

United States District Court,  
E.D. Pennsylvania.

**CERTAINTEED CORP. Plaintiff,**  
CERTAINTEED CORP. Plaintiff.

v.

**MODERN PRODUCTS INDUSTRIES,**  
INC. et al. Defendants.

**May 2, 2005.**

Anthony J. Fitzpatrick, Duane Morris LLP, Boston, MA, Maura McInerney, Duane Morris LLP,  
Philadelphia, PA, for Plaintiff.

John C. Cave, Ted D. Lee, Gunn Lee & Hanor PC, San Antonio, TX, Richard M. Jordan, Richard Hans  
Maurer, White and Williams LLP, Philadelphia, PA, for Defendants.

### ***MEMORANDUM AND ORDER***

**TUCKER, J.**

CertainTeed Corporation ("CertainTeed") and Modern Products Industries, Incorporated ("Modern Products") are direct competitors. Both companies develop, manufacture and market products for use in the well and piping industries. The patent in suit, United States Patent No. 6,666,480 (" '480 patent") entitled "Submersible Pump Drop Pipe and Casing Assembly Connection and Method of Manufacture," owned by Modern Products, involves plastic piping for use in water wells. More specifically, the patent concerns a purportedly novel connection between two lengths of plastic pipe. This connection is formed by screwing one end of one pipe (which has threads on the outside) into one end of a second pipe (which has threads on the inside). According to the patent, the resulting connection has "lateral strength," i.e. strength to withstand side-to-side forces. The product which embodies this invention is Modern Products' SHUR-ALIGN drop pipe. CertainTeed's product which allegedly infringes the '480 patent is sold under the name of KWIK-SET.

The '480 patent has only one independent claim, Claim 1, and the parties have agreed on the construction of certain terms in that claim. However, CertainTeed asserts that Modern Products used vague language in several limitations of the claim, and consequently, those claim limitations must be construed by this Court. Pursuant to *Markman v. Westview, Inc.*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), this Court held a "Markman hearing" to determine the meaning of those disputed terms as used in Claim 1 of the '480 patent.

### ***RELEVANT LANGUAGE OF THE PATENT-IN-SUIT***

**Claim 1 of the '480 Patent**

1. A single piece polyvinyl chloride (PVC) pipe of a predetermined interior diameter that has lateral strength when connected to a similar adjacent PVC pipe, said PVC pipe comprising;  
a male end of said PVC pipe which has external threads;  
  
a female end of said PVC pipe;  
  
a first enlarged interior diameter of said PVC pipe at said female end, said first enlarged interior diameter being larger than said predetermined interior diameter and having internal threads to mate with said external threads of said male end for said similar adjacent PVC pipe;  
  
a second enlarged interior diameter being larger than said first enlarged interior diameter and terminating said PVC pipe at said female end, said second enlarged interior diameter being (a) slightly larger in diameter than said male end of said similar adjacent PVC pipe to receive said male end therethrough and (b) long enough to provide said lateral strength when connected to said similar adjacent PVC pipe, said second enlarged interior diameter being at least long enough to received [sic] most of said external threads from said similar adjacent PVC pipe therein before threading;  
  
said male end and said second enlarged interior diameter at said female end funneling said PVC pipe and said similar adjacent PVC pipe together;  
  
said PVC pipe being reusable and of a substantially uniform circumference at the male end.

'480 Patent, Col. 5, Lines 9-32 & Col. 6, Lines 1-6.

#### ***TECHNOLOGY FN1***

FN1. This section borrows language from both parties' submitted Technical Briefs (Docs. 39 & 40).

The field of the purported invention claimed in the '480 patent is plastic pipe for use in water wells. The type of plastic used is called polyvinyl chloride, or "PVC." A water well is created by drilling into an aquifer, which is a layer of sediment or rock containing water. When the well is drilled, a PVC pipe called a "casing" is inserted into the well to ensure that the walls of the well do not cave in. A pump is placed in the well to pump water to the surface. A second pipe called a "drop pipe," having a diameter smaller than that of the casing, is placed inside the casing and is attached to the pump. The drop pipe carries the water from the pump to the surface.

The PVC pipe is made by using a well-known technology called "extrusion." In this process, PVC resin or powder is fed into one end of a heated steel barrel. The barrel contains a rotating screw mechanism. The heat of the barrel, and the force of the rotating screw, cause the PVC resin to melt and mix together. The rotating screw pushes the melted PVC through a "die" at the other end of the barrel. The die has a specially designed cross-section. As the melted PVC is pushed through the die, it takes on the shape permitted by the die. In the case of PVC pipe, this shape is cylinder. As it comes out of the die, the PVC is immediately cooled, typically using water. The PVC is then pushed forward and cut into appropriate lengths.

PVC pipe for use in water wells is typically cut into lengths of twenty (20) feet. Prior to the '480 patent, PVC pipes were connected with metal or plastic couplings or separate fittings or were connected with the use of cement or "pipe dope." The '480 patent purports to disclose a novel way of connecting two lengths of

PVC pipe (either drop pipe or casing) together. In the '480 patent, the pipe has external threads on one end (called the "male end"). On the other end (called the "female end"), the pipe has two enlarged diameter sections, the "first enlarged interior diameter" and the "second enlarged interior diameter." The threads are cut into the interior surface of the first enlarged interior diameter of the female end. Two lengths of pipe can be connected together by screwing the external threads on one end of one pipe into the internal threads on one end of the other pipe.

According to Modern Products, when two lengths of this pipe are screwed together, the connection between them has "lateral strength," i.e. strength to withstand side-to-side forces. The specification of the '480 patent states that this lateral strength comes from the second enlarged diameter section at the female end. It is the design of the "belled" female end and the manner in which it connects to the threaded male end of a connecting pipe which provides the novel aspect of the '480 patent. This issue of "lateral strength" was central to the USPTO's allowance of Modern Products' patent application.

In general, two types of forces are exerted on the connections of water well pipes. The first is a pulling force at the connection in the direction of the length of the pipe and is commonly referred to as "tensile stress." The second type of force operates on the walls of the pipe in a direction perpendicular to the length of the pipe. These forces, referred to as "lateral forces," can be caused by internal pressure or by bending of the pipe during insertion and removal from the well. The second enlarged interior diameter acts to receive and withstand the lateral forces created by the bending of the pipe and, in turn, relieves the tensile and compressive forces on the threads and the lateral forces exerted on the weaker walls of the pipe opposite the interior threads. This is the "lateral strength" provided by the second enlarged interior diameter which is referred to in the '480 patent.

### ***PRINCIPLES OF CLAIM CONSTRUCTION***

In this case, there are several terms used in the claim language of the '480 patent which are in dispute. The Supreme Court has recognized that the task of interpreting the claims of a patent belongs to the court, as opposed to the jury. *Markman*, 517 U.S. at 391. "The 'claim construction inquiry begins and ends in all cases with the actual words of the claim." ' *Biovail Lab., Inc. v. Torpharm, Inc.*, 326 F.Supp.2d. 605, 608 (E.D.Pa.2004) (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1324 (Fed.Cir.2002)). "Absent an express intent to impart a novel meaning to a claim term, the words take on the ordinary and customary meaning attributed to them by those of ordinary skill in the art." *TI Group Auto. Sys. Inc. v. VDO N. Am., L.L.C.*, 375 F.3d 1126, 1133 (Fed.Cir.2004). To determine the ordinary and customary meaning of a claim term, the court may review sources including the claims themselves, dictionaries and treatises, and the written description, drawings and prosecution history. *Id.* at 1133-34. The presumption in favor of a word's ordinary and customary meaning or dictionary definition will be overcome where the patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning. *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1204 (Fed.Cir.2002). In addition, the terms of the claim are to be defined in the context of the whole patent. *Reinshaw PLC v. Marposs Societa' Per Azioni*, 158 F.3d 1243, 1250 (Fed.Cir.1998).

First, "[i]n construing the claims, a court first looks to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996). Second, the court shall review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. *Id.* ( [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."). Third, the Court may also consider the prosecution history of the patent. *Id.* "In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence." *Id.* at 1583.

## ***CONSTRUCTION OF THE DISPUTED TERMS***

### **1. "External Threads"**

#### **a. Claim Term:**

"... a male end of said PVC pipe which has *external threads* ..."

#### **b. Parties' Contentions**

CertainTeed's proposed construction of "external threads" is "helical or spiral ribs or grooves on the outer surface of the male end of the PVC pipe." Pl's *Markman* Brief at 10. In construing this phrase, the parties agree on two issues: (1) the word "threads" should be construed to mean "helical or spiral ribs or grooves;" and (2) the word "external" should be construed to mean that the threads are "on the outer surface of the male end of the PVC pipe." *Id.* However, this is where the agreement ends. CertainTeed contends that Modern Products, in support of its proposed construction, relies on extrinsic evidence, namely a specification from the American Society for Testing and Materials, to go beyond the scope of the unambiguous and ordinary meaning of this term. Further, CertainTeed argues that Modern Products' proposed construction is inconsistent with the specification of the '480 patent and the sole preferred embodiment disclosed therein, as the specification does not draw or suggest any distinction between those male end threads that engage the female end threads and those that do not. If Modern Products wanted the term "external threads" to mean only those threads which actually engage the female end threads, it would have made that distinction explicit.

Modern Products' proposed construction of "external threads" is "helical or spiral ribs or grooves on the outer surface of the male end of the PVC pipe which mate with corresponding helical or spiral ribs or grooves disposed within the interior surface of the female end of a similar adjacent PVC pipe." In support of this contention, Modern Products states that only threads which can mate with and engage the opposite threads of a similar adjacent PVC pipe qualify as "external threads" as specified in the claim. This construction is necessitated by the context of the surrounding words in the claim. For example, Claim 1 recites that the "external threads" are intended for "threading." "Threading" means interlocking. Def's Claim Construction Brief at 23. Therefore, only interlocking or mating threads are contemplated by the term "threads." The specification also contemplates that external threads are intended for threading. Specification, Col. 3, Lines 46-48. Further, the ordinary meaning of the word "thread" as defined in dictionaries, supports Modern Products' claim that threads are only those which "screw together" or are "connecting and holding together." Def's Claim Construction Brief at 24.

#### **c. Court's Construction**

This Court concludes that the term "external threads" means "helical or spiral ribs or grooves on the outer surface of the male end of the PVC pipe which mate with corresponding helical or spiral ribs or grooves disposed within the interior surface of the female end of a similar adjacent pipe." This term is construed in

accordance with the claim and specification, and dictated by its ordinary and customary meaning. The Court agrees with Modern Products' proposed construction because it is supported by the claim language, in the context of the entirety of the invention, and construed in accordance with the specification. *See Markman*, 52 F.3d at 979 (stating that claims must be read in view of the specification of which they are a part.). Claim 1 qualifies the term external threads by their ability "to mate with each other." Claim 1 also recites that the external threads are threading. CertainTeed has agreed that threading means interlocking. Def's Claim Construction Brief at 23. The Claim mentions mating and/or threading; mating or threading, after all, is the only functional purpose of the threads. Further, the specification states, "[t]hreads of second end are intended for threading onto threads to provide this water tight connection." Specification, Col. 3, Lines 46-48. Consequently, only threads that can mate with and engage the opposite threads of a similar adjacent PVC pipe qualify as external threads, as specified in the claim.

## **2. "Internal Threads"**

### **a. Claim Term:**

"... a female end of said PVC pipe; a first enlarged interior diameter of said PVC pipe at said female end, said first enlarged interior diameter ... having *internal threads* to mate with said external threads of said male end for said similar adjacent PVC pipe ..."

### **b. Parties' Contentions**

CertainTeed's proposed construction of "internal threads" is "helical or spiral ribs or grooves disposed on the interior surface of the female end of the PVC pipe to mate with helical or spiral ribs or grooves on the outer surface of the male end of a similar adjacent PVC pipe." In support, CertainTeed points out that the claim plainly states that the first enlarged diameter section has "internal threads *to* mate with said external threads of said male end for [sic] said similar adjacent PVC pipe." (emphasis added). CertainTeed's proposed construction incorporates this language. However, CertainTeed argues that Modern Products is seeking to rewrite this claim element by substituting the word "which" for the word "to" in the claim. CertainTeed contends that the language of this claim is unambiguous, and there is no basis in the intrinsic record for deviating from that language or altering the ordinary meaning.

Modern Products' proposed construction of "internal threads" is "helical or spiral ribs or grooves disposed on the interior surface of the female end of the PVC pipe which mate with corresponding helical or spiral ribs or grooves on the outer surface of the male end of a similar adjacent PVC pipe." Modern Products asserts the same argument as made for the construction of the term "external threads." *See supra*.

### **c. Court's Construction**

This Court concludes that the term "internal threads" means "helical or spiral ribs or grooves disposed on the interior surface of the female end of the PVC pipe *which* mate with corresponding helical or spiral ribs or grooves on the outer surface of the male end of a similar adjacent PVC pipe." This term is construed in accordance with the claim and specification, and dictated by its ordinary and customary meaning. For many of the same reasons stated in the discussion of the claim term "external threads," the Court agrees with Modern Products' proposed construction because it is supported by the claim language and construed in accordance with the specification. Additionally, this construction is not inconsistent with the term's ordinary and customary meaning. *See supra* pg. 7.

### **3. "At Least Long Enough to Receive Most of Said External Threads From Said Similar Adjacent PVC Pipe Therein"**

#### **a. Claim Term:**

"... said second enlarged interior diameter being at least long enough to received [sic] most of said external threads from said similar adjacent PVC pipe therein before threading ..."

#### **b. Parties' Contentions**

CertainTeed's proposed construction of "at least long enough to received [sic] most of said external threads from said similar adjacent PVC pipe therein" is "the second enlarged interior diameter must be at least long enough to receive most of, i.e. more than 50.00% of, the external threads on the male end or a similar adjacent PVC pipe, before any of the external threads at the male end are interlocked with the internal threads in the first enlarged interior diameter of the female end." The only issue disputed by the parties is how the words "said external threads" should be construed. Pl's *Markman* Brief at 15. CertainTeed contends that the phrase should be construed in accordance with its plain meaning to simply mean "the external threads on the male end of a similar adjacent PVC pipe."

The parties agree on the central issue in this claim element, namely that the words "at least long enough to received [sic] most of" should be construed in accordance with their plain, ordinary meaning. However, CertainTeed's proposed construction interprets "most of" to mean "i.e. more than 50.00% of, the external threads on the male end of a similar adjacent pipe." CertainTeed argues that this interpretation is in keeping with the teaching of the Federal Circuit that quantitatively precise claim elements must be construed precisely. *See* *Elekta Instruments S.A. v. O.U.R. Scientific Int'l Inc.*, 214 F.3d 1302, 1307-08 (Fed.Cir.2000).

Modern Products' proposed construction of "at least long enough to received [sic] most of said external threads from said similar adjacent PVC pipe therein" is "said second enlarged interior diameter is long enough to receive most of the external threads from said similar adjacent PVC pipe which mate with the internal threads of a similar adjacent PVC pipe, before any of the external threads at the male end are interlocked with the interior threads in the first enlarged interior diameter of the female end." Modern Products, in support of this proposed construction, states that this limitation, like the others, must be construed in context. The limitation contemplates threads that mate. "Because claim 1 qualifies the word 'threads' by their ability 'to mate,' this limitation requires the second enlarged diameter to be long enough to cover most of the threads that mate before they are threaded together." Def's Claim Construction Brief at 31.

#### **c. Court's Construction**

The Court concludes that "at least long enough to received [sic] most of said external threads from said similar adjacent PVC pipe therein" means "said second enlarged interior diameter is long enough to receive most of the external threads from said similar adjacent PVC pipe which mate with the internal threads of a similar adjacent PVC pipe, before any of the external threads at the male end are interlocked with the interior threads in the first enlarged interior diameter of the female end." This term is construed in accordance with the claim and specification, and dictated by its ordinary and customary meaning. Claim 1 contemplates that threads mate, and qualifies the term "threads" by their ability to mate. Thus, this limitation requires the second enlarged interior diameter be long enough to cover most of the threads that mate before they are threaded together. In addition, this Court notes that it is improper to read a limitation

into a claim from the written description or specification, as CertainTeed has urged the Court to do by proposing the following language: "i.e. more than 50.00% of, the external threads on the male end of a similar adjacent pipe." *See* *Elekta*, 214 F.3d at 1307-08 (citing *Renishaw*, 158 F.3d at 1248). The term was not defined using quantitatively precise language, distinguishing it from *Elekta*, therefore, that language will not be added to the claim term. *See* *Comark Communications v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed.Cir.1998) (citing *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1577 (Fed.Cir.1988)) ("Although 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.").

#### **4. "Lateral Strength"**

##### **a. Claim Term:**

"A single piece polyvinyl chlorine (PVC) pipe of a predetermined interior diameter that has *lateral strength* when connected to a similar adjacent PVC pipe ..."

##### **b. Parties' Contentions**

CertainTeed's proposed construction of "lateral strength" is "when connected to a similar adjacent pipe, a pipe 2 inches in diameter has sufficient lateral strength so that a lateral force of 1,000 pounds must be exerted before the pipe will start leaking." CertainTeed argues that Modern Products' proposed construction would render this claim term meaningless because any two lengths of pipe connected to each other have some degree of lateral strength. Thus, if the term "lateral strength" simply means some strength to resist lateral forces, then it is essentially meaningless because all connected lengths of pipe have some "lateral strength."

The specification of the '480 patent states that this invention is noteworthy because it has a high degree of lateral strength, as opposed to other pipes. Specification of '480 patent, col.1, lines 45-47. The "lateral strength" limitation was added to overcome prior art rejections. Pl's *Markman* Brief at 8. It is CertainTeed's assertion that the answer to how much "lateral strength" is necessary is found in the specification, which states "it was found that laterally pushing on the pipe, a force of 1,000 pounds has to be exerted before the pipe will start leaking." Specification of '480 patent, col.1, lines 48-50. Further, the only embodiment described in the specification is a pipe 2 inches in diameter, so CertainTeed claims that it is fair to assume that this level of strength applies to a pipe 2 inches in diameter. This is how CertainTeed arrived at its proposed construction. CertainTeed avers that in this case, Modern Products clearly disclaimed an interpretation of the phrase "lateral strength" to mean just any or some lateral strength, and the only guidance as to how much strength is sufficient is found in the specification. Consequently, CertainTeed's proposed construction is consistent with the specification.

Modern Products' proposed construction of "lateral strength" is "the strength of connected PVC pipe which will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." Modern Products argues that the term "lateral strength" does not lend itself to quantitative measurement. The plain and ordinary meaning of the phrase "lateral strength" refers to a material's solidity or toughness in resisting forces from the side. Also, the dictionary does not define "strength" in quantitative terms. It is a qualitative characteristic. Thus, when Claim 1 recited that a PVC pipe has "lateral strength," it refers to a quality of toughness that resists forces exerted on the pipe from the side.

The term "lateral strength" must be construed in the context of the surrounding words of the claim. In the context of Claim 1, lateral strength results from connecting the pipes together and the length of the second enlarged interior diameter. Modern Products acknowledges that the average pipe has some degree of lateral strength, however, what distinguishes the '480 patent is the lead-in section of the pipe, what is referred to as the "second enlarged interior diameter" section of the pipe. In connection with this, the "long enough" limitation increases the surface area of the joint resisting lateral forces by half because it is long enough to cover most of the external threads that mate before they are threaded together. Modern Products alleges that this construction is reinforced by the prosecution history, and because the prosecution history consistently intertwined the "lateral strength" and "long enough" limitations, they must be construed together and not in isolation.

The only quantitative construction that can justifiably be given to "lateral strength" is already described in the claim; that construction being the requirement that the pipe have a lead-in section long enough to receive most of the threadable external threads from the similar adjacent PVC pipe before they are threaded. Modern Products states that this quantitative limitation increases by half the surface area able to resist lateral forces. Modern Products urges that CertainTeed's proposed construction is clearly erroneous, is not the plain meaning of the phrase, violates the long-standing claim construction rule against importing extraneous limitations from the specification into the claim, and imports limitations from dependent Claim 4, rendering it superfluous.

### **c. Court's Construction**

The Court concludes that "lateral strength" means "the strength of connected PVC pipe which will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." The Court agrees with Modern Products that this construction is supported by the plain and ordinary meaning of the words and is supported by the specification and prosecution history. Further, CertainTeed seeks to add quantitative limitations to the claim, which violates the rules of construction. *See Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361, 1368 (Fed.Cir.2004) (citing *Comark Communications v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed.Cir.1998)). The passages cited by CertainTeed do not expressly or by clear implication restrict the scope of the invention as suggested in CertainTeed's proposed construction. *See Liebel-Flarsheim Co. v. Medrad, Inc.* 358 F.3d 898, 908 (Fed.Cir.2004). Therefore, the Court will define "lateral strength" without a quantitative limitation.

## **5. "Long Enough to Provide Said Lateral Strength"**

### **a. Claim Term:**

"... a second enlarged interior diameter being larger than said first enlarged interior diameter and terminating said PVC pipe at said female end, said second enlarged interior diameter being ... (b) *long enough to provide said lateral strength* when connected to said similar adjacent PVC pipe ..."

### **b. Parties' Contentions**

CertainTeed's proposed construction of "long enough to provide said lateral strength" is "the second enlarged interior diameter section must be long enough so that, when connected to a similar adjacent pipe, a pipe 2 inches in diameter has sufficient lateral strength so that a lateral force of 1,000 pounds must be exerted before the pipe will start leaking." Modern Products' proposed construction of "long enough to provide said lateral strength" is "the second enlarged interior diameter section must be long enough so that,



when connected to a similar adjacent pipe, the strength of the connected PVC pipe will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." In support of their proposed construction, CertainTeed and Modern Products rely on the arguments made in support of their construction of the term "lateral strength."

### **c. Court's Construction**

The Court concludes that "long enough to provide said lateral strength" means "the second enlarged interior diameter section must be long enough so that, when connected to a similar adjacent pipe, the strength of the connected PVC pipe will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." The reasons for this construction are described in detail in the Court's discussion of the term "lateral strength." *See supra* pgs. 12-14.

## **6. "Slightly Larger in Diameter Than Said Male End"**

### **a. Claim Term:**

"... a second enlarged interior diameter being larger than said first enlarged interior diameter and terminating said PVC pipe at said female end, said second enlarged interior diameter being (a) *slightly larger in diameter than said male end* of said similar adjacent PVC pipe to receive said male end therethrough ..."

### **b. Parties' Contentions**

CertainTeed's proposed construction of "slightly larger in diameter than said male end" is "the second enlarged interior diameter is approximately 21-25% larger than the exterior diameter of the male end." CertainTeed contends that the claim gives no direction as to what "slightly" means. Thus, the Court must look to the specification for some standard for measuring that degree. The specification states that the "[f]irst cylinder section 109 [i.e. the second enlarged diameter section] is wider in diameter than second end 107 [i.e. the male end] by approximately 1/2 inch to allow for ease of insertion of second end 107 into first cylinder section 109." Pl's *Markman* Brief at 13 (citing Specification of '480 patent, col.3, lines 34-37). CertainTeed interprets the specification to state that if the male end is two inches in exterior diameter, then the interior diameter of the female end with a 1/2 inch oversize is 2.5 inches, or 25% larger. And even assuming that the pipe referenced in the specification means a pipe with a two inch interior diameter and an exterior diameter of 2.375 inches, the interior diameter of the female end would have to be 2.875 inches, or approximately 21% larger.

Modern Products' proposed construction of "slightly larger in diameter than said male end" is "the second enlarged interior diameter is slightly larger than the exterior diameter of the male end." Modern Products argues for a simple and straightforward construction. The term "slightly" is not quantitatively defined in the claim, and CertainTeed cannot argue that "slightly" is ordinarily defined in quantitative terms, much less that it specifically means "approximately 21-25%." *See* THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4<sup>th</sup> ed.2000). CertainTeed's proposed construction seeks to graft a limitation into the claim that has no basis in the claim language, the specification, or the prosecution history. On the other hand, Modern Products' proposed construction is consistent with the plain and ordinary meaning of the terms and the specification.

### **c. Court's Construction**

The Court concludes that "slightly larger in diameter than said male end" means "the second enlarged interior diameter is slightly larger than the exterior diameter of the male end." Limitations from the specification may not be read into the claim. *Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361, 1368 (Fed.Cir.2004) (citing *Comark Communications v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed.Cir.1998)). In this case, the limitation that CertainTeed attempts to read into the claim is tenuous at best. Further, words of approximation, such as "slightly," are descriptive terms commonly used in patent claims to avoid a strict numerical boundary to the specified parameter. *Anchor Wall Sys. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1311 (Fed.Cir.2003). As such, the Court will construe this term using its plain and ordinary meaning.

## **7. "First Enlarged Interior Diameter"**

### **a. Claim Term:**

"... a *first enlarged interior diameter* of said PVC pipe at said female end, said first enlarged interior diameter being larger than said predetermined interior diameter ..."

### **b. Parties' Contentions**

CertainTeed's proposed construction of "first enlarged interior diameter" is "a portion of the interior surface of the female end of the pipe which has an interior diameter greater than the predetermined interior diameter." CertainTeed asserts that this proposed construction is taken directly from the plain meaning of the phrase.

Modern Products' proposed construction of "first enlarged interior diameter" is "a portion of the interior surface of the female end of the pipe which, prior to having threads, has an interior diameter greater than the predetermined interior diameter." In support of this proposed construction, Modern Products states that Claim 1 describes the "first enlarged interior diameter" section as "having internal threads." Thus, it describes the "first enlarged interior diameter" in terms distinct from the "threads" themselves. Therefore, Modern Products avers that the relevant dimension is the interior diameter of this section prior to having threads. This construction is consistent with the surrounding words of the claim, and it is also consistent with the specification. In sum, Modern Products asserts that the threads are distinct from but carved into the first enlarged interior diameter.

### **c. Court's Construction**

The Court concludes that "first enlarged interior diameter" means "a portion of the interior surface of the female end of the pipe which has an interior diameter greater than the predetermined interior diameter." The Court agrees with CertainTeed that this construction encompasses the plain and ordinary meaning of the term. This Court does not read the specification or the actual claim language to support Modern Products' assertion that the term "first enlarged interior diameter" is distinct from the "threads." In fact, the claim language states that the first enlarged interior diameter is (1) larger than said predetermined interior diameter and (2) has internal threads to mate. There is no indication from the plain meaning of this limitation that the first enlarged interior diameter is to be considered separate from its threads, when, as stated in the claim, having internal threads is one of the first enlarged interior diameter's defining characteristics. Further, as stated previously, it is improper to rely on the specification to read limitations into the claim, as Modern Products has attempted to do with this term. *Liquid Dynamics Corp.*, 355 F.3d at 1368.

## **8. "Substantially Uniform Circumference at the Male End"**

### **a. Claim Term:**

"... said PVC pipe being reusable and *of a substantially uniform circumference at the male end.*"

### **b. Court's Construction**

The parties have agreed that the term "substantially uniform circumference at the male end" means "the exterior circumference at the male end must be substantially uniform." Therefore, this Court will adopt the parties' agreed-upon proposed construction without discussion.

### ***CONCLUSION***

The discussion and analysis presented above represents this Court's construction of the parties' disputed terms. An appropriate order follows.

### ***ORDER***

AND NOW, this \_\_\_\_ day of May, 2005, upon consideration of the briefs, exhibits, and oral argument presented by the parties in conjunction with the *Markman* hearing in which they all participated, IT IS HEREBY ORDERED and DECREED that the meaning and scope of the patent claim asserted to be infringed and presented by the parties for construction is determined as set forth in the foregoing Memorandum.

IT IS FURTHER ORDERED that the parties to the above-captioned case shall contact the Court by letter within (10) days of the date of this Order indicating the status of the above-captioned case to include: (1) the status of discovery; (2) whether there have been settlement negotiations, and (3) a proposed schedule of deadlines for dispositive motions and a proposed trial date.

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