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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Proceeding	91222215
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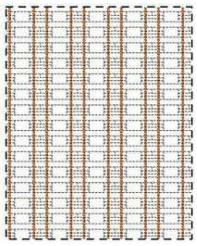
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

LUMITE, INC.,	)	
	)	
Opposer,	)	Opposition No. 91222215
	)	Application Serial No. 86/057,945
v.	)	Filing Date: September 6, 2013
	)	Publication Date: February 3, 2015
NICOLON CORPORATION,	)	Mark: 
	)	
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Applicant.	)	
	)	

OPPOSER LUMITE'S MOTION FOR JUDGMENT ON THE PLEADINGS AND MEMORANDUM IN SUPPORT

LUMITE, INC. ("Opposer"), through its undersigned attorneys, and pursuant to Rule 12(c) of the Federal Rules of Civil Procedure, Trademark Rule of Procedure 2.127(d) and TBMP § 504, moves for Judgment on the Pleadings against Nicolon Corporation ("Applicant") on the following grounds:

INTRODUCTION

This is a relatively simple case involving the Applicant's attempt to register the entire spectrum of the color orange for use on geosynthetics and geotextiles on the goods listed. The color orange, such as "safety orange," has long been used in the fields of construction, environmental, and historical sites as a visual warning barrier. But, Applicant asserts that it is entitled to exclusive use of the color despite the history and functionality of orange. As shown below, Opposer should be awarded Judgment on the Pleadings as the Applicant has failed to show its use of the color is anything other than functional, and in fact has admitted as much.

FACTUAL BACKGROUND

Applicant filed its Section 1(a) Application to register the COLOR ORANGE Mark, Serial No. 86057945, in connection with "[g]eosynthetics, namely, geotextiles for the purpose of drainage, stabilizing inclines, recultivation, plant support, absorption, filtration, separation, stabilization and reinforcement of the soil; geotextiles for use in connection with road construction, tunnel construction, waterway construction and public works construction; fabrics for use in civil engineering; erosion control fabric," in Class 19, with a date of first use of May 20, 2010 ("the Application").

Lumite, Inc. filed its notice of opposition against the Application on the grounds of Non-Distinctiveness and functionality under 15 U.S.C. § 1052(e). Opposer is entitled to judgment on the pleadings because: (1) Applicant is attempting to register the **entire** spectrum of the color orange for **all** geosynthetics and geotextiles, both above and below ground despite admitting that at least some of these usages are functional; (2) Applicant's admission from its Answer that the color orange is functional on the listed goods (e.g., the goods are "highly visible" because of the orange color, orange geotextile safety fencing is used on construction sites, orange is used on traffic cones and hunting vests, and the color orange contrasts visibly with dark soils); (3) the inherit functionality of the color orange in the construction field; and (4) Supreme Court precedent on functionality.

Applicant has failed to satisfy its burden of showing that its use of the color orange on geosynthetics and geotextiles has acquired distinctiveness as a source identifier and cannot truthfully contest that the alleged mark is functional.

1. **Applicant's goods are not limited in the manner Applicant falsely asserts nor is the Application limited to specific shade of orange.**

Despite Applicant's assertion otherwise, Applicant's goods recited in the Application are not limited to above or below ground use. Instead, the application lists "[g]eosynthetics, namely, geotextiles for the purpose of drainage, stabilizing inclines, recultivation, plant support, absorption, filtration, separation, stabilization and reinforcement of the soil; geotextiles for use in connection with road construction, tunnel construction, waterway construction and public works construction; fabrics for use in civil engineering; erosion control fabric," in Class 19. Applicant's description of the mark is "The color(s) orange is/are claimed as a feature of the mark. The mark consists of the color orange as applied to one or more yarns or threads woven into the body of geosynthetic or geotextile fabric of indefinite length and width producing a radiant orange surface when light strikes the fabric and the matter shown in broken lines is not part of the mark and serves only to show the position or placement of the mark." Applicant's attempt at distinguishing between above and below ground use is belied by its actual identification of goods. The Application encompasses *both* above and below ground use.

While the United States Patent and Trademark Office does not formally require an applicant to limit its trademark application to a specific color or pantone number, precedent generally requires it. (See UPS's Registration #2,901,090 for "chocolate brown…approximate equivalent of Pantone Matching System 462C;" T-Mobile's Registration #3,263,625 for "magenta along, which is the approximate equivalent of Pantone Matching System, Rhodamine Red U;" Tiffany's Registrations #2,359,351, #2,416,795, and #2,416,794, for "a shade of blue often referred to as robin's-egg blue;" 3M's Registrations #2,619,345 for "yellow shade approximately equivalent to Pantone color 123C," #2,390,667 for "canary yellow;" United States Gypsum Company's Registration #3,720,395 for "yellow green (Pantone 375);" Buffalo Wild

Wings, Inc.'s Registrations #2,950,567, #2,950,566 and #2,950,565 for "yellow-gold, also known as Pantone 116C;" Stanley Steemer International, Inc.'s Registration #3,182,240 for "yellow-orange, which is the approximate equivalent of Pantone Matching System 143C;" Thrifty, Inc.'s Registration #2,608,363 for "light blue (Pantone Matching System 300) used on vehicles;" Homestead, Inc.'s Registration #2,256,226 for "pantone 165C;" BP's Registration #4,525,967 for "Pantone Yellow #109, Pantone Light Green #368, and Pantone Dark Green #355" on its logo; and Esurance's Registrations #4,129,242 and #4,129,241 for "indigo blue known as Pantone color #2765" on its logo).

In Paragraphs 40 and 41 of the Answer, Applicant admits its trademark application makes claim to the entire orange spectrum. Therefore, under Applicant's assertion, no competitor could use **any** shade of orange on any type of geosynthetics or geotextile goods without infringing Applicant's alleged trademark. This includes geotextile safety fencing that the Applicant admitted in Paragraph 7 of the Answer was used on construction sites. This also includes "safety orange" which is by definition functional. The color orange as used in construction is functional.

2. Applicant's admissions show functionality.

Applicant has made admissions in the following numbered Paragraphs of the Opposition and Applicant's Answer:

- Allegation 5: "The color orange is commonly used for high-visibility applications, such as hunting vests and traffic cones."
    - Applicant's Answer: "Applicant admits that the color orange is used for traffic cones and hunting vests. Applicant is without knowledge or information sufficient to form a belief or sufficient to truthfully admit or deny the remaining allegations

asserted in Paragraph 5, and therefore denies the allegations, leaving Opposer to satisfy its burden of proof."

