United States District Court,
E.D. Texas, Tyler Division.

REEDHYCALOG UK, LTD. and Grant Prideco, Inc,
Plaintiffs.
v.
BAKER HUGHES OILFIELD OPERATIONS INC., Halliburton Energy Services Inc., and U.S. Synthetic Corporation,
Defendants.

No. 6:06 CV 222

May 21, 2008.

Danny Lloyd Williams, Christopher Needham Cravey, J. Mike Amerson, James A. Jorgensen, Jeffrey Allen Pfeifer, Matthew Richard Rodgers, Stephen E. Edwards, Williams Morgan & Amerson PC, John C. Cain, Keith Alan Rutherford, Wong Cabello Lutsch, Rutherford & Brucculeri, Houston, TX, Andrew Wesley Spangler, Spangler Law PC, Elizabeth L. Derieux, Nancy Claire Abernathy, Sidney Calvin Capshaw, III, Capshaw Derieux, LLP, Thomas John Ward, Jr., Ward & Smith Law Firm, Longview, TX, for Plaintiffs.

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SUPPLEMENTAL MEMORANDUM OPINION

LEONARD DAVIS**, District Judge.**

This Memorandum Opinion construes an additional term the parties put in issue during the summary judgment briefing in this case.

BACKGROUND

On September 11, 2007, the Court construed the disputed terms in U.S. Patent No. 6,601,662 (the "'662 Patent" or the "Impact Strength Patent"). The Impact Strength Patent is directed at diamond cutting elements used in drill bits. Drill bit cutters are typically made of synthetic polycrystalline diamond ("PCD") material. Typical PCD cutters have problems because down-hole friction between the rock and the cutter causes extremely high temperatures. High temperatures, temperatures in excess of 750 degrees Celsius, cause the cutters to breakdown. A process called leaching, which was already known in the art, allowed the cutters to have increased thermal resistance by removing the catalyzing material from the cutter. However, this

process weakened the cutters' impact strength.

In general, the Impact Strength Patent involves removing of the catalyzing material from a thin portion of the cutter so that high thermal characteristics are achieved while still maintaining impact strength. The patent purports to teach a diamond cutting element with a thin outer layer of diamond that is leached to remove substantially all catalyzing material and the leached cutting element meets certain impact strength limitations.

Plaintiffs ReedHycalog UK, Ltd and Grant Prideco, Inc. (collectively "ReedHycalog") claim Halliburton Energy Services, Inc. and U.S. Synthetic Corporation (collectively "Defendants") infringe various claims of Impact Strength Patent.

APPLICABLE LAW

Duty of Court to Resolve Claim Scope Disputes

Courts construe asserted patent claims as a matter of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995) (en banc). The purpose of claim construction is to resolve disputed meanings and technical scope of claim limitations, clarifying and when necessary explaining claim scope, so the fact finder may determine infringement. O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1362 (Fed.Cir.2008) (quoting U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed.Cir.2002)). Courts, however, are not required to construe every limitation present in the asserted claims. *See* O2 Micro, 521 F.3d at 1362.

When the parties present a fundamental dispute as to the scope of the asserted claims, the Court, and not the jury, must resolve that dispute. Id. at 1360, 1362-63. Thus, a court may not decline to construe a claim term or rely on the term's ordinary meaning where such a construction does not resolve the parties' claim-scope dispute, allowing the parties to present claim scope arguments to the jury. Id. at 1361-62. However, a court may decline to construe a claim term or rely on that term's ordinary meaning if the court resolves the parties' claim-scope dispute and precludes the parties from presenting jury arguments inconsistent with the court's adjudication of claim scope. *See* id. at 1362 (holding district court erred when it allowed parties to submit arguments to the jury with regard to the meaning and legal significance of disputed claim limitation and stating "[w]hen the district court failed to adjudicate the parties' dispute regarding the proper scope of the [disputed claim limitation], the parties presented their [claim scope] arguments to the jury. By failing to construe this term, the district court left the jury free to consider these arguments.").

Claim Construction

"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)). In claim construction, courts examine the patent's intrinsic evidence to define the patented invention's scope. *See id.;* 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). This intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See* Phillips, 415 F.3d at 1314; C.R. Bard, Inc., 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; 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 also 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*. (quoting Markman, 52 F.3d at 979). "[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)); 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 the claim scope. Phillips, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id*. Also, the specification may resolve 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, Inc., 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)); *see also* 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.").

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 (quoting C.R. Bard, Inc., 388 F.3d at 862). 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 is 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*.

