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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

**CIVIL MINUTES - GENERAL**

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| Case No. | CV 08-1407 ODW (RZx) | Date | October 14, 2009 |
| Title | *Nobel Biocare USA, LLC, et al. v. Blue Sky Bio, LLC, et al.* | | |

| | |
|---|---|
| Present: | The Honorable Otis D. Wright II, United States District Judge |

| Raymond Neal | Not Present | n/a |
|---|---|---|
| Deputy Clerk | Court Reporter | Tape No. |

| Attorneys Present for Plaintiff(s): | Attorneys Present for Defendant(s): |
|---|---|
| Not Present | Not Present |

**Proceedings (In Chambers): Claim Construction Order [97]**

## I. INTRODUCTION

The parties sell dental implants and associated tools and accessories. Nobel Biocare USA, LLC, Nobel Biocare Services AG, and Nobel Biocare AB (collectively, "Plaintiffs") have obtained patents for some of the dental implants and accessories they sell. Plaintiffs contend that Blue Sky Bio, LLC ("Defendant") makes and sells dental implants and accessories that infringe Plaintiffs' U.S. Patent No. 5,795,160 ("the '160 patent") and U.S. Patent No. 6,733,291 ("the '291 patent").

On April 20, 2009, Defendant filed an Ex Parte Application for a *Markman* Hearing, wherein it argued that the success or failure of Plaintiffs' claims for infringement of the '160 and '291 patents hinged, in large part, on the meanings of certain disputed terms in the patents' claims. The Court granted Defendant's Ex Parte Application, setting the *Markman* hearing for June 18, 2009. The Court later continued the hearing to July 24, 2009. After considering the parties' briefs and all other relevant documents, along with the parties' arguments at the *Markman* hearing, the Court construes the disputed claims as set forth below.

## II. FACTUAL BACKGROUND

Plaintiffs allege the following facts:[1]

Dentists use dental implants to replace missing teeth.[2] Dentists may perform dental implant surgery in several different ways. Most dental implant surgeries, however, usually occur in stages and involve several procedures.

Dental implant surgery often begins with an incision in the patient's gums, followed by the use of a drill or series of drills to form a hole in the patient's jawbone. Said hole is widest at the top, where the tooth emerges, and narrows toward the bottom. The hole is drilled through the compact layer of bone into the cancellous layer of porous and spongy bone. The dentist then inserts a metal implant in the hole, which acts as the root of the missing tooth. Over the next four to ten months, a process called osseointegration occurs, during which the bone integrates with the implant to form an artificial tooth root. Once osseointegration is complete, the dentist attaches an abutment to the implant. After the patient's gums heal, which usually occurs within a week or two, the dentist attaches an artificial or prosthetic tooth to the abutment.

The inventors of the '160 patent and the '291 patent believed they could improve the method for installing dental implants and related accessories. Specifically, the inventors of the '160 patent, entitled "Tapered Dental Implant in a Stepped Orifice," attempted to address the problem of an initially weak securement between the implant and bone by inventing a method of creating a stepped orifice into which the dentist inserts a tapered implant. The inventors believed that by creating a stepped orifice that compresses the cancellous bone tissue and using a tapered implant that mirrored the tapered shape of the jawbone, the implant would perform better. As to the '291 patent, entitled "Implant With Internal Multi-Lobed Interlock," the inventor attempted to address the problem of traditional hexagonal-shaped anti-rotational means that have sharp corners that chip or wear away and become less effective. The inventor believed that by creating an internal interlocking chamber within the implant he could reduce the problems associated with traditional anti-rotational means.

Plaintiffs allege that Defendant has infringed the '160 and '291 patents. Specifically, Plaintiffs allege, among other things, that Defendant made, used, and sold dental implant products that are installed according to the inventions claimed in the '160 and '291 patents. (SAC ¶¶ 26, 68.) As a result, Plaintiffs sued Defendant on February 28, 2008. Plaintiffs' operative complaint asserts claims for (1) patent infringement of the '160 patent, (2) patent infringement of U.S. Patent No. D443,361 ("the '361 patent"),[3] (3) trademark infringement of

[1] The Court has included only those facts that are relevant to construction of the claims in the '160 and '291 patents. The description of dental implants, dental implant surgery, and the purpose of the patents at issue is taken from the parties' briefs, relevant portions of the patents, and other documents on file with the Court.

