

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

CONTINUOUS COMPOSITES, INC. )  
 )  
 Plaintiff, )  
 )  
 v. ) C.A. No. 21-998 (MN)  
 )  
 MARKFORGED, INC., )  
 )  
 Defendant. )

**MEMORANDUM ORDER**

At Wilmington, this 17th day of March 2023:

IT IS HEREBY ORDERED that the claim terms of U.S. Patent No. 9,511,543 (“the ’543 patent”), 9,987,798 (“the ’798 patent”),<sup>1</sup> 10,744,708 (“the ’708 patent”), 10,759,109 (“the ’109 patent”), 11,173,660 (“the ’660 patent”) with agreed-upon constructions are construed as follows (*see* D.I. 119 at 1-2):

- 1. “at least one of moving the extruder and moving the anchor point” means “moving the extruder or the anchor point” (’543 patent, claim 17)
- 2. “curable” shall be given its plain and ordinary meaning, which is “capable of being cured” (’798 patent, claims 1, 13 & 14)
- 3. “a[n] [automated] method of [additively] manufacturing [of] a three-dimensional object” shall be given its plain and ordinary meaning, which is “a[n] [automated] method of [additively] manufacturing [of] a three-dimensional object” (’543 patent, claim 17; ’798 patent, claims 1, 13 & 14; ’708 patent, claims 1, 5, 9 & 21)
- 4. “an apparatus for additive[ly] manufacturing of a three dimensional object” shall be given its plain and ordinary meaning, which is “an apparatus for additive[ly] manufacturing of a three dimensional object” (’109 patent, claim 1; ’660 patent, claims 1, 2 & 4)

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<sup>1</sup> The parties have apparently reached an agreement to dismiss the ’798 patent from the case. (*See* D.I. 119 at 1 n.1). As of the time of this Order, no stipulation of dismissal has been filed and therefore references to the ’798 patent remain throughout.

5. “encase(d)” / “encases” shall be given their plain and ordinary meaning, which is “enclose or surround” (’543 patent, claim 17; ’708 patent, claims 1, 5, 9 & 21; ’109 patent, claim 1)
6. “coated” shall be given its plain and ordinary meaning, which is “covered” (’798 patent, claims 1, 13 & 14)
7. “curing” / “cure” shall be given their plain and ordinary meaning, which is “to change the physical properties of a material by chemical reaction” (’798 patent, claims 14)

Further, as announced at the hearing on March 8, 2023, IT IS HEREBY ORDERED that the disputed claim terms of the ’543, ’798, ’708, ’109 and ’660 patents are construed as follows:

1. “extruder” shall be given its plain and ordinary meaning, which is “a structure that discharges material” (’543 patent, claim 17; ’708 patent, claims 1, 5, 9 & 21; ’109 patent, claims 1 & 8; ’660 patent, claim 1)
2. “extruding” shall be given its plain and ordinary meaning, which is “discharging material through an opening” (’543 patent, claim 17)
3. “path” means “discharged material” (’543 patent, claims 17, 19, 20, 25 & 29; ’798 patent, claims 1, 13 & 14; ’708 patent, claims 1, 5, 9 & 21)
4. “primary material” means “a curable, liquid material” (’543 patent, claims 17 & 25; ’708 patent, claims 1, 5, 9 & 21; ’109 patent, claim 1)
5. “anchor point” / “anchor” means “a contact point to which the path is affixed and that serves as an origin point for the formation of the path” (’543 patent, claim 17; ’798 patent, claims 1, 2 & 13; ’708 patent, claim 5; ’660 patent, claim 4)
6. “the continuous strand being at least one of a wire [fiber] and a fiber [wire]” means “the continuous strand comprises a wire, a fiber, or both a wire and a fiber” (’708 patent, claims 1, 5, 9 & 21; ’109 patent, claim 1)
7. “hardened” / “harden” / “hardening” does not require further construction<sup>2</sup> (’543 patent, claim 25; ’798 patent, claim 13; ’708 patent, claims 5, 9 & 21; ’660 patent, claim 1)

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<sup>2</sup> Rejection of Defendant’s attempt to read in strengthening and curing requirements sufficiently resolves the parties’ dispute over claim scope for this term.