SUBSTANTIALLY THE SAME IMPACT STRENGTH

All asserted claims in the Impact Strength Patent require the leached and unleached portions of the PCD element to have "substantially the same impact strength." FN1 The parties first raised the issue in the briefs associated with Defendants' Motion for Partial Summary Judgment of Noninfringement with Respect to Cutters for Which Plaintiffs Have Failed to Produce Evidence of Infringement (Docket No. 324). In the summary judgment briefs, the parties disputed whether the term "substantially the same impact strength" covers partially leached drill bit cutters where the impact strength of the leached portion sufficiently exceeds the impact strength of the unleached portion.

FN1. In the context of the Impact Strength Patent, "impact strength" means "resistance to impact." ReedHycalog UK, Ltd. v. Baker Hughes Oilfield Operations Inc., No. 6:06 CV 222, 2007 WL 2688485, at (E.D.Tex. Sept.11, 2007) (Davis, J.).

ReedHycalog initially argued the term "substantially the same impact strength" did not place an upper limit on the impact strength of the leached portion of the PCD element. ReedHycalog's Opposition to Defendants Motion for Partial Summary Judgment of Non-Infringement (Docket No. 365), 12-13; ReedHycalog's Surreply in Opposition to Defendants' Motion for Partial Summary Judgment (Docket No. 394), 3-4. Defendants argued the term "substantially the same impact strength" is bounded and contended "substantially the same" means "equal to a great extent." Defendants' Reply in Support of the Motion for Partial Summary Judgment of Non-Infringement with Respect to Cutters for Which Plaintiffs Have Failed to Produce Evidence of Infringement (Docket No. 386), 3-5. The Court ordered the parties to submit supplemental briefs on the construction of "substantially the same impact strength." *ReedHycalog UK, Ltd. v. Baker Hughes Oilfield Operations, Inc.*, No. 6:06 CV 222, Order (Docket No. 425).

ReedHycalog now contends "substantially the same impact strength" means "within a 25% measure of resistance to impact, on average." FN2 ReedHycalog's Supplemental Claim Construction Brief (Docket No. 440), 2. Defendants contend "substantially the same" means "nearly or almost equal." Defendants' Claim Construction Memorandum on the Phrase "Substantially the Same Impact Strength" (Docket No. 442), 2. Defendants also argue that, to the extent the Court needs to quantify a range, the appropriate range is plus-or-minus 5%. *Id.* at 7. Thus, the parties now dispute the term "substantially." However, at the pretrial conference, the parties agreed the tolerance dispute relates more to ReedHycalog's infringement evidence than the scope of the "substantially the same impact strength" claim limitation.

FN2. ReedHycalog argued at the pretrial conference it has not "advocated a construction" of "substantially the same" that encompassed PCD elements where the impact strength of the leached portion exceeds the impact strength of the unleached portion beyond a tolerance such that the impact strengths of the two portions are not substantially equal. ReedHycalog, however, took the position in its briefs in opposition to Defendants Motion for Summary Judgment that "the same" meant "equal to or greater than." Thus, to the extent a dispute remains, the Court will resolve the dispute.

The ordinary meaning of "the same" is "equal in value" or "identical to." Nothing in the claims indicates the Impact Strength Patent alters the definition of "the same" to cover partially leached drill bit cutters where the impact strength of the leached portion exceeds the impact strength of the unleached portion beyond a tolerance such that the impact strengths of the two portions are not substantially equal.

The Impact Strength Patent's specification does not disclose a partially leached drill bit cutter where the impact strength of the leached portion exceeds the impact strength of the unleached portion. The specification explains prior art deficiencies inherent in thermally stable PCD elements and states the fabrication methods used to produce prior art thermally stable PCD elements caused the elements to exhibit lower impact strengths than non-thermally stable PCD elements. '662 Patent, col. 3:20-26, col. 3:52-62, col. 4:26-35, col. 4:47-col. 5:41. This weakened impact strength negatively affects PCD element performance in drilling applications. Id. at col. 1:64-67.

The specification subsequently describes the claimed invention and states "[t]he present invention provides a superhard polycrystalline diamond or diamond-like element with greatly improved wear resistance without loss of impact strength." Id. at col. 5:44-46; *see also* id. at col. 5:64-col. 6:4, col. 6:13-36, col. 6:56-col. 7:25. The specification discloses that as a result of the partial leaching process the partially leached cutter "has the enhanced thermal properties approximating that of the so called thermally stable PCD elements, while maintaining the toughness, convenience of manufacture, and bonding ability of the traditional [unleached polycrystalline diamond cutter] elements," and that the partially leached PCD gains these benefits without a loss of impact strength. Id. at col. 10:6-16; *see also* id. at col. 14:17-29. The specification also teaches that the properties of the cutting element in the claimed invention "represent[ ] to those skilled in the art a significant and substantial improvement in wear resistance of cutting elements while maintaining impact strength." Id. at col. 13:46-50.