[2] The Court is using the term "dentist" to refer to the clinician that performs the dental implant surgery. The Court, however, recognizes that several types of clinicians, including oral surgeons, may perform dental implant surgery.

[3] Defendant has not sought construction of the claims in the '361 patent. (Ex. Parte. App. 2.)

U.S. Trademark Reg. Nos. 2,515,631; 2,129,471; 3,211,602; and 3,366,041, (4) false designation of origin, (5) common law and statutory unfair competition, (6) common law trademark infringement, (7) federal trademark dilution, (8) patent infringement of the '291 patent, (9) Lanham Act False Advertising, and (10) California Statutory False Advertising. On May 13, 2008, Defendant filed Counterclaims for a declaratory judgment of non-infringement, invalidity, and unenforceability of Plaintiffs' patents.[4]

## III. LEGAL STANDARD

The court, not the jury, must determine the meaning and scope of patent terms. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd., 517 U.S. 370, 372 (1996). When construing disputed claim terms, the court often looks to both intrinsic and extrinsic evidence. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

Intrinsic evidence includes the language of the claims, specification, and prosecution history. *Vitronics*, 90 F.3d at 1582. The language of a patent's claims 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 . . . as of the [patent's] effective filing date." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). "Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.*

The specification "is the single best guide to the meaning of a disputed term." *Vitronics*, 90 F.3d at 1582. The specification can provide further guidance on the meaning of terms in the claims by, for example, (1) revealing a "special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess" *Phillips*, 415 F.3d at 1316, (2) revealing an "intentional disclaimer, or disavowal, of claim scope by the inventor" *Id.*, or (3) defining a term by implication, "such that the meaning may be found in or ascertained by a reading of the patent documents" *Novartis Pharms. Corp. v. Abbott Labs.*, 375 F.3d 1328, 1334-35 (Fed. Cir. 2004).

The patent's 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." *Phillips*, 415 F.3d at 1317.

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. When used, extrinsic evidence cannot "vary or contradict" claim language, *Vitronics*, 90 F.3d at 1584, but it can be useful "for a variety of purposes, such as to provide background . . . [and] 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.

[4] On July 8, 2009, the Court granted the parties' Joint Stipulation to (1) dismiss Plaintiffs' seventh claim for Federal Trademark Dilution, (2) dismiss Defendant's second, third, sixth, eighth, ninth, and twelfth affirmative defenses, and (3) limit the scope of Defendant's Counterclaims.

## IV. DISCUSSION

Viewing the disputed terms from the perspective of a person of ordinary skill in the art at the time of the inventions, the Court adopts the constructions set forth below.[5]

### A. The '160 Tapered Implant Patent

The disputed terms appear in boldface below.

> Claim 1: A method of installing a dental implant comprising the steps of:
>
> > **drilling a stepped endosseous orifice** in the maxilla or mandible of the patient in which the implant is to be installed; and
> >
> > inserting into said orifice a **tapered implant**, the tapered implant being so constructed and configured as to define a proximal end, a **cylindrical** portion adjacent to the proximal end, a **frustoconically tapered portion** tapering from the **major diameter D** at the proximal end of the implant to a minor diameter d proximate the distal end of the implant; said orifice being **step drilled** such that the orifice less than or equal to respective portions of the implant to be installed adjacent such steps for laterally compressing the cancellous tissue to form a tight fitting sleeve of bone around the implant without exerting undue lateral force bone into which implant is installed.

(Swaroop Decl. Ex. 1, col. 6, ll. 27-44.)