- Allegation 7: "Commonly-observed examples of use of the color orange on construction sites include orange geotextile safety fencing and orange geotextile silt fencing for erosion prevention."
    - Applicant's Answer: "Applicant admits that orange geotextile safety fencing is used on construction sites. Applicant is without knowledge or information sufficient to form a belief or sufficient to truthfully admit or deny the remaining allegations asserted in Paragraph 7, and therefore denies the allegations, leaving Opposer to satisfy its burden of proof."
- Allegation 14: "The color orange has been used in geotextiles to create a 'high visibility signal barrier for future excavations[.]' *See* Feb. 20, 2014 Office Action at 2 and webpage cited (http://www.sigmahellas.gr/index.php?lang=2&thecatid=4&thesubcatid=428&thesubsubcatid=434)."
    - Applicant's Answer: "To the extent Opposer is referencing the Office Action issued by the United States Patent and Trademark Office (USPTO) in which all the Examiner's refusals were withdrawn and the Application passed to publication, Applicant admits that the Office Action did contain the statement 'high visibility signal barrier for future excavations,' and the referenced webpage in the issued Office Action. The remaining allegations of Paragraph 14 are denied."

- Allegation 20: "The '945 Application takes into account the high visibility of the color orange, stating that: 'The mark consists of the color orange as applied to one or more yarns or threads woven into the body of geosynthetic or geotextile fabric … producing a radiant orange surface when light strikes the fabric[.]'"
    - Applicant's Answer: "Applicant admits that its Application's description of the mark states as follows: The mark consists of the color orange as applied to one or more yarns or threads woven into the body of a geosynthetic or geotextile fabric, producing a radiant orange surface when light strikes the fabric'. The remaining allegations of Paragraph 20 are denied."
- Allegation 23: "The website of Ten Cate (www.tencate.com) describes Applicant's Mirafi® geotextiles as follows: 'The use of this orange delineation fabric allows for safe excavations where utilities or other sensitive structures may be buried. The highly visible orange nonwoven geotextile serves as a warning to construction workers when the excavation reaches a buried structure.'"
    - Applicant's Answer: "Applicant admits that its Mirafi® Delineation Nonwoven Geotextiles are described in the cited website www.tencate.com, specifically at www.tencate.com/amer/geosynthetics/products/geotextiles/TenCate-Mirafi-Delineation/default.aspx, as follow: TenCate Mirafi® delineation geotextiles are staple fibers used for soil separation and drainage. They combine high durability, along with excellent physical and hydraulic properties. TenCate Mirafi® delineation geotextiles are produced from polypropylene staple fibers and combine high water flow rates and durability while providing excellent soil retention. TenCate Mirafi® nonwoven geotextiles are used in a wide variety of

applications in the environmental and general civil markets. These include separation, filtration and protection applications. TenCate Mirafi® delineation geotextiles are is used in many critical subsurface systems. The delineation fabric allows for safe excavations where utilities or other sensitive structures may be buried. The highly visible nonwoven geotextile serves as a warning to construction workers when the excavation reaches a buried structure. Applicant refers to and markets the delineation geotextiles as 'TenCate Mirafi® Delineation Nonwoven Geotextiles,' which are not the Orange Woven Fabrics that are the subject of the Application."

- Allegation 34: "Applicant sells woven geosynthetic fabric that is black in color (with no contrasting interwoven threads)."
    - Applicant's Answer: "Applicant admits that it sells 'geosynthetic fabric[s] that [are] black in color (with no contrasting interwoven threads)'. The remaining allegations of Paragraph 34 are denied."
- Allegation 40: "Applicant's trademark application makes claim to the entire orange spectrum, as its description of the mark provides that '[t]he color(s) orange is/are claimed as a feature of the mark.' *See* the '945 Application."
    - Applicant's Answer: "The allegations of Paragraph 40 are admitted."
- Allegation 41: "Applicant fails to specify a particular pantone number or to otherwise restrict its application to a particular shade of orange. As a result, Applicant's proposed mark spans the entire spectrum of the color orange."
    - Applicant's Answer: "Applicant avers that specifying a particular pantone number or otherwise restricting its Application to a particular shade or orange is not a

requirement under U.S. trademark law. The allegations of Paragraph 41 are admitted." Showing Applicant admits its trademark application makes claim to the entire orange spectrum.

- Allegation 11: "The color orange contrasts visibly with dark soils."
    - Applicant's Answer: "The allegations of Paragraph 11 are irrelevant and are neither admitted nor denied."

Applicant's Answer to Allegation 11 does not admit or deny. According to Fed. R. Civ. P. 8(b), and TBMP § 311.02(a), "[a]n allegation … is admitted if a responsive pleading is required and the allegation is not denied." Therefore, since Applicant did not deny this allegation, its answer is legally constructed as an admission that "[t]he color orange contrasts visibly with dark soils."

As set forth in detail below, Applicant has admitted that its alleged orange mark is functional. Thus, Opposer respectfully submits that it is entitled to an order of Judgment on the Pleadings as to functionality.

Finally, despite Applicant's attempt to distinguish between woven and nonwoven materials, Applicant's functional use is demonstrated through its admissions that on its nonwoven products the color orange is "high[ly]-visib[le]," a "visual barrier," a "visual excavation barrier," and a "visual dig barrier" as both products are strikingly similar.

3. <u>The Board should take judicial notice of the inherent functionality of the color orange in construction</u>

Courts may take judicial notice of documents outside of the pleadings that are capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. Fed. R. Evid. 201(d); *Miles, Inc. v. Scripps Clinic and Research Foundation*, 951 F.2d 361, *1 (9th Cir. 1991) (where the court took notice of four documents, including an

article); *Oran v. Stafford*, 226 F.3d 275, 289 (3rd Cir. 2000) (where the Court took notice of SEC filings). A motion for judgment on the pleadings can be "supplemented by any facts of which the Board may take judicial notice." J. Moore, *et al.*, Moore's Federal Practice – Civil § 12.15; *Media Online Inc. v. El Clasificado, Inc.*, 88 USPQ2d 1285, *5 (TTAB 2008).

The Board can and should take judicial notice of inherent functionality of the color orange in the construction field. This can be seen through "safety orange" (also known as "blaze orange," "vivid orange," "OSHA orange," "hunter orange," and "Caltrans (California Department of Transportation) orange.") which is used to visually set objects apart from their surroundings. See Olga A. Zielinska et al., *A Perceptual analysis of Standard Safety, Fluorescent, and Neon Colors*, Proceedings of the Human Factors and Ergonomic Society annual Meeting, September 2014 vol. 58 no. 1 page 1879-1883 (Exhibit A) (where fluorescent orange was identified as having the highest perceived hazard rating); 15 C.F.R. § 272.3 ("blaze orange" required on the tips of barrels of replica guns); and http://www.pantone.com/munsell-ansi-safety-orange.