The parties briefed the issues (*see* D.I. 112) and submitted exhibits<sup>3</sup> containing intrinsic and extrinsic evidence, including expert declarations, and Defendant MarkForged provided a tutorial describing the relevant technology (D.I. 111).<sup>4</sup> The Court carefully reviewed all submissions in connection with the parties' contentions regarding the disputed claim terms, heard oral argument (D.I. 120) and applied the following legal standards in reaching its decision:

## **I. LEGAL STANDARDS**

“[T]he ultimate question of the proper construction of the patent [is] a question of law,” although subsidiary fact-finding is sometimes necessary. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 325-27 (2015). “[T]he words of a claim are generally given their ordinary and customary meaning [which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (cleaned up). Although “the claims themselves provide substantial guidance as to the meaning of particular claim terms,” the context of the surrounding words of the claim also must be considered. *Id.* at 1314. “[T]he ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent.” *Id.* at 1321 (internal quotation marks omitted).

The patent specification “is always highly relevant to the claim construction analysis . . . [as] it is the single best guide to the meaning of a disputed term.” *Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). It is also possible that “the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would

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<sup>3</sup> The parties attached the intrinsic and extrinsic evidence to the Joint Claim Construction Brief itself (*see* D.I. 112, Exs. 1-53), but the Court prefers this evidence to be submitted alongside the brief in the form of a joint appendix with its own table of contents.

<sup>4</sup> Plaintiff Continuous Composites did not submit a tutorial.

otherwise possess. In such cases, the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316. “Even when the specification describes only a single embodiment, [however,] the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (internal quotation marks omitted) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)).

In addition to the specification, a court “should also consider the patent’s prosecution history, if it is in evidence.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). The prosecution history, which is “intrinsic evidence, . . . consists of the complete record of the proceedings before the PTO [Patent and Trademark Office] and includes the prior art cited during the examination of the patent.” *Phillips*, 415 F.3d at 1317. “[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Id.*

In some cases, courts “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.” *Teva*, 574 U.S. at 331. Extrinsic evidence “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980. Expert testimony can be useful “to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.”

*Phillips*, 415 F.3d at 1318. Nonetheless, courts must not lose sight of the fact that “expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence.” *Id.* Overall, although extrinsic evidence “may be useful to the court,” it is “less reliable” than intrinsic evidence, and its consideration “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Id.* at 1318-19. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. See *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999) (citing *Vitronics*, 90 F.3d at 1583).

## **I. THE COURT’S RULING**

The Court’s ruling regarding the disputed claim terms of the ’543, ’798, ’708, ’109 and ’660 patents was announced from the bench at the conclusion of the hearing as follows:

At issue there are six<sup>5</sup> disputed claim terms in five patents. I note that the parties briefed ten terms but have since come to agreement on three of them. I am prepared to rule on each of the remaining disputes. I should say the parties have since come to agreement on three of them and one of them was withdrawn. I am prepared to rule on each of the remaining disputes. I will not be issuing a written opinion, but I will issue an order stating my rulings. I want to emphasize before I announce my decisions that although I am not issuing a written opinion, we have followed a full and thorough process before making the decisions I am about to state. I have reviewed the patents and all evidence submitted by the parties. There was full briefing on each of the disputed terms and we had argument today. All of that has been carefully considered.

As to my rulings, I am not going to read into the record my understanding of claim construction law. I have a legal standard section that I have included in earlier opinions, including somewhat recently in *Rex Computing, Inc. v. Cerebras Systems, Inc.*, C.A. No. 21-525 (MN). I incorporate that law and adopt it into my ruling today and will also set it out in the order that I issue.

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<sup>5</sup> “Extruder” and “extruding” were counted together as a single term but listed separately above (*supra* at 2) because the two terms are different parts of speech, thereby requiring different articulations.

Also, I will note that no party has suggested that any differences in the definition of a person of ordinary skill in the art make a difference here.

