; and (3) whether the term should be construed as "liquid based." The Court holds that it must construe "lacquer" as there is a legitimate dispute over the meaning of the term that affects determination of infringement. *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement."); *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) ("When the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it.").

Plaintiff contends that "lacquer" has its common-place meaning and Defendants do not appear to contest this. The Asserted Patents suggest that the "lacquers" of the Asserted Patents, and their modes of application, are well known in the art:

> The clear lacquer coating may be applied to the highest reflectance surface, i.e. the bright side, of the metallic surface by techniques, such as by brushing, spraying, deposition and the like, **as is well-known in the art**. Preferred lacquers are clear, cross-linked polymers **well-known in the art**.

’410 Patent col.7 ll.43–47 (emphasis added). Defendants submit a technical dictionary definition in support of their construction that defines “lacquer” as a “protective or decorative coating that dries primarily by evaporation of solvent, rather than by oxidation or polymerization.” Richard J. Lewis, Sr., *Hawley’s Condensed Chemical Dictionary* 651 (13th ed. 1997) (Defs.’ Exh. 21 at 4). In its reply brief, Plaintiff proposes an alternative definition. It cites the *Hawley’s* definition in arguing that the alternative definition is “consistent with the commonly understood definition of lacquer.” (Dkt. 109 at 13.) Apparently, Plaintiff believes that the *Hawley’s* definition appropriately captures the common meaning of the term.

Defendants, while relying on the *Hawley’s* definition, propose a construction that includes an open ended list of exemplary application methods. (Dkt. No. 105 at 29.) The Court rejects Defendants proposed construction as it threatens to improperly import limitations from the description of the exemplary embodiments. *See Phillips*, 415 F.3d at 1320 (identifying “one of the cardinal sins of patent law—reading a limitation from the written description into the claims”). And it does not further the purpose of claim construction—to clarify and explain. *See U.S. Surgical*, 103 F.3d at 1568.

During the claim construction hearing, neither party objected to the Court’s construction of “lacquer coating” and “lacquer protective coating.”

Accordingly, the Court construes the terms as follows:

- “lacquer coating” means “a protective coating that dries primarily by evaporation of solvent, rather than by oxidation or polymerization”; and
- “lacquer protective coating” means “a protective coating that dries primarily by evaporation of solvent, rather than by oxidation or polymerization.”

F. "requires a Class A standard insulation" / "requiring . . . a Class A standard thermal insulation material" / "requiring Class A standard insulation" / "requiring a Class A standard thermal insulation"

Disputed Terms	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"an object that requires a Class A standard insulation material" ('410 Patent, claims 1, 14; '601 Patent, claims 1, 30)	No construction necessary apart from the Class A terms.	Indefinite.
"A thermally insulated object requiring and provided with a Class A standard thermal insulation material" ('411 Patent, claim 1)		
"requiring Class A standard insulation" ('601 Patent, claim 3)		
"An object requiring a Class A standard thermal insulation" ('614 Patent, claim 1; '871 Patent, claim 1)		

The Requiring Terms are found in the Asserted Patents as follows: Claims 1 and 14 of the '410 Patent each recites "an object that requires a Class A standard insulation material."[11] Claims 1 and 11 of the '411 Patent each recites "A thermally insulated object requiring and provided with a Class A standard thermal insulation material."[12] Claim 1 of the '871 Patent recites "An object requiring a Class A standard thermal insulation."[13] Claims 1 and 30 of the '601 Patent each recites "an object that requires a Class A standard insulation material" and claim 3 recites "requiring Class A standard insulation material." And claim 1 of the '614 Patent recites "An object requiring a Class A standard thermal insulation."

[11] The Court notes that claim 3 of the '410 patent recites "said object . . . requiring Class A standard insulation material."

[12] The Court notes that claim 3 of the '411 patent recites "said object . . . requiring Class A insulation."

[13] The Court notes that claim 2 of the '871 Patent recites "an object . . . requiring Class A insulation."

The Parties' Positions

Plaintiff submits that the Requiring Terms are not indefinite as one of ordinary skill in the art would understand whether or not an application requires a Class A rating. (*See* Dkt. No. 99 at 29–30.)

In addition to the claims themselves, Plaintiff cites the following intrinsic and extrinsic evidence to support its position. **Intrinsic evidence**: '410 Patent col.1 ll.5–13. **Extrinsic evidence**: July 31, 2007 email forwarding a June 4, 2007 RIMA update (Pl.'s Exh. 42).