In total, the Impact Strength Patent uses the term "the same" in accordance with its ordinary meaning.. The parties are precluded from arguing to the jury that the "substantially the same impact strength" claim limitation covers partially leached drill bit cutters where the impact strength of the leached portion exceeds the impact strength of the unleached portion beyond a tolerance such that the impact strengths of the two portions are not substantially the same.
The term "substantially" is ordinarily synonymous with the terms "nearly," "to a great extent," "considerably," or "almost." The intrinsic record does not disclose a tolerance range of impact strengths within which the leached and unleached portion of the PCD element would have substantially the same impact strength. The claims do not mention tolerance ranges. The specification also does not disclose a tolerance range where the leached and unleached portion of the PCD element would have substantially the same impact strength.

The specification is silent on impact strength tolerances, but the specification indicates the upper and lower bounds of the "substantially the same impact strength" limitation are fairly narrow. The specification states "[t]he present invention provides a superhard polycrystalline diamond or diamond-like element with greatly improved wear resistance without loss of impact strength." '6632 Patent, col. 5:44-46; *see also* id. at col. 5:64-col. 6:4, col. 14:17-29; id. at col. 10:6-16 (noting the partially leached cutter "has the enhanced thermal properties approximating that of the so called thermally stable PCD elements, while maintaining the toughness, convenience of manufacture, and bonding ability of the traditional [unleached polycrystalline diamond cutter] elements," and that the partially leached PCD element gains these benefits without a loss of impact strength). Similarly, the specification, when it compares the invention to the prior art, states the claimed invention "represents to those skilled in the art a significant and substantial improvement in wear resistance of cutting elements while maintaining impact strength." Id. at col. 13:46-50; id. at Fig. 12 (depicting impact strength and abrasive wear resistance of present invention versus the prior art). The specification also does not disclose a PCD element where the impact strength of the leached portion is greater than the impact strength of the unleached portion. Rather, the specification indicates the impact strength of the leached and unleached portions are nearly identical.

In support of their tolerance ranges, the parties cite testimony from technical experts. The testimony is directed to the deviation between the average total impact strengths of a series of unleached and partially leached PCD elements. From these average total impact strengths, the experts opine whether the impact strengths of the leached and unleached portions of a single partially leached PCD element are substantially the same. Whether the deviation between these average total impact strengths sufficiently show the impact strengths of the leached and unleached portions of an accused partially leached PDC element are

substantially the same is a question of fact for the jury and not a question of law for the Court. As there is no fundamental claim-scope dispute, the term "substantially the same impact strength" does not require construction. *See* O2 Micro, 521 F.3d at 1360, 1362-63.

CONCLUSION

For the foregoing reasons, the Court interprets the claim language in this case in the manner set forth above. For ease of reference, the Court's claim interpretations are set forth in a table as Appendix B.. The claims with the disputed terms in bold are set forth in Appendix A.

So ORDERED.

APPENDIX A

U.S. Pat. No. 6,601,662

1. A PCD element comprising a body of bonded diamonds integrally formed with a metallic substrate, the body having a working surface and at least an 85% by volume diamond density, wherein a first volume of the body adjacent to the working surface contains a catalyzing material, a second volume of the body adjacent to the working surface is substantially free of the catalyzing material, and wherein the first volume and the second volume have **substantially the same impact strength.**

26. A preform cutting element comprising a body of a superhard polycrystalline material comprising a plurality of partially bonded superhard crystals integrally formed with a metallic substrate, a plurality of interstitial regions among the superhard crystals and a catalyzing material, the body having at least an 85% by volume diamond density and a cutting surface, wherein the interstitial regions adjacent to at least a first portion of the cutting surface are substantially free of the catalyzing material, the interstitial regions adjacent to a second portion of the cutting surface contain the catalyzing material, and the interstitial regions where the body contacts the substrate contain the catalyzing material and have an average thickness greater than 0.15 mm, and wherein the first portion of the cutting surface and the second portion have **substantially the same impact strength.**

31. A PCD element comprising a diamond containing body integrally formed with a metallic substrate, the body having at least an 85% by volume diamond density and an interstitial matrix, a first portion of the interstitial matrix in the body adjacent to a working surface is substantially free of the catalyzing material, a second portion of the interstitial matrix in the body adjacent to a working surface contains the catalyzing material, and the interstitial matrix where the body contacts the substrate contains the catalyzing material and has an average thickness greater than 0.15 mm, and wherein the first portion of the interstitial matrix and the second portion of the interstitial matrix have **substantially the same impact strength.**

APPENDIX B

Ref. Nos.	**Term or Phrase to be Construed (Claims)**	**Court's Constructions**
1	substantially the same impact strength (claims 1, 26, 31)	*No construction required* .

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