The first dispute is the meaning of “extruder” in claims in the ’543, ’708, ’109 and ’660 patents and “extruding” in claim 17 of the ’543 patent. Both sides argue that the plain and ordinary meaning should apply but dispute what that meaning is. Plaintiff asserts that the plain meaning of “extruder” is “something that extrudes” and that the plain meaning of “extruding” is “discharging material through an opening.” Defendant, on the other hand, argues that the plain meaning of “extruder” is “a machine that forces material through a die or opening of appropriate size and shape” and the plain meaning of “extruding” is “shaping or forming material by forcing it through a die or opening.” I largely agree with Plaintiff.

The specification does not support the plain meaning proposed by Defendant. There is nothing to suggest to a POSA that an “extruder” must be a “machine” or that it must be a machine that “forces material through” anything, much less a “die or opening of appropriate size and shape.” The same is true for the “shaping or forming” requirement that Defendant attempts to read into “extruding.” Indeed, Defendant first turns to extrinsic evidence in the form of dictionaries to justify its constructions,<sup>[6]</sup> followed by reliance on an expert declaration and a different unasserted patent owned by Plaintiff. Only after that does Defendant attempt to use the intrinsic evidence. But the parts of the specification relied upon by Defendant simply explain how primary material is held in the extruder and can then be extruded out a nozzle in any flowable shape and, further, that the nozzle can be of different shapes. None of that requires the extrusion process through the extruder to cause a particular shaping or forming process. Much less a requirement that some element of propulsive force is used to discharge the extruded material, which is also apparently required by Defendant’s construction. I just don’t think that a POSA would understand the plain meaning of “extruder” or “extruding” to be as articulated by Defendant. I think that Plaintiff’s proposal is much closer to the plain and ordinary meaning understood by a POSA in light of the intrinsic evidence, particularly the disclosure of both pushing and pulling being forces used to extrude material.<sup>[7]</sup> That being said, Plaintiff’s original proposal of “extruder” was not really a definition but more of a circular explanation.

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<sup>6</sup> (D.I. 112 at 16).

<sup>7</sup> (See, e.g., ’543 patent at 5:22-38 & 9:57-59).

I will construe the term “extruder” according to its plain meaning, which is “a structure that discharges material.” I think both parties agreed that “structure” is an appropriate word to use and I think it is better than Plaintiff’s proposed word “something.” I will construe “extruding” according to its plain meaning, which is “discharging material through an opening.”

The second term is “path,” which appears in claims 17, 19, 20, 25 and 29 of the ’543 patent, claims 1, 2, 6, 13 and 14 of the ’798 patent and claims 1, 5, 9 and 21 of the ’708 patent. Plaintiff proposes that the term be given its plain and ordinary meaning, which it contends is “material extruded through the extruder.” Defendant argues that it should be construed to mean “a coextrusion of two or more separate and distinct materials, not a pre-impregnated material, capable of extending into three dimensions.” Just yesterday, Defendant proposed an alternative construction “two or more separate materials extruded simultaneously to form a composite material allowing it to extend in three dimensions rather than only along horizontal planes” in order to remove the negative limitation.

Here again, I think Defendant is reading unsupported limitations into this term. I think the attempt to read in a negative limitation to exclude pre-impregnated material is particularly unsupported when the specification says that “[p]re-impregnating the secondary material is also envisioned.”<sup>[8]</sup> There is no basis in the specification to find that the patentee intended to exclude pre-impregnated materials from the scope of the claims. Nor do I find any disclaimer happened during prosecution of the ’543 patent. And as to the capability of extending in three-dimensions, I decline to read this into the construction of this term as well. I agree with Plaintiff that that capability is one of the multiple advantages of the inventions but that not all embodiments must have all of the advantages.<sup>[9]</sup>

All of that being said, I also think Plaintiff’s proposal is not quite right either, particularly because it is unhelpful and in some ways circular. Here, I think a POSA reading the intrinsic evidence would understand that the “path” as claimed is material discharged from the extruder. This is consistent with the use in the specification, where the extruder is described as discharging material in a path and that is often a composite material path (*i.e.*, primary and secondary materials). Indeed, the Summary of Invention explains that “[t]ogether, the primary material and the at

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<sup>8</sup> (*Id.* at 4:29-30).