Paragraph 5 of Applicant's Answer admits that "[t]he color orange is commonly used for traffic cones and hunting vests," and Paragraph 7 of the Answer admits that "orange geotextile safety fencing is used on construction sites." Furthermore, Applicant's own website contains several webpages and information sheets attesting to the visibility (functionality) of Applicant's orange nonwoven fabric, which demonstrates the orange color's functionality in this industry. These may be accessed at:

- http://www.tencate.com/amer/geosynthetics/products/geotextiles/TenCate-Mirafi-Delineation/default.aspx;
- http://www.tencate.com/amer/Images/pds_NLOorange0108_tcm29-30507.pdf;

- http://www.tencate.com/amer/Images/N%20%26%20N%202010%20Orange%20Delineation%20Nonwovens_tcm29-32350.pdf;
- http://www.tencate.com/amer/Images/cs.chicago.0609_tcm29-31220.pdf; and
- http://www.tencate.com/amer/Images/cs.detroit0410_tcm29-31223.pdf.

On each of these webpages, Applicant refers to the color orange as "high-visibility," a "visual barrier," a "visual excavation barrier," and a "visual dig barrier." **All of these are admissions of functionality**. Specifically looking at the information sheet for the Mirafi® Orange Delineation Nonwoven Geotextile, Applicant states the purpose of the color orange is to act as a "Utility Alert" as they are "a visual dig barrier designed to be place above underground utilities." http://www.tencate.com/amer/Images/pds_NLOorange0108_tcm29-30507.pdf. Again, this is an admission of functionality. Finally, looking specifically at both of the Case Studies, Applicant states that the orange "visual barrier was required *to provide a warning* to future development that these were not undisturbed soils" and "that there were contaminated soils below." http://www.tencate.com/amer/Images/cs.detroit0410_tcm29-31223.pdf (Page 2) and http://www.tencate.com/amer/Images/cs.chicago.0609_tcm29-31220.pdf (Page 1) (Emphasis added).

4. Applicant's mark is functional.

The Federal Circuit has followed the Board's established de jure functionality analysis for color marks, requiring an inquiry into whether the color "should be available for use by all manufacturers of these products because they need to use it to compete effectively." *Brunswick Corp. v. British Seagull Ltd.*, 35 F.3d 1527, 1533 (Fed. Cir. 1994) (citing *British Seagull Ltd v. Brunswick Corp.*, 28 USPQ2d 1197, 1199 (1993)). A functional feature is one, the "exclusive use of [which] would put competitors at a significant non-reputation-related disadvantage." *Qualitex Co. v. Jacobson Products Co., Inc.*, 514 U.S. 159, 165 (1995). Applicant is attempting

to register a mark that is de jure functional as there is a competitive need for the color orange in the industry.

STANDARD OF REVIEW

Pursuant to Fed. R. Civ. P. 12(c), "[a]fter the pleadings are closed—but early enough not to delay trial—a party may move for judgment on the pleadings." The standard of review for a Rule 12(c) motion for judgment on the pleadings is the same as the standard for a motion to dismiss. *Ward v. Utah*, 321 F.3d 1263, 1266 (10th Cir. 2003); *see also Cappetta v. GC Services Ltd. P'ship*, 654 F. Supp. 2d 453, 456 (E.D. Va. 2009) (citing *Burbach Broad. Co. v. Elkins Radio Corp.*, 278 F.3d 401, 405-06 (4th Cir. 2002); *Edwards v. City of Goldsboro*, 178 F.3d 231, 243 (4th Cir. 1999)). Accordingly, the facts as alleged by Nicolon in its Answer should be taken as true for purposes of this motion. *Erickson v. Pardus*, 127 S.Ct. 2197, 2200 (2007) (citing *Bell Atlantic Corp. v. Twombly*, 127 S.Ct. 1995, 1965 (2007) (when ruling on a defendant' motion to dismiss, judge must accept as true all of the factual allegations contained in the complaint). The Board may grant a motion for judgment on the pleadings when no genuine issues of material fact remain and the case can be decided as a matter of law. *Id*.

In considering a motion for judgment on the pleadings, all reasonable inferences are drawn in the non-moving party's favor. *See e.g. Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1323 (Fed. Cir. 2002). However, "[a]lthough a moving party, for purposes of the Rule 12(c) motion, concedes the accuracy of the factual allegations in his adversary's pleading, he does not admit other assertions in the other party's pleading that constitutes conclusions of law, legally impossible facts, or matters that would not be admissible in evidence at trial." Wright & Miller, 5C Federal Practice and Procedure: Civil 2d § 1368 (2d ed. 1995) (citing, *inter alia*,

Grindstaff v. Green, 133 F.3d 416 (6th Cir. 1998); *Duhame v. U.S.*, 119 F.Supp. 192 (Ct. Cl. 1954)).

A dismissal pursuant to Rule 12(c) is *with prejudice*. *LaRue v. DeWolff, Boberg & Associates, Inc.*, 450 F.3d 570 (4th Cir. 2006): *U.S. ex rel Bledsoe v. Community Health Systems, Inc.*, 501 F.3d 493 (6th Cir. 2007); *Jung v. Association of American Medical Colleges*, 184 Fed.Appx. 9 (D.C. Cir. 2006); *Bull v. U.S.*, 63 Fed.Cl. 580 (Fed.Cl. 2005); J. Moore, *et al.*, 11-56 Moore's Federal Practice – Civil § 56.30 (Rule 12(c) motions for judgment on the pleadings result in final adjudication of a case or claim).

ARGUMENT

In accordance with 15 U.S.C. § 1052(e), "no trademark by which the goods of applicant may be distinguished from the goods of others shall be refused registration on the principal register on the account of its nature **unless** it [c]onsists of a mark … comprises any matter that, as a whole, is **functional**." (Emphasis added). Pursuant to TMEP § 1202.05, "color marks are never inherently distinctive, and cannot be registered on the Principal Register without a showing of acquired distinctiveness under § 2(f) of the Trademark Act." Applicant has failed to make this required showing.

In Paragraphs 40 and 41 of its Answer, Applicant admits its trademark application makes claim to the entire orange spectrum. Applicant even admits in Paragraph 7 of its Answer that "orange geotextile safety fencing is used on construction sites."

Geosynthetics and geotextiles, both woven and nonwoven, are used above and below ground – the use of the color orange is functional for all purposes in this market.

The Application's statement of goods and services does not differentiate between above ground and below ground use. Its statement of the goods is **not** limited to above or below

ground, and therefore encompasses both. Applicant's products are at some point during their "life" above ground – as clearly seen by its own evidence of its 2(f) distinctiveness claim: a photograph of the product above ground ("Exhibit B"). By its own admissions: (1) the color orange contrasts visibly with dark soils; (2) orange used on geosynthetics and geotextiles is "high[ly]-visib[le]," a "visual barrier," a "visual excavation barrier," and a "visual dig barrier"; and (3) the visibility of the orange fabric is essential to the use or purpose of its geosynthetics and geotextiles products. As such, it is functional.

Qualitex holds a feature is functional if the "exclusive use of [which] would put competitors at a significant non-reputation-related disadvantage." 514 U.S. at 165. Applicant has admitted in Paragraph 5 of the Answer that "the color orange is used for traffic cones and hunting vests," in Paragraph 7 of the Answer that "orange geotextile safety fencing is used on construction sites," and in accordance with Fed. R. Civ. P 8(b) has admitted in Paragraph 11 of the Answer that "[t]he color orange contrasts visibly with dark soils."