Defendants respond that one of ordinary skill in the art would not understand what it means for an object to require a Class A rating because: (1) the requirement may be, for example, a function of law, industry standard, or contract; (2) it is unclear if the requirement attaches when the object moves from jurisdiction to jurisdiction; and (3) it is unclear whether the object requires a Class A rating when there are conflicting requirements or when only a portion of the object requires a Class A rating. (*See* Dkt. No. 105 at 4.) Defendants contend that the intrinsic record fails to clarify who or what requires a Class A rating (*id*. at 5–6) and that the extrinsic evidence cited by Plaintiff "has little bearing on what the patentee intended the [terms] to mean upon filing the patent application" at least in part because the evidence is a statement made "more than a year after the effective filing date" of the Asserted Patents (*id*. at 7).

In addition to the claims themselves, Defendants cite the following intrinsic and extrinsic evidence to support their position. **Intrinsic evidence**: '410 Patent col.1 ll.6–13. **Extrinsic evidence**: July 31, 2007 email forwarding a June 4, 2007 RIMA Update on Fire Code Issues (Defs.' Exh. 7).

Plaintiff replies that: (1) whether a Class A rating is required for an object is simply a function of whether an entity with the right and authority to ask for such a rating asks for or

demands such a rating (Dkt. No. 109 at 14); and (2) Defendants' industry experts and participants have testified that there is no ambiguity as to whether an object requires the Class A rating (*id*. at 14–15).

Plaintiff cites further **extrinsic evidence** to support its position: *Webster's Ninth New Collegiate Dictionary* (1987) (Pl.'s Exh. 49); Tokarski Depo. (Pl.'s Exh. 43); Oct. 7, 2014 Yarbrough IPR Decl. (Pl.'s Exh. 50).

Analysis

Defendants, in effect, claim that one of ordinary skill in the art would require an exhaustive list of how Class A insulation material might be required to understand the claims. The definiteness standard is not so exacting—such "absolute precision is unattainable." *See Nautilus Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). The fact that Class A insulation material may be required in various ways and by various bodies does not render the claim indefinite. The issue is whether one of ordinary skill in the art would understand what it means for such material to be "required," not whether one of ordinary skill in the art has analyzed and memorized every conceivable hypothetical fact pattern that might yield a requirement for Class A insulation materials.

The Asserted Patents list concrete examples of how Class A insulation materials may be required, or not. *See, e.g.*, '410 Patent col.1 ll.5–13 (by application), col.3 ll.26–34 (by application), col.3 ll.43–52 (by industry standard or code). These examples, as well as the plain meaning of "require," reasonably apprise one of ordinary skill in the art that Class A insulation material is required when the application calls for a certain fire safety standard, whether by standard, code, or design. Defendants' argument is essentially that every conceivable way in which a Class A rating may be required must be disclosed or the claims are indefinite. But the

patent laws are not so exacting. *See, e.g., Rexnard Corp. v. Laitram Corp.*, 274 F.3d 1336, 1344 (Fed. Cir. 2001) (a patent "applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention"); *SRI Int'l v. Matsushita Elec. Corp of Am.*, 775 F.2d 1107, 1122 (Fed. Cir. 1985) (en banc) ("The law does not require the impossible. Hence, it does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention.").

The extrinsic evidence further supports that one of ordinary skill in the art would understand what it means to "require" Class A insulation materials. The word "require" itself has a plain and readily accessible meaning. *See, e.g., Webster's Ninth New Collegiate Dictionary* 1002 (1987) (Pl.'s Exh. 49 at 3) (defining "require" as "to claim or ask for by right and authority" and "to call for as suitable or appropriate" and "to demand as necessary or essential"). And the Court finds that those of skill in the art used and understood "require" and its variants according to the plain and readily accessible meaning—in language substantially similar to the terms Defendants' now claim are indefinite. For example, the president of RIMA, a reflective insulation industry group, sent an email to RIMA's members explaining that changes to the ASTM E84 mounting methods will mean that "many current products will not meet [the Class A] requirement under the new mounting method." June 4, 2007 RIMA Update on Fire Code Issues (Pl.'s Exh. 42 at 3). [14] He stated "[m]any of [RIMA's] members' current products are sold

[14] Defendants' contend that the use of RIMA email in claim construction is improper for two reasons: (1) it postdates the effective filing date and has little bearing on Mr. Orologio's subjective intent in using the "requiring" language, and (2) RIMA's president's understanding fails to clarify the term to the public. (Dkt. No. 105 at 7.) The Court rejects Defendants' objection to this evidence. The email evinces that those in the industry understood the "requiring" language in June 2007. And Defendants' have not presented any evidence, let alone clear-and-convincing evidence, that those in the industry would not have understood the language in early 2006. And the claim-construction exercise is meant to determine the meaning of terms to one of ordinary skill in the art, not the subjective intent of the inventor. *Markman v.*