<sup>9</sup> (*See, e.g., id.* at 2:49-61, 10:12-26 & 10:29-39).

least one secondary material are called the composite material. An extruder emits the composite material in a continuous path.”<sup>[10]</sup> The Summary of Invention also provides that “[t]he method allows for two or more materials [to be] simultaneously incorporated into the construction of a path. There is at least one primary material and at least one secondary material. . . . These two materials are extruded together . . . .”<sup>[11]</sup> These descriptions appear throughout the specification.<sup>[12]</sup> The specification does, however, contemplate paths made of only primary material in certain situations as well.<sup>[13]</sup> So I will construe “path” to mean “discharged material” and, to avoid any efforts to construe my construction, I will clarify that this can encompass multiple materials being discharged together. That being said, I recognize that this clarification may not be entirely necessary because all the claims at issue appear to have separate limitations requiring at least two materials.

The third term is “primary material,” which appears in claims 17 and 25 of the ’543 patent, claims 1, 5, 9 and 21 of the ’708 patent, and claim 1 of the ’109 patent. Plaintiff argues that the term should be given its plain meaning, which it says is “portion of the path.” Defendant argues that the term should be construed to mean “a curable, liquid material.” I think that the dispute here is really about whether the specification clearly defines “primary material” as “a curable liquid.” I find that it does.

Beginning with the Summary of Invention, the specification clearly states that “[t]he primary material is a curable liquid.”<sup>[14]</sup> Apart from the specification reciting something like “as used herein, ‘primary material’ means a curable liquid,” this is as close to a definition as I can image in these patents. Not only is there this definitional statement in the Summary of Invention, which Plaintiff has largely ignored, the rest of the specification consistently refers to the “primary material” as a curable liquid or mixture of curable liquids.<sup>[15]</sup> Other parts of the specification confirm that the “primary

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<sup>10</sup> (*Id.* at 2:15-17).

<sup>11</sup> (*Id.* at 2:6-13).

<sup>12</sup> (*Id.* at 3:33-36, 5:3-27 & 5:42).

<sup>13</sup> (*Id.* at 6:15-17 & 6:18-29).

<sup>14</sup> (*Id.* at 2:9).

<sup>15</sup> (*See, e.g., id.* at 2:42-43 (“The primary material can be any liquid material suitable for extruding and curing”); 3:28-32 (the “simplest embodiment” comprises use of two



material” must be a liquid. For example, the Summary of Invention notes that surface tension between primary and secondary material allows for more efficient use of the primary material – this would not make sense if it were not a liquid.<sup>[16]</sup> Similarly, the extruder is described as being shaped to facilitate the flow of primary material.<sup>[17]</sup> Again, this only makes sense to a POSA if the primary material is liquid because solid materials do not flow.

Plaintiff argues that the specification contains examples of primary materials that are not curable liquids. Specifically, it cites to column 3, lines 53 to 59 of the ’543 patent, which lists “[p]otential primary materials” and includes thermoplastics, metals and metal alloys. Plaintiff argues that thermoplastics, metals and metal alloys are not curable or liquid, but has not shown that is true for all such materials. And although Plaintiff cites to a statement from Defendant’s expert that thermoplastics are not curable, Plaintiff’s own expert opined only that some of the examples in the patent “might not be curable or liquid at room temperature”<sup>[18]</sup> and then referenced the Concise Encyclopedia of Plastics, which states that curing “refers to a chemical reaction (cross-linking) or change that occurs during its processing cycle. This reaction occurs with [thermoset] plastics or [thermoset] elastomers as well as cross-linked [thermoplastics] that become [thermosets].”<sup>[19]</sup>

Thus, I find nothing in the intrinsic evidence to support a broader construction – *i.e.*, one that simply requires the primary material be a portion of a path. Therefore, I will construe “primary material” to mean “a curable, liquid material” but note that this can include mixtures of different curable, liquid materials.