#### *1. Drilling a Stepped Endosseous Orifice*

The parties' proposed constructions are as follows:

| **Plaintiffs** | **Defendant** |
|---|---|
| Creating a hole with at least one sudden, marked change in the slope of the wall along its length, thus forming a step. | Drilling a hole in a patient's bone which has the appearance of stair-steps when viewed in cross-section. |

The parties' dispute over this term revolves around the meaning of "stepped."[6] (Plf's Opening Brief 6; Plf's Reply Brief 1; Def's Opening Brief 18.) The standard dictionary

[5] In light of the nature and complexity of the patents, the Court finds Plaintiffs' description of a person of ordinary skill in the art at the time of the invention helpful. Plaintiffs have described such a person as a dentist or engineer with five years or more experience at the time of the invention. (Plf's Dem. Ex. 8; Brunski Decl. ¶ 11.)

[6] The parties agree on the meaning of the terms "drilling," "endosseous," and "orifice." (Plf's Opening Brief 6; Def.'s Opening Brief 18.)

definition[7] of "stepped" is "having a step or series of steps: arranged or constructed in steps . . ." (7/24/09 Transcript 16; Plf's Ex. 12 (Webster's) at 2237.) The dictionary definition of "step" includes "something to put the foot on in ascending or descending" and "a steplike shoulder or bench on an otherwise smoothly rising hillside or slope: one of a series of terraces rising vertically from a valley floor." (Plfs' Ex. 12 (Webster's) at 2236.)

The language of the claim does not define "stepped" nor does it specifically describe the shape of the steps created in the orifice. (Swaroop Decl. Ex. 1, col. 6, ll. 25-50.) It merely refers to "drilling a stepped endosseous orifice" in a patient's jawbone into which a dentist inserts a tapered implant. (Id.) The claim also explains that the orifice is "step drilled" so that the steps line up with the shape of the implant so as to laterally compress the cancellous tissue. (Id.) The portion of the claim that describes the tapered implant likewise fails to precisely define the contours of the implant in a way that would necessarily shed light on the shape of the steps that are drilled in the orifice. (Id.)

According to the specification, the purpose of drilling a stepped orifice in which the dentist inserts the implant is to create a greater initial strength between the implant and the porous, spongy cancellous bone tissue. (Swaroop Decl. Ex. 1, col. 1-4.) To that end, the '160 patent seeks to achieve this purpose by step-drilling the orifice and laterally compressing the cancellous bone tissue to create an orifice that is the size or slightly smaller than the implant, so that when the dentist installs the implant, the cancellous tissue is compressed laterally and puts less pressure on the bottom of the implant. (Swaroop Decl. Ex. 1, col. 2, ll. 49-56, col. 4, ll. 56-61.)

The specification describes the method for drilling the stepped orifice as follows:

> [A] stepped orifice is formed in the maxilla or mandible. From the top of the compact layer of the bone, a stepped endosseous orifice **30** is formed, which, preferably is formed to define a tapered portion part way through the compact layer as indicated by line **32**. The orifice is so formed as to define a plurality of steps, one of which is indicated at **34** in FIG. **4**. The number of steps, two or more, is not critical. Four or five steps have been found generally to be optimal . . . The stepped orifice may be formed in the using a plurality of increasing diameter drills or a stepped drill, or a plurality of increasing diameter osteotomes or a stepped osteotome. FIG. **8** depicts the outer diametrical outline of a drill or an osteotome **100** showing the stepped relationship, details of cutting edges, etc., being omitted for clarity of illustration, which is suitable for use in forming a stepped orifice as described. The osteotome **100** defines a plurality of steps, one of which is indicated at **102** that correspond to the desired number, diameter and depth of the steps to be formed in the bone.

(Swaroop Decl. Ex. 1, col. 4, ll. 14-37.)

Like the claim language, the specification does not describe the precise contours of the steps that are drilled in the orifice.

[7] The parties have not presented evidence of the definition of "stepped" in a dental dictionary.

Defendant, however, contends that the patent drawings support its proposed construction that the steps in the endosseous orifice must resemble stair-steps. Generally, drawings are *examples* and are not usually construed to limit the scope of a patent to the embodiment depicted in the drawing. *See Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1306-7 (Fed. Cir. 2003) (explaining that "the mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration").