into applications where the product is exposed and therefore are required to meet a Class 1 Class A" standard and "[a]ny Manufacturer or Distributor selling products into an application which requires a Class 1 Class A product, and their product does not meet this requirement, could be exposed to extensive liability in the event of a fire or claim." *Id.* Similarly, in support of Defendant Reflectix's petitions for *inter partes* review of the Asserted Patents, Reflectix's expert explained the state of the art of reflective insulation materials as of the effective filing date using the "requiring" language; for example, he stated that "Class A insulative materials can be used in applications that require Class A in addition to applications that require Class B or Class C." Yarbrough IPR Decl. at 2–3, 7–8 (Pl.'s Exh. 50 at 2–3, 4–5). And Defendant Reflectix's president testified that he was not aware of anyone ever being confused as to "whether Class A materials were required or not" for an installation of reflective insulation. Tokarski Depo. 132:9–15 (Pl.'s Exh. 43 at 10). One of ordinary skill in the art understands with reasonable certainty whether Class A material is required in an application.

Further, and as an independent ground to refuse Defendants' motion to declare claims indefinite, the Court determines that the "requiring" language, in all its variants, is a non-limiting statement of intended use. *See Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1345 (Fed. Cir. 2003) ("An intended use or purpose usually will not limit the scope of the claim because such statements usually do no more than define a context in which the invention operates."); *In re Stencel*, 828 F.2d 751, 754 (Fed. Cir. 1987) (noting that a non-limiting statement of intended use may appear in the preamble or in the body of the claim). Here, the context in which the invention operates is an application "requiring" a Class A rating. In essence, the "requiring" claim language states the result of execution of the steps of the claimed

---

Westview Instruments, Inc., 52 F.3d 967, 985 (Fed. Cir. 1995) (en banc), *aff'd* 517 U.S. 370 (1996).

method or assembly of the components of the claimed object—the execution or assembly results in an insulated object suitable for Class A applications. But such claim language is not limiting. *See, e.g., Tex. Instruments Inc. v. U.S. Int'l Trade Comm'n*, 988 F.2d 1165, 1172 (Fed. Cir. 1993) (claim language held not limiting because it "merely describe[s] the result of arranging the components of the claims in the manner recited in the claims"); *Minton v. Nat'l Ass'n of Sec. Dealers, Inc.*, 336 F.3d 1373, 1381 (Fed. Cir. 2003) (claim language held not limiting because "it simply expresses the intended result of a process step positively recited"). The "requiring" language adds nothing to the substance of the claims and cannot be the grounds to render a claim indefinite.

Accordingly, the Court holds that the Requiring Terms are not indefinite, are readily accessible to the jury, and need not be construed.

G. "said object is selected from an article to be packaged, a vehicle and a residential, commercial, or industrial building or establishment"

Disputed Terms	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"said object is selected from an article to be packaged, a vehicle and a residential, commercial or industrial building or establishment" ('410 Patent, claim 2)	No construction necessary.	Indefinite.

The Parties' Positions

Plaintiff submits that this term is not indefinite because it further specifies the specific application (object) that requires the use of Class A insulation" as described in the Asserted Patents and as understood in the industry. (Dkt. No. 99 at 30.)

In addition to the claims themselves, Plaintiff cites the following intrinsic and extrinsic evidence to support its position: **Intrinsic evidence**: '410 Patent col.1 ll.5–13. **Extrinsic evidence**: July 31, 2007 email forwarding a June 4, 2007 RIMA update (Defs.' Exh. 7).

Defendants respond that: (1) the "object" of this term is the object that requires Class A insulation; (2) neither the claim nor the intrinsic record clarify who or what requires the Class A insulation for the object so the term is indefinite; and (3) Defendants are unaware of any relevant code that mandates Class A insulation for "an article to be packaged" or "a vehicle," so the claim allows than an object can require Class A insulation when such insulation is not required by code. (*See* Dkt. No. 105 at 8.)

Analysis

For the reasons stated above, the Court holds that the "requiring" language of this term does not render the term, or any claim, indefinite.

The Court also rejects Defendants' argument that the term is indefinite because "Defendants are unaware of any relevant code that mandates a vehicle of an article to be packaged to have Class A insulation material."[15] (Dkt. No. 105 at 8.) As explained above, a person of ordinary skill in the art need not know of every situation in which an object may require Class A insulation material to understand what it means to require Class A insulation material. And the patents need not list every such situation. *See, e.g.*, *Rexnard Corp.*, 274 F.3d at 1344 (stating a patent "applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention"); *SRI Int'l*, 775 F.2d at 1122 ("The law does not require the impossible. Hence, it does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention.").

[15] Defendants did not provide any evidence in support of this statement.

The Court holds that this term is not indefinite, is comprised of readily understood words, and does not need to be construed.

V. CONCLUSION

The Court adopts the above constructions set forth in this opinion for the disputed terms of the Asserted Patents. The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. It is further recommended that the Defendants' Motion for Partial Summary Judgment Based on Indefiniteness be **DENIED**. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 2nd day of April, 2015.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE