

**UNITED STATES DISTRICT COURT  
DISTRICT OF MINNESOTA**

3M Innovative Properties Co. and  
3M Company,

Civil No. 13-1287 (DWF/JJK)

Plaintiffs,

v.

**MEMORANDUM  
OPINION AND ORDER**

GDC, Inc., and Monadnock  
Non-Wovens, LLC,

Defendants.

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Ariel O. Howe, Esq., David J. F. Gross, Esq., David R. Merritt, Esq., Elizabeth Cowan Wright, Esq., James W. Poradek, Esq., and Timothy M. Sullivan, Esq., Faegre Baker Daniels LLP, counsel for Plaintiffs.

James K. Cleland, Esq., and Joshua E. Ney, Esq., Brinks Gilson & Lione; and Kurt J. Niederluecke, Esq., and Timothy M. O’Shea, Esq., Fredrikson & Byron, PA, counsel for Defendants.

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**INTRODUCTION**

This matter is before the Court on the issue of patent claim construction pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996).

**BACKGROUND**

This litigation involves allegations by Plaintiffs 3M Innovative Properties Co. and 3M Company (together, “3M”) that Defendants GDC, Inc. (“GDC”) and Monadnock Non-Wovens, LLC (“MNW”) (together, “Defendants”) are infringing one or more claims of U.S. Patent No. 5,773,375, entitled “Thermally Stable Acoustical Insulation” (the

“’375 Patent”), through the manufacture and sale of thermally stabilized insulation products. (Doc. No. 1, Compl., ¶¶ 11-15.)

The ’375 Patent relates to a “thermally stable acoustical insulation microfiber web for attenuation of sound waves.” (*Id.* ¶ 7, Ex. A (“’375 Patent”) at c. 11, ll:38-39.) The invention of the ’375 Patent is embodied in 3M’s Thinsulate™ Acoustic Insulation (“TAI”) product. (Doc. No. 79, Wright Decl. ¶ 2, Ex. 5.) TAI is a nonwoven melt-blown material made of extremely small polypropylene and polyester microfibers. (*See* ’375 Patent at c.1, ll:9-24.) In the early to mid-1990s, 3M was expanding the use of its Thinsulate™ technology to automotive and other industrial applications. (Wright Decl. ¶ 2, Ex. 6 at 3M00001118.) TAI is used in automobiles for noise reduction. (*Id.* ¶ 2, Ex. 8.)

3M’s first version of TAI was covered by U.S. Patent No. 5,298,694, entitled “Acoustical Insulating Web” (the “Thompson Patent”), which claims a method for attenuating sound waves, comprising steps including providing a non-woven acoustic insulation web with fiber diameter of less than about 15 microns, thickness of at least about 0.5 cm, density of less than about 50 kg/m<sup>3</sup>, and pressure drop of at least about 1 mm water at a flow rate of about 32 liters/min. (Wright Decl. ¶ 2, Ex. 7 (the “Thompson Patent”) at c. 19, ll:38-47.) 3M’s first version of TAI provided several advantages over existing insulation, namely higher sound absorption per weight and

easier compressibility. (Wright Decl. ¶ 2, Ex. 9 at 3M00095951-52; *id.* ¶ 2, Ex. 8.)<sup>1</sup> TAI includes two types of microfibers: polypropylene and polyester. (*Id.* ¶ 2, Ex. 11 at 3M00170717-18.) The polypropylene fibers dissipate sound energy into heat. (*Id.*) The polyester fibers provide durability and loft retention. (*Id.*)

3M manufactures its polypropylene melt-blown web as follows: polypropylene pellets are introduced into a hopper; the pellets are fed from the hopper to an extruder, where the pellets are subjected to pressure and heat so as to make them molten; the molten pellets are pumped toward a blown-microfiber die; and, the polypropylene melt is conveyed through the die that emits the polypropylene as extremely small microfibers that are stretched and made thinner by hot air and then collected to make a microfiber web. (Doc. No. 125, Osswald Decl. ¶ 23.)

In 3M's first version of the TAI, the polypropylene microfibers were susceptible to degradation at high temperatures and therefore could only be used in lower temperature areas of a car. ('375 Patent at c. 1, ll:11-27.) TAI was not recommended for use in areas that could become very hot, such as near the engine or surrounding the passenger cabin. 3M endeavored to solve the problem of degradation at high temperatures (or lack of thermal stability), the result being 3M's thermally stable acoustical insulation claimed in the '375 Patent.<sup>2</sup> The '375 Patent recites a thermally

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<sup>1</sup> Existing automotive acoustical insulation products included "shoddy," which consists primarily of clumps of cotton fibers. (Wright Decl. ¶ 2, Ex. 9 at 3M00095951.)

<sup>2</sup> The inventors on 3M's '375 Patent are Michael D. Swan and Ruth A. Ebbens. ('375 Patent at [76].)

stable acoustical insulation having a thermal stabilizer or antioxidant uniformly distributed throughout the microfibers such that they are stable at 135°C for at least 10 days. ('375 Patent at 7:30-39; 7:43-8:29;11:37-12:54.) The thermal stability of the insulation allows it to be used in more locations in cars than the original TAI, namely in areas that become hot. (Wright Decl. ¶ 2, Ex. 14.)

In 2003, Defendants began selling Sonozorb®, a polypropylene melt-blown microfiber acoustical insulation that 3M alleges infringes the '375 Patent. (Wright Decl. ¶ 2, Ex. 20 at 1; *id.* ¶ 2, Exs. 21 & 22; Doc. No. 25, Answer, ¶¶ 47-52.)<sup>3</sup> Today, Defendants advertise Sonozorb as acoustical insulation that will withstand temperatures of up to 110°C. (Wright Decl. ¶ 2, Ex. 22; Doc. No. 25 ¶ 52.)

In a Complaint filed on May 29, 2013, 3M alleges that Defendants' manufacture and sale of thermally stabilized acoustical insulation products under the brand name "Sonozorb" infringe the '375 Patent. (Compl. ¶¶ 10-15.) Defendants deny 3M's allegations and seek a declaration that the '375 Patent is invalid and/or not infringed.

## DISCUSSION

### I. Claim Construction Principles and the Law of Indefiniteness

#### A. Claim Construction

Patent claim construction, i.e., the interpretation of the patent claims that define the scope of the patent, is a matter of law for the court. *Markman v. Westview*

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<sup>3</sup> More specifically, MNW manufactures the melt-blown polypropylene microfiber web and sells it to GDC, which then cuts the microfiber web into parts such as door panels. (Answer ¶¶ 47-52; Wright Decl. ¶ 2, Ex. 21.)

*Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996).

Proper claim construction requires an examination of the intrinsic evidence of record, including the claim language, the specification, and the prosecution history. *Bell Atl.*

*Network Servs., Inc. v. Covad Commc'ns Grp., Inc.*, 262 F.3d 1258, 1267 (Fed.

Cir. 2001); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

The starting point for claim construction is a review of the words of the claims

themselves. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*)

(citation omitted); *see also Vitronics*, 90 F.3d at 1582 (“First, we look to the words of the

claims themselves, both asserted and unasserted, to define the scope of the patented

invention.”). The words of a claim generally carry “the meaning that the term would

have to a person of ordinary skill in the art at the time of the invention.” *Phillips*, 415

F.3d at 1313; *see also Bell Atl.*, 262 F.3d at 1367 (“As a starting point, we give claim

terms their ordinary and accustomed meaning as understood by one of ordinary skill in

the art.”).<sup>4</sup>

Claims must also be read in view of the specification. *Phillips*, 415 F.3d at 1315.

The specification is always “highly relevant” to claim construction and “the single best

guide to the meaning of a disputed term.” *Id.* (citing *Vitronics*, 90 F.3d at 1582.) The

specification “necessarily informs the proper construction of the claims.” *Phillips*, 415

F.3d at 1316 (explaining that the claims must be construed so as to be consistent with the

specification) (citation omitted).

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<sup>4</sup> The Court refers to a “person of ordinary skill in the art” and “skilled artisan” interchangeably throughout this Order.

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