Just like the applicant in *Brunswick*, the Applicant here attempts to register "a color which should be available for use by all [competitors] of these products because they need to use it to compete effectively." 35 F.3d at 1533. Applicant's admissions combined with the *Qualitex* inquiry that other competitors in this industry (e.g. Dandy, Willacoochee, and Opposer) have and are using the color orange to function as a warning, show the color orange is functional in this market. Applicant's competitors would be put at a "significant non-reputation-related disadvantage" if they were not allowed to use the color orange on geosynthetics and geotextiles. *Qualitex*, 514 U.S. at 165. Further, this would enact significant harm to all of the competitors in the entire market of geosynthetics and geotextiles. Thus Applicant's use is functional.

According to TMEP § 1212, in order to establish secondary meaning, "it must be shown that the *primary* significance of the term in the minds of the **consuming public** is not the product but the producer." (Emphasis added). Orange, such as "safety orange," has long been used in the construction industry as a visual cue (long before 2010). As orange is commonly used in the construction industry, Applicant's use of the orange color functions as a visual warning, despite its self-serving statement about its intent. The use of orange on geosynthetics and geotextiles for safety or as a warning is ubiquitous. All are used as visual cues. Applicant's distinction between woven and nonwoven is irrelevant – see Exhibit C showing a comparison of its specimen provided to the Trademark Office; with a photo of the product Mirafi® Orange Delineation which Applicant has admitted is "highly visible" and "serves as a warning to construction workers." While Applicant is attempting to differentiate between woven and nonwoven products in these oppositions, for all practical purposes, woven and nonwoven products look strikingly similar.[1] An individual encountering an orange geosynthetic or geotextile would not ask themselves "Is this woven or nonwoven?" and come to the conclusion that only if it was nonwoven would it be a visual cue. Instead, the individual would be alerted to stop digging once they encountered an orange product. The inquiry is not into what Nicolon says about how it intends the color orange to be used, but instead into how the **consuming public** views the color. Here, orange serves as a visual cue that alerts an individual of its presence. The color orange is functional. Indeed, Nicolon seeks to secure for itself alone the right to use orange on these goods. Such must not be permitted.

By its own admissions, Nicolon's use of the color orange in connection with the goods named in its Application is functional. Orange is a known visual cue to the consuming public.

[1] If the Board was given a copy of the two photographs in Exhibit B without the labels, we suspect the Board would have a difficult time differentiating the two products in determining which product is woven (incorporating the alleged trademark) and which is nonwoven.

Thus orange cannot function as a trademark for these goods and is not entitled to protection. Accordingly, Opposer respectfully requests that the Board enter judgment on the pleadings and reject Applicant's Application with *prejudice*.

CONCLUSION

For the reasons set forth more fully above, Opposer respectfully requests this Board grant Opposer Lumite's Motion for Judgment on the Pleadings pursuant to Fed. R. Civ. Proc. 12(c), and reject Applicant's Application with prejudice.

Respectfully submitted this 3rd day of June, 2015.

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EXHIBIT A

A Perceptual Analysis of Standard Safety, Fluorescent, and Neon Colors

Olga A. Zielinska, Michael S. Wogalter, and Christopher B. Mayhorn
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Twenty-six standard safety colors specified by the American National Standards Institute (ANSI), International Standards Organization (ISO), and the Federal Highway Association (FHWA) were compared to seven fluorescent and neon colors on perceived hazard and perceived importance. Results indicated that the fluorescent orange, ANSI red, fluorescent yellow, FHWA red, fluorescent yellow green, and ISO red were the highest rated colors on perceived hazard. ANSI red, FHWA red, ISO red, fluorescent orange, fluorescent yellow, and fluorescent yellow green were rated the highest on perceived importance. The implications of these findings and the potential use of fluorescent colors in product warnings are discussed.

INTRODUCTION

Color is frequently used to alert, aid comprehension, and increase the visibility of warnings (Wogalter & Vigilante, 2006). Using various participant groups, researchers have found that the color red consistently rated as the highest perceived hazard compared with other colors using various participant groups (Griffith & Leonard, 1997; Wogalter et al, 1998; Dunalp, Granda, & Kustas, 1986; Borade, Bansod, & Gandhewar, 2008; Smith-Jackson & Wogalter, 2000). Yellow, orange, and black are rated the next highest on perceived hazard (Smith-Jackson & Wogalter, 2000; Wogalter et al., 1998).

Fluorescent colors are starting to be used in environmental sign warnings. Fluorescent colors interact with ultraviolet (UV) light making them appear brighter, and thus more conspicuous, than non-fluorescents (Burns & Pavelka, 1995). However, little is known about their hazard connotation, or perceived hazard.

Only one study has compared the hazard connoted by standard safety colors to fluorescent colors. Tomkinson and Stammers (2000) investigated the perceived hazard of fluorescent colors and how they compared to non-fluorescent colors. Undergraduates rated fluorescent red the highest in connoted hazard followed by fluorescent orange, fluorescent yellow, and orange, which were equal in ratings, and then by red, fluorescent green, yellow, and green. Similar results were found using office workers except for them orange ranked below red.

Additionally ratings of perceived urgency produced similar results as perceived hazard. This study, however, did not fully specify the characteristics of the colors used. Without measured qualities of the stimuli it is difficult to compare findings or make specific recommendations for use.

More recently, Scheiber, Willan, and Schlorholtz (2006) compared fluorescent yellow-green to standard color on measures of attention capture and maintenance (Wogalter & Vigilante, 2006). They found that fluorescent yellow-green sign captured participants' first glances and had the longest total glance time compared to the traditional non-fluorescent colors of red, green, yellow, and orange. This study, however, used only one fluorescent color (yellow-green) and evaluated attention-related measures, but not hazard connotation.

The Scheiber et al. (2006) study suggests, fluorescent colors may aid in attention, probably because they are brighter than other colors in the surrounding context. Another potential benefit of fluorescent colors is that objects in fluorescent colors may be perceived as having greater importance than objects in standard colors. If so, then this attribute could be useful in drawing and maintaining attention to warning signs and labels. No research to date has evaluated perceived importance of standard safety or alternative (e.g., fluorescent) colors (see a review in Wogalter, Mayhorn & Zielinska, 2015). Potentially, some colors may be evaluated as high in importance but low in hazard, or vice versa.

The present study evaluated perceived hazard and perceived importance for standard (non-fluorescent) and fluorescent colors.

METHOD

Colors

A total of 33 colors were used. Colors were chosen from those promulgated by the American National Standard Institute (ANSI Z535.1), International Organization for Standardization (ISO 3864-4), United States Department of Transportation Federal Highway Administration (FHWA), Pantone neon colors, and 3M Company.

ANSI Z535.1 (2012) defines a set of safety colors for use in warning signs, labels, and tags. Munsell Color (Grand Rapids, Michigan) produces 22 x 28 cm (8.5 x 11 inch) sheets of the ANSI safety colors. The colors safety red, safety orange, safety yellow, safety green, safety blue, safety purple, safety brown, safety gray, safety black, and safety white were used.

The safety colors in ISO 3864-4 (Graphical Symbols – Safety Colours and Safety Signs (2011) standard lists RAL, Munsell, BS 5252, and NCS color equivalents for its safety colors. RAL, Munsell, BS 5252, and NCS are referenced to accurately print the colors. While the safety colors can be printed using any of these "equivalent" methods, in this study RAL color sheets were used: RAL 3001, RAL 1003, RAL 6032, RAL 5005, RAL 9003, RAL 9004 for red, yellow,

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green, blue, white, and black, respectively. Although it is not listed in the ISO standard, RAL 2010 (signal orange), was also included in the set tested.

The Federal Highway Administration (FHWA) lists color specifications on their *Manual on Uniform Traffic Control Devices* webpage (2013). FHWA provides Pantone® (Pantone LLC, Carlstadt, NJ) specifications for printing colors to accurately produce colors used in sign-sheeting and pavement-marking materials. The FHWA colors were printed by a Pantone certified printer in the North Carolina State University (NCSU) Design School. FHWA color names and Pantone shades used were: red (187), orange (152), yellow (116), green (342), blue (294), pink (198), purple (259), yellow-green (382), and brown (469). Color matches were confirmed with official Pantone Formula Guide obtained from the NCSU Design Library.

Pantone LLC previously produced a set of fluorescent colors identified within the Fluorescents and Metallic category. In 2010, Pantone released the Pantone Plus Collection transferring and renaming the previously identified fluorescent colors into the Neons and Pastels Collection. For the purpose of this study, the Pantone colors will be referred to as neon colors. The color names and shades of the Neons and Pastels Collection tested were green (802), blue (801), purple (814), and yellow green (809). These were printed by a Pantone Certified printer in the NCSU Design School. Color accuracy was confirmed using a Pantone Formula Guide.

Finally, the 3M Company (St. Paul, Minnesota) provided 10 x 15 cm (4 x 6 inch) samples of colors for use in this study. The 3M colors used were: fluorescent orange, fluorescent yellow and fluorescent yellow-green.

For each of the 33 colors that were used two 10 x 15 cm (4 x 6 inch) cards were produced (66 total). One set of colors was placed on white cardstock, and a second set of colors was placed on black cardstock. The black and white cardstock were used as neutral backgrounds for the colors to control for any biasing effect of color contrast. The cardstocks were cut to 12 x 17 cm (4.5 x 6.5 inch), providing a 1 cm (0.25 inch) overall border for each color. Cardstock was used so that all colors had the same firmness and consistency when handled and viewed by the participants. Participants were either shown all the colors with a black border or all the colors with a white border. For tracking purposes, each color was labeled with a letter and number.

Procedure

Eighty-nine participants were recruited from the NCSU participant pool operated by the psychology department. The participants consisted of 49 females and 40 males with a mean age = 19.4, *SD* = 1.75). For their participation, students were awarded research credit in their undergraduate psychology courses.

Participants were escorted into a quiet closed office that had fluorescent ambient lighting. Specifically, the 356 cm x 356 cm room had two Philips Day-Brite Fluorescent Parabolic Troffer Lights, with three Philips 32-Watt 700 Series Alto Fluorescent Tubes in each light. A Sekonic L-358 flash meter indicated that this lighting approximated 320 lux of light. The survey collection software, Qualtrics (Version 12.018, Provo, Utah), was used to record participants' responses. Initially, participants completed an informed consent form, followed by answering a set of demographic questions asking age, sex, education level, marital status, occupational status, race, and primary language. After these questions, the participants' color vision were evaluated using the Ishihara test for color

Table 1

*Colors used in the study for each standard, along with their color system, color system name, and color system reference number. Note: * indicates no color name.*

	ANSI (Munsell)	ISO (RAL)	FHWA (Pantone)*	Neon (Pantone)*	3M
Red	Safety Red 7.5R 4/14	Signal Red 3001	187	--	--
Orange	Safety Orange 5YR 6/15	Signal Orange 2010	152	--	Fluorescent Orange 4084
Yellow	Safety Yellow 5Y 8/12	Signal Yellow 1003	116	--	Fluorescent Yellow 4081
Green	Safety Green 7.5G 4/9	Signal Green 6032	342	802	--
Blue	Safety Blue 2.5PB 3.5/10	Signal Blue 5005	294	801	--
Pink	--	--	198	--	--
Purple	Safety Purple 10P 4.5/10	--	259	814	--
Yellow Green	--	--	382	809	Fluorescent Yellow Green 4083
Brown	Safety Brown 5YR 2.75/5	--	469	--	--
Gray	Safety Gray N 5/	--	--	--	--
Black	Safety Black N 1.5/	Signal Black 9004	--	--	--
White	Safety White N 9/	Signal White 9003	--	--	--

blindness. No participants were excluded due to color blindness.

For the color ratings, participants indicated the level of perceived hazard and perceived importance. Perceived hazard was defined as "being risky or dangerous." Ratings were made on a scale from 1 to 10. Anchors were given at the endpoints where 1 was labeled as "not at all hazardous" and 10 was labeled as "extremely hazardous." The other measure, perceived importance, was defined as having "great significance or value." Ratings were made on a scale with anchors at 1 and 10 with 1 indicating that the color was "not at all important" and 10 indicating that the color was "extremely important."

Participants either rated all the colors on perceived hazard and then on perceived importance or rated all the colors on perceived importance and then perceived hazard. The presentation of the colors within each rated dimension was randomized for each participant. In the rating task, the participant was handed color cards one at a time by a research assistant for examination and rating.

Following the ratings, students were asked to do a set of rank orderings of the colors. These data and associated analyses are not reported here. Once completing this procedure, they were debriefed and thanked for their participation.

RESULTS

The results section is divided into two main sections (perceived hazard and perceived importance). In each section, an analysis of variance (ANOVA) was conducted to compare the mean ratings of the colors contained in each color system. A second ANOVA analysis compared the mean ratings of each color system by color, creating a total of four subsections (perceived hazard rating by color system, perceived hazard rating by color name, perceived importance rating by color system, and perceived importance rating by color name). Table 2 contains the means and standard deviations for perceived hazard and perceived importance for each color.

Perceived Hazard

Perceived Hazard by Color System. An ANOVA analysis was conducted for each color system by color. Tukey's Honestly Significant Difference (HSD) test was used to further analyze significant effects ($p < .05$). For the ANSI set, there was a significant effect of color on hazard ratings, $F(9, 880) = 66.51$, $MSe = 5.02$, $p < .001$. Red was rated significantly higher than all of the other colors. Orange and yellow were rated the next highest with no significant difference between them, and both were significantly higher than the remaining colors. Black was the next highest and was significantly different than the remaining colors. Purple, brown, green, blue, gray, and white were the lowest rated with no significant difference among them.