Nonetheless, Defendant contends that Figure 8 shows that the drill used to create the stepped orifice has horizontal ledges, which would create steps that resemble stair-steps. The Court, however, declines to use this drawing to limit the scope of the patent to a stepped orifice created using the stepped osteotome depicted in Figure 8. First, courts generally do not rely on schematic drawings to limit the scope of a patent to the embodiment depicted in such drawings. *See Anchor Wall*, 340 F.3d at 1306-7. Second, the specification explains that Figure 8 is an example of a stepped osteotome that "*can* be used to form a stepped orifice." (Swaroop Decl. Ex. 1, col. 3, ll. 26-28.) (emphasis added). According to the specification, a dentist may use a stepped drill or osteotome *or* a plurality of drills or osteotomes. (Swaroop Decl. Ex. 1, col. 4, ll. 27-30.) The specification does not *require* a dentist to use the type of osteotome depicted in Figure 8.[8] Third, the specification states the cutting edges of the osteotome are not depicted in Figure 8. Fourth, even if the Court limited this term to steps created by the type of osteotome depicted in Figure 8, the Court still would not adopt Defendant's proposed construction because the osteotome in Figure 8 contains some "steps" that lack horizontal ledges and do not resemble stair-steps. Thus, by adopting Defendant's proposed construction, the Court would be improperly excluding the preferred embodiment. *See Vitronics*, 90 F.3d at 1583. Finally, the specification specifically states that "[v]ariations in both the implant and the method are within the scope of the invention." (Swaroop Decl. Ex.1., col. 3, ll. 34-36.)

Defendant also relies on the prosecution history to support its proposed construction. Specifically, Defendant relies on the drawing that was initially labeled as Figure 4 in Plaintiffs' patent application, which was slightly different from the final version. The initial version showed the outline of the stepped orifice, which contained horizontal ledges. (Def.'s Ex. 2.) The Court, however, declines to construe the initial drawing as limiting the scope of the patent because, as described above, courts generally do not rely on schematic drawings to limit the scope of a patent to the embodiment depicted in such drawings. Moreover, to the extent that Plaintiffs altered the drawing in Figure 4 to remove the horizontal ledges, Defendant has not explained why *removing* from the final patent the portion of the drawing depicting the horizontal ledges would nonetheless mean that the orifice must contain such ledges.

Defendant also relies on prior art, the Schulte patent, to support its contention that the steps must resemble stair-steps. Defendant, however, has not explained *why* this prior art necessarily means that the stepped orifice or step drill described in the '160 patent must

[8] Presumably, if the inventors believed that the method for drilling the stepped orifice required the dentist use the type of osteotome depicted in Figure 8, they could have simply said so. They did not. Likewise, if the inventors believed that the steps must resemble stair-steps in order to properly compress the cancellous tissue, they could have simply said so. They did not.

necessarily contain horizontal ledges and resemble stair-steps. While it is true that the Schulte patent appears to use the term "stepped" to refer to steps that resemble stair-steps and that the '160 patent refers to that patent as illustrating an implant in a stepped orifice, nothing in the '160 patent suggests that the inventors limited the term "stepped" to include only steps that resemble stair-steps, like the Schulte patent. (Def.'s Exs. 1, 10.)

Moreover, at the hearing, counsel for Defendant conceded that steps need not contain precisely horizontal ledges. (7/24/09 Transcript 70.) Specifically, Mr. Hurey stated "[w]e are not saying the steps have to be precisely 90 degrees, precisely vertical, precisely horizontal." (Id.) Defendant's expert also conceded this point. (Plf's Ex. 43 at 112.)

As to extrinsic evidence, Plaintiffs have presented evidence supporting their contention that the steps need not contain horizontal ledges. Specifically, in addition to the dictionary definitions described above, Plaintiffs rely on an article in the International Journal of Oral and Maxillofacial Implants that depicts a "stepped" drill that creates a "stepped" orifice that has sloped, not horizontal, steps. (Plfs' Dem. Ex. Bahat Article.)

The Court, however, declines to adopt Plaintiffs' proposed construction as currently drafted because it is slightly inaccurate. Specifically, Plaintiffs' proposed construction refers to creating a hole with at least one marked change in slope, but Plaintiffs' expert conceded that in order to create one step, there needs to be two, not one, marked changed in slope. (Brunski Depo. 65-66.) As a result, adopting Plaintiffs' proposed construction would not be consistent with creating a "stepped" orifice because it could include an orifice that has only one marked change in slope and thus does not contain even one step.

In light of the foregoing, the Court adopts the following construction: **Creating a hole in the bone with at least two sudden, marked changes in the slope of the wall along its length, thus forming at least one step.**

*2.* *Step Drilled*

The parties' proposed constructions are as follows:

| **Plaintiffs** | **Defendant** |
|---|---|
| Forming a stepped endosseous orifice with a drill. | A hole in a patient's bone which has the appearance of stair-steps when viewed in cross-section. |

Both parties agree that the Court should construe this term consistent with the construction of "drilling a stepped endosseous orifice." (Def.'s Opening Brief 22; Plf's Opening Brief 9.) The Court agrees. Thus, this term should be construed consistent with the construction of the term "stepped endosseous orifice" described above.

*3.* *Tapered Implant*

The parties' proposed constructions are as follows:

| Plaintiffs | Defendant |
|---|---|
| An implant that gradually diminishes in diameter towards one end. | An implant including a frustoconically tapered portion. |

The Court finds that Plaintiffs' proposed construction is appropriate because (1) the claim language describes a method for installing a tapered implant, which tapers from the proximal end to the distal end (Swaroop Decl. Ex. 1, col. 6, ll. 32-44), (2) the specification describes the implant as diminishing in diameter (Swaroop Decl. Ex. 1, col. 3-4), and (3) extrinsic evidence, such as dental dictionaries and general dictionaries, also support construing a "tapered implant" as an implant diminishing in diameter towards one end (Pl's Ex. 3 (Glossary) at 159; Ex. 12 (Webster's) at 2339).

The Court declines to adopt Defendant's proposed construction because it does not give effect to all terms in the claim and is incomplete. First, courts generally construe claim terms so as to give effect to all terms in a claim. *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006). Here, the claim explains that the tapered implant has a "cylindrical portion" and a "frustoconically tapered portion." (Swaroop Decl. Ex. 1, col. 6, ll. 32-44.) By defining "tapered implant" as including a "frustoconically tapered portion," Defendant's proposed construction does not give effect to the term "frustoconically tapered portion" in the claim. If the Court adopted Defendant's proposed construction, there would be no need for the claim to state that the tapered implant includes a "frustoconically tapered portion." Second, Defendant's proposed construction is incomplete because it does not describe the implant as diminishing in diameter, which is clearly described in the language of the claim. (Swaroop Decl. Ex. 1, col. 6, ll. 32-44.)

In light of the foregoing, the Court adopts the following construction: **An implant that gradually diminishes in diameter towards one end.**

*4.* *Frustoconically Tapered Portion*

The parties' proposed constructions are as follows:

| Plaintiffs | Defendant |
|---|---|
| A portion of an implant whose exterior is conically shaped over a region, but does not come all the way to a point in that region. | A portion of the implant body with smoothly tapered sides. |

The parties agree that frustoconical means "a truncated cone with its pointed end removed." (Plf's Opening Brief 12 n.3; Def.'s Opening Brief 4.) The parties, however, disagree as to the portion of the implant to which this term refers. Plaintiffs contend it applies to the entire implant, including the threads. Defendant, however, contends that it applies only to the internal body of the implant, not the threads.

The language of the claim describes "a frustoconically tapered portion tapering from the major diameter D at the proximal end of the implant to a minor diameter d proximate [to] the

distal end of the implant." (Swaroop Decl. Ex. 1, col. 6, ll. 35-38.) Nothing in the language of the claim describes this portion of the implant as having smooth sides. Nor does the claim language specify that this portion refers only to the internal shape of the implant body, excluding the threads.

The specification likewise describes the general shape of the implant, but lacks any reference to the frustoconically tapered portion of the implant as having smooth sides. (Swaroop Decl. Ex. 1, col. 3-4.) Defendant nonetheless relies on Figure 1 to support its contention that the "frustoconically tapered portion" has smooth sides. Specifically, Defendant contends that Figure 1 refers to the "frustoconically tapered portion" as the smooth sides between the threads of the implant. The Court, however, declines to construe this term so narrowly based on the imprecise drawing in Figure 1. As explained above, courts generally do not rely on schematic drawings to limit the scope of a patent to the embodiment depicted in a drawing. *See Anchor Wall*, 340 F.3d at 1306-7. In addition, Defendant has not given a reasonable explanation for its insistence that a frustocone has "smooth" sides (7/24/09 Transcript 91) nor has Defendant presented *compelling* expert testimony construing this term in the relevant field as requiring smooth sides.

Moreover, it does not appear that adopting Defendant's proposed construction is consistent with the nature and purpose of the '160 patent. Rather, Defendant's proposed construction seems to be a haphazard attempt to narrow the patent's scope. The '160 patent requires that the implant inserted into the stepped endosseous orifice contain a frustoconically tapered portion, but does not explicitly state nor imply that the precise shape of the internal body of the implant is important, as long as the overall implant contains a frustoconically tapered portion. Indeed, whether the implant is tapered due to its tapered body or its tapered threads the result is the same, the taper fits the proportions of the orifice to accomplish the goal of creating a snug fit with the bone.

Defendant's proposed construction is also inaccurate because it fails to describe the truncated cone that is characteristic of a frustum and thus is overly broad in that it could include a tapered implant that comes to a complete point.

Plaintiffs, on the other hand, have proposed a logical construction for this term that refers to the overall shape of the implant. As described above, the claim language and specification do not contain any language that would limit the term "frustoconically tapered portion" to refer to only the internal body of the implant.

In light of the foregoing, the Court adopts the following construction: **A portion of an implant whose exterior is conically shaped over a region, but does not come all the way to a point in that region.**

*5.* *Major Diameter D*

The parties' proposed constructions are as follows:

| **Plaintiffs** | **Defendant** |
|---|---|

| | |
|---|---|
| Widest part of the top end of the implant, namely the top thread of the implant. | The maximum diameter of the implant, including the topmost portion of the implant and the threads. |

The parties' proposed constructions are nearly identical: both refer to the widest portion of the implant, including the top end of the implant and threads. Thus, the Court adopts the following construction: **Widest part of the top end of the implant, namely the top thread of the implant.**

*6.* *Cylindrical*

The parties' proposed constructions are as follows:

| **Plaintiffs** | **Defendant** |
|---|---|
| No construction necessary because this term is not disputed. | Having the shape of a cylinder with straight side walls that are parallel to a central axis. |

"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. It is not an obligatory exercise in redundancy." *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). As such, a court need not construe terms that are not actually in dispute. *See id.*; *see, e.g.*, *Eli Lilly and Co. v. Aradigm Corp.*, 376 F.3d 1352, 1360 (Fed. Cir. 2004).

Plaintiffs contend the Court should not construe the term "cylindrical" in the '160 patent because Defendant "has never argued that its accused implants do not satisfy the 'cylindrical' limitation of the '160 patent. Instead, Defendant's expert has admitted that the Trilobe implants include a cylindrical portion." (Plf's Opening Brief 15; Plf's Ex. 36 at 25; 7/24/09 Transcript 27.) Defendant seems to concede this point in its Reply because it does not even address the term "cylindrical" in the '160 patent other than to simply list its proposed construction.[9] (Reply 16.)

In light of the fact that there does not appear to be a dispute regarding the meaning of the term "cylindrical" in the '160 patent, the Court declines to construe this term.

B. The '291 Lobe Patent

The disputed terms appear in boldface below.

> Claim 1: A dental implant for supporting a dental prosthesis, the dental implant comprising a body portion and a top surface, the implant further comprising an

[9] To the extent Defendant contends, in its Motion, that the Court should adopt the same construction for the term "cylindrical" in the '160 patent as it adopts for the meaning of the term "cylindrical portion" in the '291 patent, the Court rejects that contention because Defendant has not given the Court any compelling reason to do so.

> internal cavity with an opening located at the top surface, the internal cavity comprising an interlock chamber having a depth measured from the top surface equal to a first distance, the interlock chamber comprising a non-threaded **cylindrical portion** and plurality of semi-circular channels arranged around a **periphery** of the cylindrical portion, and a threaded chamber that includes threads and is located below the interlock chamber, wherein the cylindrical portion has a **first radius** and the channels have a second radius, a ratio of the first radius to the second radius being between approximately 4:1 and 2:1; wherein the implant further includes a non-threaded post-receiving chamber that is located below the interlock chamber and above the threaded chamber, the post-receiving chamber having a depth measured from the top surface that is equal to a second distance.

(Swaroop Decl. Ex. 2, col. 9, ll. 50-67.)

*1. Cylindrical Portion*

The parties' proposed constructions are as follows:

| **Plaintiffs** | **Defendant** |
|---|---|
| A portion that has the general shape of a cylinder, including variations in diameter along the length of the cylinder. | An opening shaped like a cylinder having walls that are parallel to each other in cross-section and to a central axis of the opening. |

Unlike the term "cylindrical" in the '160 patent, the parties actually dispute the meaning of the term "cylindrical portion" in the '291 patent. The parties' dispute revolves around whether this portion of the implant must have parallel walls.

Plaintiffs have presented evidence showing that the standard dictionary definition of "cylindrical" is "relating to or having the form or properties of a cylinder." (Plf's Ex. 12 (Webster's) at 565.) Defendant has presented evidence that the standard dictionary definition of "cylinder" refers to an object with parallel walls. (Def.'s Opening Brief 10; Dugger Decl. ¶ 5.)

Plaintiffs contend that the term "cylinder" and "cylindrical" have a special meaning in the dental implant industry. Specifically, Plaintiffs contend that the terms "cylindrical" and "cylinder" refer to cylindrically shaped implants with tapered, as well as parallel, walls. (Plf's Opening Brief 20.)

The language of the claim does not define the term "cylindrical portion." The claim simply states that the interlock chamber has a "cylindrical portion." (Swaroop Decl. Ex. 2, col. 9, l. 56.) The claim does not specifically describe the precise shape of that cylindrical portion.

The specification likewise lacks a precise definition of the contours of the "cylindrical portion" of the interlock chamber. The specification does, however, state that the interlock chamber includes a "substantially cylindrical portion." (Swaroop Decl. Ex. 2.) The Federal Circuit has previously explained that "substantially" generally means "considerable in . . . extent . . . or largely but not wholly that which is specified" and is "a descriptive term commonly used

in patent claims to avoid a strict numerical boundary to the specified parameter." *Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1366-7 (Fed. Cir. 2001) (internal citations omitted). The Court finds the inventor's use of the word "substantially" helpful in determining the meaning of the term "cylindrical portion" because such use indicates that the inventor may have wanted to avoid a strict interpretation of the term "cylindrical." Logically, it would make sense that the inventor would allow for some deviation from strictly parallel walls because the specification explains that the implant's body may be tapered, conical, or cylindrical. (Swaroop Decl. Ex. 2, col. 4, ll. 61-63.) Thus, to the extent the implant body is tapered or conical, the internal interlock chamber may need to be modified to accommodate the externally tapered walls.

Plaintiffs rely on various types of extrinsic evidence to support their contention that "cylindrical portion" includes a cylinder with tapered, as well as parallel, walls. Plaintiffs' expert has explained that "tapered cylinders are frequently referred to as 'cylinders' in dental implantology." (Brunski Decl. ¶ 42.) Plaintiffs also point out that they market several types of implants and accessories that are referred to as "cylinders," but have tapered walls. (Swaroop Decl. Exs. 4, 7, 8, 9.) Plaintiffs have also presented evidence showing patents for other dental implants and accessories refer to objects as "cylinders" or "cylindrical" even thought they have tapered walls. (Swaroop Decl. Exs. 20-21.) Plaintiffs also point out that, according to the Glossary of Oral and Maxillofacial Implants, a "cylindrical implant" is an "[i]mplant of variable design and configuration, depending on the implant system. One such design, determined either in cross-section or three-dimension, follows the shape of a cylinder for an endosteal implant." (Swaroop Decl. Ex. 3 at 41.)

Defendant contends that Plaintiffs' extrinsic evidence does not actually support their contention. At the *Markman* hearing, Defendant's counsel stated "that in, save one, every example cited by the plaintiff of a tapered cylinder uses the phrase tapered cylinder . . . so when the phrase tapered cylinder is used in the dental implants, we would concede, yes, when you talk about a tapered cylinder, that is a shorthand term that might be used in the field of dental implants to refer to something which is more precisely determined or denoted . . . as a frustocone. Tapered cylinder is a shorthand way of referring to a frustocone, but the patent doesn't say tapered cylinder. The patent says cylinder or cylindrical." (7/24/09 Transcript 76-77.) Defendant, however, appears to have overstated its position because Plaintiffs have actually presented evidence of *several* instances of the use of "cylindrical" or "cylinder," without the modifier "tapered," to refer to an object with tapered walls. (Swaroop Decl. Exs. 7-9.)

As a result, to the extent Defendant contends that "cylindrical portion" refers to a cylinder with strictly parallel sides, the Court declines to adopt Defendant's construction because it is not supported by the language of the patent nor use of the term in the dental implant field. However, to the extent Plaintiffs' proposed construction includes a cylinder that tapers sharply from one end to the other, the Court likewise rejects that construction as not supported by the language of the patent and too broad because, as Defendant's counsel pointed out at the hearing, it would include an object that is more accurately described as a frustocone.

In light of the foregoing, the Court adopts the following construction: **a portion that has the substantial shape of a cylinder including slight variations in diameter along the length of the cylinder.**

*2. First Radius*

The parties' proposed constructions are as follows:

| **Plaintiffs** | **Defendant** |
|---|---|
| Any radius of the cylindrical portion. | The fixed radius of the cylindrical portion. |

The parties' dispute as to this term revolves around whether this term refers to a fixed radius. Plaintiffs contend that this term simply differentiates between the first, second, third, and fourth radius. Defendant, however, contends that this term refers to the fixed radius of the cylindrical portion. It appears that the construction of this term depends on how the Court construes "cylindrical portion" because if the Court construes that term as an object with parallel walls, the first radius would necessarily refer to a fixed radius because a cylinder with parallel walls has one fixed radius.

In light of the foregoing and the Court's construction of the term "cylindrical portion" as including only slight variations in diameter along the length of the cylinder, the Court adopts a construction that is consistent with the construction of the term "cylindrical portion": **the substantially fixed radius of the cylindrical portion.**

*3. Periphery*

The parties' proposed constructions are as follows:

| **Plaintiffs** | **Defendant** |
|---|---|
| Perimeter of the cylindrical portion. | The outermost perimeter of the cylindrical portion. |

The parties' proposed constructions are nearly identical. Plaintiffs contend that this term is clear and does not require construction. Neither party disputes that this term refers to the outside perimeter of the cylindrical portion. Defendant has not shown that the Court needs to specify that "periphery" refers to the "outermost" perimeter. Moreover, it appears that the Federal Circuit has previously referred to the ordinary and customary meaning of "periphery" as "'the perimeter of a circle, ellipse, or other closed curvilinear figure.'" *Omega Engineering, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1322 (Fed. Cir. 2003) (quoting Webster's Third New Int'l Dictionary 1681 (1993)).

In light of the foregoing, the Court adopts the following construction: **Perimeter of the cylindrical portion.**

## V. CONCLUSION

The Court hereby construes the claims as set forth above.

**SO ORDERED.**

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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

**CIVIL MINUTES - GENERAL**

| Case No. | CV 08-1407 ODW (RZx) | Date | October 14, 2009 |
|---|---|---|---|
| Title | *Nobel Biocare USA, LLC, et al. v. Blue Sky Bio, LLC, et al.* | | |

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