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materials – *i.e.*, liquid curable primary material and solid strand secondary material); 3:49-52 (“Since primary materials are curable, the reservoir and means for delivery should be kept cool and dark as required to prevent curing before extrusion.”); 5:45-46 (“There are many potential means of curing, which are determined by the liquid primary material.”); 5:55-61 (providing additional methods of curing, such as self-curing when two epoxies are used, other chemical curing, heat curing, etc.); *see also id.* at 3:64 (“[T]he primary material may be a combination of multiple materials.”)).

<sup>16</sup> (*Id.* at 2:34-36).

<sup>17</sup> (*Id.* at 5:7-8).

<sup>18</sup> (D.I. 112, Ex. 45 ¶ 78).

<sup>19</sup> (D.I. 112, Ex. 45 ¶ 90).

The fourth term is “anchor point” from claim 17 of the ’543 patent or “anchor” from claims 1, 2 and 13 of the ’798 patent, and claim 5 of the ’708 patent and claim 4 of the ’660 patent. Plaintiff proposes that the terms be construed separately and given their plain and ordinary meaning, which it contends is “contact point to which the at least one path is adhered to enable pulling of the at least one path” for “anchor point” and also “contact to which the path of composite material is adhered to enable pulling of the path” for “anchor.” Defendant proposes that the terms be construed together to mean “a contact point to which the path is affixed and that serves as an origin point for the formation of the path and provides support for the part during manufacturing.” Today during argument, Plaintiff agreed to the first part of Defendant’s construction, so the dispute is only over Defendant’s addition of the words “and provides support for the part during manufacturing.”

Defendant argues that “anchor” and “anchor point” are coined terms and, further, that it is just advocating for the “definition” that the PTAB adopted. The problem is that the PTAB did not construe any claim terms in any of the IPRs. The closest is that, during the ’543 patent institution denial, the PTAB offered a description of the “anchor point” as “contact point to which the origin of the at least one path is attached to enable pulling of the at least one path.”<sup>[20]</sup> But that is not a construction, particularly in light of the fact that the PTAB states earlier in the decision that it “determine[d] that no claim term requires express construction for purposes of this Decision.”<sup>[21]</sup>

As for providing support during manufacturing, I think that part of the PTAB’s discussion and Defendant’s construction really draws from the “best mode embodiment” disclosed in the specification. Beginning at column 6, line 43, the specification discusses “an automated mechanical apparatus” that “comprises a means of numerical control” and uses an independent computer to assist in the printing process. It is during this discussion that the patent mentions the manufacturer-designated origin and the ability of “multiple anchor points” to provide support during manufacturing.<sup>[22]</sup> Therefore, I think that this part of Defendant’s construction is really just drawing in a preferred embodiment.

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<sup>20</sup> (D.I. 112, Ex. 26 at 12 (PTAB denying institution of IPR for the ’543 patent)).

<sup>21</sup> (*Id.* at 7).

<sup>22</sup> (*See, e.g.*, ’543 patent at 8:19-24; *see also id.* at 6:43-46 (best mode embodiment comprises a means of numerical control for nozzle location) & 8:25 (discussing numerical control processing unit as positioning the nozzle at origin)).

So, I will construe this term to mean “a contact point to which the path is affixed and that serves as an origin point for the formation of the path.”

The fifth term is “the continuous strand being at least one of a wire [fiber] and a fiber [wire]” from claims 1, 5, 9 and 21 of the ’708 patent and claim 1 of the ’109 patent. Plaintiff proposes that the term be given its plain and ordinary meaning, which it contends is “the continuous strand comprises a wire, a fiber, or both a wire and a fiber.” Defendant proposes that the term be construed to mean “the continuous strand being wire and fiber.” The dispute here is whether the claimed “continuous strand” must be made of wire and fiber together, as Defendant contends, or whether the “continuous strand” can be made of wire alone, fiber alone or both wire and fiber together. This really comes down to the meaning of “at least one of” in the context of the claim term. Here, I agree with Plaintiff and find that it does not require the continuous fiber to be made of both wire and fiber.

Starting with the claim term itself, Defendant’s proposal renders meaningless the patentee’s choice to recite “at least one of” in the limitation. Stated differently, if Defendant’s construction is correct, then the term has the same meaning regardless of whether “at least one of” is in the claim or not. This suggests that Defendant’s is not the right construction. Additionally, the intrinsic evidence supports a construction where the continuous strand can be made of only wire, only fiber or a combination of both. As recited in the claims at issue, the “continuous strand” is material that is “encased in a primary material.” The Summary of Invention explains that secondary material “is a solid strand” that “may be any material” and encased within the primary material.<sup>[23]</sup> The secondary and primary material form a composite material that is extruded in a continuous path. The best mode for the secondary material solid strand is described as carbon fiber,<sup>[24]</sup> which suggests to a POSA that that continuous strand can be fiber alone. Later, the Summary of Invention also explains that “[t]he secondary material can be any material in the form of a strand. Examples of potential secondary materials include carbon fiber, fiber optics, metal wire, or a hollow rubber tube.”<sup>[25]</sup> This again suggests to a POSA that the strand of secondary material can be fiber alone but also can be wire alone. The Summary of Invention goes even further to explain that

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<sup>23</sup> (’708 patent at 2:26-30).

<sup>24</sup> (*Id.* at 2:27-28).

<sup>25</sup> (*Id.* at 2:59-62).

the secondary material may be a combination of materials – *i.e.*, including any combination that I just mentioned, including fiber and wire together.<sup>[26]</sup> Thus, a POSA reading this would understand that the claimed “continuous strand” is not limited to being made up of both fiber and wire, as Defendant contends. Other portions of the specification similarly support a construction that permits the “continuous stand” to be fiber, wire or both.<sup>[27]</sup> I am also not persuaded that anything that happened during prosecution amounts to a clear and unmistakable disclaimer of strands comprised of only wire or fiber alone. In light of this intrinsic evidence, a POSA would understand that the term “the continuous strand being at least one of a wire [fiber] and a fiber [wire]” means “the continuous strand comprises a wire, a fiber, or both a wire and a fiber.”

The sixth term is “harden” / “hardened” / “hardening” from claims 25 of the ’543 patent, claims 5, 9 and 21 of the ’708 patent, claim 13 of the ’798 patent and claim 1 of the ’660 patent. Once again, the parties are fighting about the plain meaning of the terms. Plaintiff argues that the plain meaning is simply “to make harder.” Defendant, on the other hand, separates the terms into two, arguing that the plain meaning of “hardened” is “made stronger as the result of curing” and that the plain meaning of “hardening” is “strengthening a material by curing.” The dispute here is twofold – first, whether the harden terms require a change in strength in the material and, second, whether that change in strength must come from curing.

At this point, I am not convinced this term requires construction beyond what I am about to say. Based on the intrinsic evidence, I do not think that there is support to read in the strength limitation offered by Defendant. It didn’t even really explain the reasoning behind that – whether intrinsic or extrinsic – in the briefing and offered little more today at argument. I am also not convinced that a POSA would understand “curing” to be a necessary part of the meaning of this term, particularly when some claims recite hardening as the result of curing (or cure energy)<sup>[28]</sup> and others

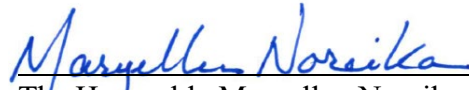
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<sup>26</sup> (*Id.* at 2:62-63).

<sup>27</sup> (*See, e.g., id.* at 4:29-31 (“FIG. 1 shows multiple examples of possible secondary materials. Included are carbon fiber, fiber optics, metal wire, and rubber.”); 4:59-61 (“The secondary material may be composed of multiple materials itself, as long as it maintains its strand form.”)).

<sup>28</sup> (*See, e.g., claim* 13 of the ’798 patent).

recite hardening without any mention of curing at all.<sup>[29]</sup> Therefore, I reject Defendant's proposed definition and do not think that further construction is necessary at this point. I think that resolves our disputes over the claim scope and a jury can understand the meaning of the "harden" terms without further definition.



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The Honorable Maryellen Noreika  
United States District Judge

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<sup>29</sup> (See, e.g., claim 25 of the '543 patent).