The ISO color set showed a significant effect of perceived hazard, $F(6, 616) = 54.52$, $MSe = 5.70$, $p < .001$. Tukey's HSD indicated that red was rated significantly higher than all of the other colors. Orange and yellow were next highest and there was no significant difference between them but both were significantly higher than the remaining colors. Black was next highest and was significantly higher than the remaining colors. Blue, green, and white were rated the lowest and did not differ.

The FHWA set showed a significant effect of color on perceived hazard, $F(8, 792) = 49.12$, $MSe = 5.17$, $p < .001$. Red was rated the highest and was significantly higher than the other colors. Orange and yellow were rated the next highest on perceived hazard and did not differ. Orange was significantly higher than the other lower-rated colors. Yellow did not significantly differ from yellow-green. Yellow-green was higher than the remaining colors, except for pink. Pink was not significantly different from purple, but was rated significantly higher than the remaining colors. Purple was not significantly different from blue, brown, and green, which were rated the lowest colors, which among them yielded no significant difference.

For the Pantone neon color set, there was a significant effect of color on perceived hazard, $F(3,352) = 35.29$, $MSe =$

Table 2

Mean perceived hazard and importance ratings of each color by color system (standard deviation in the parentheses)

	Mean Perceived Hazard						Mean Perceived Importance				
	ANSI *M (SD)*	**ISO** *M (SD)*	**FHWA** *M (SD)*	**Neon** *M (SD)*	**3M** *M (SD)*		**ANSI** *M (SD)*	**ISO** *M (SD)*	**FHWA** *M (SD)*	**Neon** *M (SD)*	**3M** *M (SD)*
Red	7.5 (2.7)	7.0 (2.9)	7.3 (2.7)	—	—	Red	8.3 (1.9)	7.7 (2.2)	7.8 (2.1)	—	—
Orange	6.1 (2.5)	5.7 (2.5)	6.0 (2.4)	—	7.9 (2.4)	Orange	6.0 (2.2)	5.5 (2.4)	6.1 (2.3)	—	7.6 (2.4)
Yellow	5.7 (2.3)	5.3 (2.3)	5.4 (2.3)	—	7.3 (2.3)	Yellow	6.3 (2.2)	6.0 (2.5)	6.5 (2.2)	—	7.3 (2.4)
Green	2.5 (1.6)	2.5 (1.7)	2.5 (1.7)	3.8 (2.5)	—	Green	5.8 (2.5)	5.9 (2.6)	5.8 (2.7)	4.8 (2.4)	—
Blue	2.4 (1.6)	2.4 (1.5)	2.7 (1.6)	2.5 (1.6)	—	Blue	4.8 (2.3)	5.0 (2.5)	4.7 (2.4)	4.3 (2.5)	—
Pink	—	—	4.0 (2.5)	-	—	Pink	—	—	4.0 (2.4)	—	—
Purple	2.7 (1.9)	—	3.2 (2.3)	3.1 (2.2)	—	Purple	3.5 (2.0)	—	3.5 (2.1)	3.5 (2.1)	—
Yellow-Green	—	—	4.4 (2.5)	5.7 (2.4)	7.1 (2.3)	Yellow-Green	—	—	4.2 (2.4)	5.3 (2.3)	7.1 (2.6)
Brown	2.5 (2.1)	—	2.6 (2.1)	—	—	Brown	3.6 (2.4)	—	3.5 (2.4)	—	—
Gray	2.3 (2.0)	—	—	—	—	Gray	3.7 (2.5)	—	—	—	—
Black	3.9 (3.2)	4.2 (3.2)	—	—	—	Black	5.8 (3.1)	5.8 (2.9)	—	—	—
White	2.1 (2.0)	2.3 (2.2)	—	—	—	White	5.1 (3.1)	4.9 (3.1)	—	—	—

4.80, $p < .001$. Yellow-green was the highest rated and it was significantly higher than the other three colors. Green was next and was significantly higher the other two colors, purple and blue, which did not differ.

Finally, the 3M color set did not show a significant effect, $F(2,264) = 2.57$, $MSe = 5.65$, $p = .078$. While there were no differences among the three colors, it should be noted, and as Table 2 indicates, that the 3M colors were among the highest rated in the study.

Perceived Hazard by Color Name. ANOVAs were also conducted across groups for color of the same hue (e.g., all colors named as a type of "red") on perceived hazard. The analysis of the three reds failed to show a significant effect, $F(2, 264) = .78$, $MSe = 7.65$, $p < .10$, but it should be noted that all of the reds were among the highest on perceived hazard in the study. The analysis of the four oranges was significant, $F(3, 352) = 14.81$, $MSe = 6.01$, $p < .001$. The 3M fluorescent orange was significantly higher than the other orange versions from ANSI, ISO, and FHWA, which did not differ. Yellow showed a significant effect of color systems, $F(3, 352) = 14.74$, $MSe = 5.34$, $p < .001$. The 3M fluorescent yellow was higher than the yellows of ANSI, ISO, and FHWA, which did not differ among themselves. Green showed a significant effect, $F(3,352) = 11.06$, $MSe = 3.64$, $p < .001$. Pantone neon green was significantly higher than the other greens from ANSI, ISO, and FHWA, which did not differ. Yellow-green showed a significant effect, $F(2, 264) = 28.89$, $MSe = 5.89$, $p < .001$. The 3M fluorescent yellow-green was rated higher than Pantone neon yellow-green, which in turn was significantly higher than FHWA yellow-green. The remaining colors, blue, purple, brown, black, and white did not show any significant differences across color systems.

Perceived Importance

A similar set of analyses were conducted using the importance ratings.

Perceived Importance by Color System. The ratings of importance for colors were analyzed within each color system. For the ANSI set, the ANOVA was significant, $F(9, 880) = 32.19$, $MSe = 6.10$, $p<.001$. Red was rated significantly higher than all of the other colors on perceived importance. Yellow was rated next highest and significantly different from the remaining colors, with the exception of orange, black, and green. Orange was significantly different than the remaining colors, but was not significantly higher than black, green, and white. Black, green, and white were rated significantly more important than the remaining colors, with the exception of blue. Blue and gray were rated the next highest on perceived importance. Blue was significantly higher than brown and purple, which were the lowest rated on perceived importance. There was no significant difference among gray, brown, and purple.

The ISO set of colors showed a significant effect of perceived importance, $F(6, 616) = 11.49$, $MSe = 6.81$, $p < .001$. Red was rated significantly higher than all of the other colors. There were no significant differences among the other ISO colors.

The FHWA color set showed a significant effect, $F(8,792) = 36.04$, $MSe = 5.49$, $p < .001$. Red was rated significantly higher than the remaining colors. Yellow, orange and green were significantly different from the remaining colors, with the exception that green was not significantly different from blue. Blue, yellow-green, and pink did not differ. Blue was significantly higher in perceived importance ratings than purple and brown, which were the lowest. Yellow-green and pink did not differ from purple and brown.

The Pantone neon colors showed a significant effect, $F(3, 352) = 9.04$, $MSe = 5.46$, $p < .001$. Yellow-green and green were highest and did not differ. Both were rated higher than the remaining colors, except that green was not significantly different from blue. Blue and purple were not significantly different from one another.

The 3M fluorescent color set did not show a significant effect, $F(2, 264) = 1.27$, $MSe = 6.13$, $p > .10$, yet all three colors were among the highest rated.

Perceived Importance by Color Name. ANOVA analyses were also conducted for colors of the same name on rated importance. The three red colors did not show an effect, $F(2, 264) = 1.83$, $MSe = 4.24$, $p > .10$. The oranges produced a significant effect, $F(3, 352) = 14.23$, $MSe = 5.35$, $p < .001$. Fluorescent orange was rated significantly higher than the oranges of the ANSI, ISO, and FHWA systems, which did not differ among themselves. The yellows showed a significant effect, $F(3, 352) = 4.66$, $MSe = 5.54$, $p < .01$. Fluorescent yellow and FHWA yellow were the highest numerically and they did not significantly differ. Fluorescent yellow was significantly higher than ANSI and ISO yellows. There was no significant difference among the FHWA, ANSI, and ISO yellows. The greens produced a significant effect, $F(3, 352) = 3.91$, $MSe = 6.44$, $p < .01$. The ISO, FHWA, and ANSI greens were all rated significantly higher than Pantone neon green. There were no statistically significant differences among the ISO, FHWA, and ANSI versions. Yellow-green showed a significant effect, $F(2, 264) = 30.12$, $MSe = 5.99$, $p < .001$. The 3M fluorescent yellow-green was significantly higher than the Pantone neon yellow-green, which in turn was significantly higher than FHWA yellow-green. Finally, blue, purple, brown, black, and white did not show any significant differences among the color systems.

Top Rated Colors

The colors listed in Table 3 are the highest in perceived hazard and importance ratings. According to the preceding analyses there are no statistical differences among these colors and they are ordered from highest to lowest. Note the presence of fluorescent colors and the red colors in this table.

Table 3
Colors with the highest perceived hazard and perceived importance.

Perceived Hazard Rating	Perceived Importance Rating
Fluorescent Orange	ANSI Red
ANSI Red	FHWA Red
Fluorescent Yellow	ISO Red
FHWA Red	Fluorescent Orange
Fluorescent Yellow Green	Fluorescent Yellow
ISO Red	Fluorescent Yellow Green

DISCUSSION

From the summary in Table 3, it can be seen that the color red and fluorescent colors are judged to have high hazard connotation and high perceived importance. Red has been previously described in the literature as being the highest hazard connoting color (Smith-Jackson & Wogalter, 2000; Wogalter et al., 1998). This study confirms that traditional safety red has the highest perceived hazard compared to other traditional safety colors. The results also show that red is perceived to convey high importance compared to the other traditional safety colors. Additionally, the results show that the 3M fluorescent colors are perceived as being as high in hazard and importance as traditional safety red.

Yellow and orange were the second-highest tier of colors in perceived hazard, confirming previous studies involving traditional safety colors (Smith-Jackson & Wogalter, 2000; Wogalter et al., 1998). Interestingly, when yellow and orange were shown in a fluorescent version, they were higher in perceived hazard than the traditional safety color version. Tomkinson and Stammers (2000) found that fluorescent orange was rated higher than both fluorescent yellow and safety orange, which did not differ. The present study concurs with this, finding that fluorescent orange is perceived as connoting higher hazard than safety orange, and that fluorescent yellow is rated higher on perceived hazard than safety yellow; however, no difference was found in the perceived hazard ratings among the three fluorescent colors used in this study (fluorescent orange, fluorescent yellow, and fluorescent yellow-green).

A limitation of this study was exclusive use of undergraduates as participants. Future research ought to compare these results with those using other populations groups. It is an empirical question whether the findings generalize to other populations, some research suggests that they might. For example, Wogalter et al. (1998) found a similar pattern of color ratings by adult community volunteers and industrial workers in comparison to undergraduates. Likewise Tomkinson and Stammers (2000) found a similar pattern of color ratings as between office workers and students.

Another limitation of the study is that a fluorescent red was unavailable at the time the study was conducted and was not included in the set that was rated. The rendering of fluorescent red is apparently difficult and often looks pink and as a result, likely would not garner high hazard ratings. Although fluorescent red received the highest hazard and urgency ratings in Tomkinson and Stammers (2000), details of how they obtained or produced the color sample are not specified, and thus making it difficult to reproduce the color stimulus and replicate their findings. Further research on fluorescent red would be informative.

Fluorescent colors have been shown to be more conspicuous in environmental signs than standard safety colors (Burns & Pavelka, 1995; Schieber et al., 2006); however, that research concerned outdoor signs. The present research shows that fluorescent colors produce high hazard and importance ratings in an office/laboratory setting with artificial lighting. Future work could include examining the effect of fluorescent colors in other indoor contexts, and in particular as part of product warning labels in comparison to standard (non-fluorescent) colors.

ACKNOWLEDGMENTS

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EXHIBIT B

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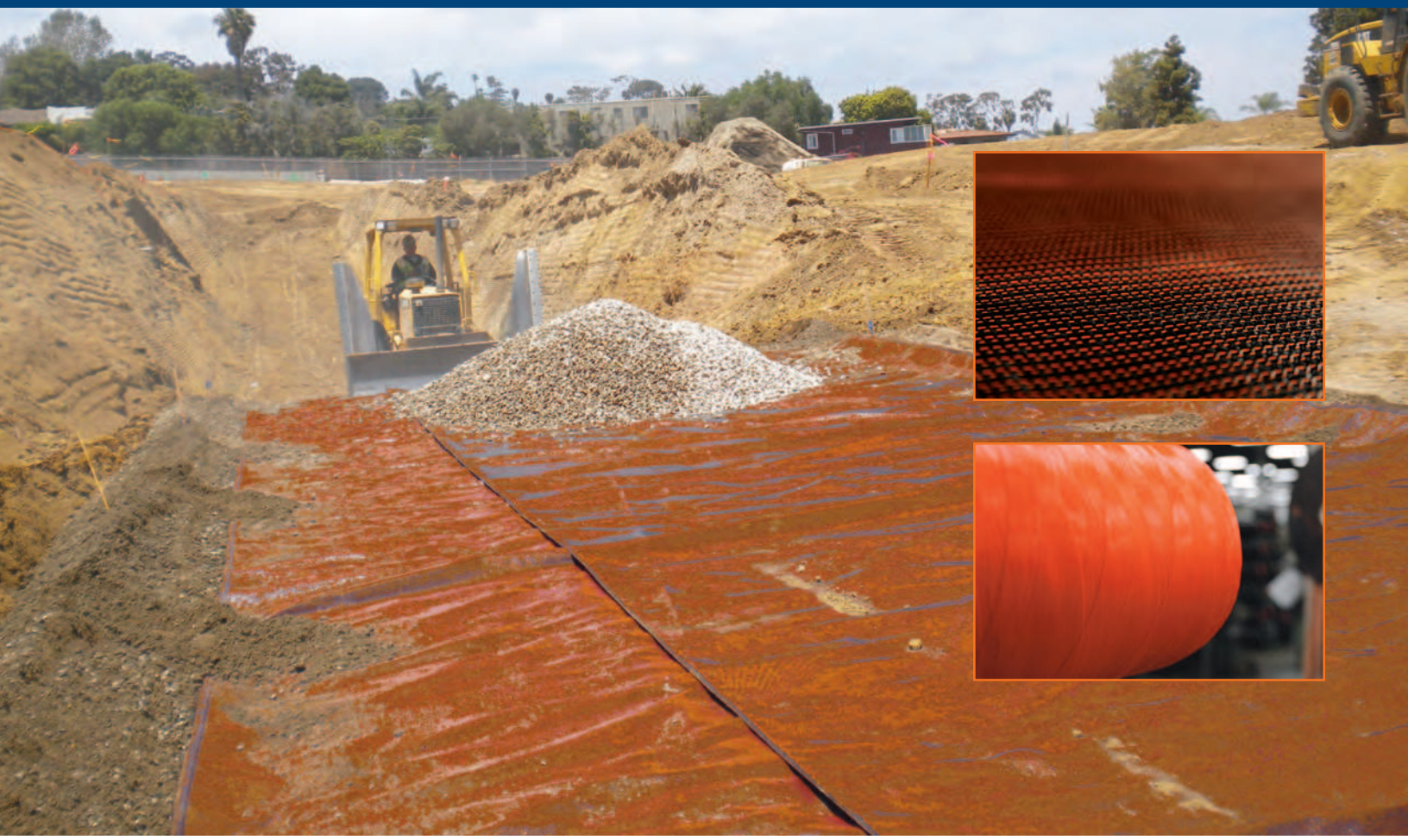

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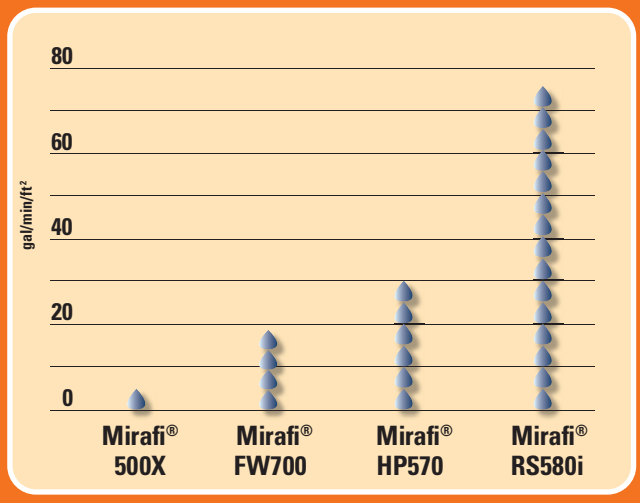

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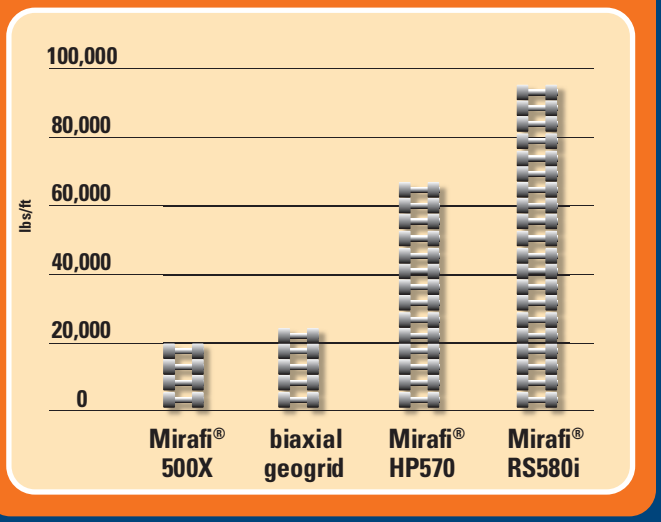

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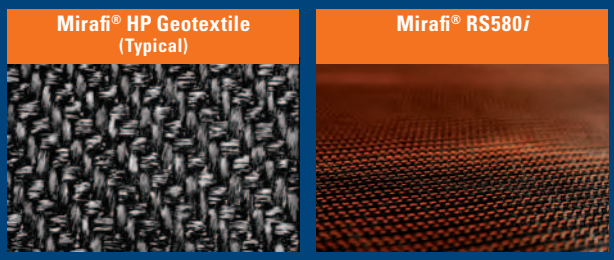

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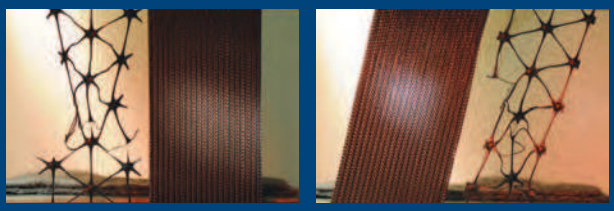

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EXHIBIT C

Woven

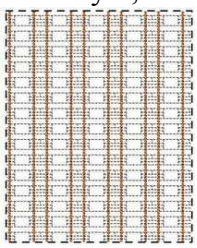
This is a true and correct specimen as filed with the original Application

Nonwoven

This is a true and correct copy of the Mirafi® Orange Delineation product found at http://www.tencate.com/amer/Images/pds_NLOorange0108_tcm29-30507.pdf

It smacks of bad faith that the Applicant is alleging orange as a trademark in the top photo, while admitting orange is functional in the bottom photo.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

LUMITE, INC.,	)	
	)	
Opposer,	)	Opposition No. 91222215
	)	Application Serial No. 86/057,945
v.	)	Filing Date: September 6, 2013
	)	Publication Date: February 3, 2015
NICOLON CORPORATION,	)	Mark: 
	)	
	)	
Applicant.	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Notice of Opposition has been served on Applicant by mailing the same via First Class Mail, postage prepaid, to Applicant's Attorney of Record/Correspondent for Nicolon Corporation as listed on the TDSR website of the United States Patent and Trademark Office:

Correspondent: Stacy R. Stewart
Address: Cantor Colburn, LLP
1180 Peachtree Street NE, Suite 2050
Atlanta, GA 30309-7525

A courtesy copy of the foregoing Notice of Opposition is also being emailed to the Correspondent at the following email address: sstewart@cantorcolburn.com.

This 12 day of August, 2015.

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