Certain Biaxial Integral Geogrid Products from China

Investigation Nos. 701-TA-554 and 731-TA-1309 (Final)

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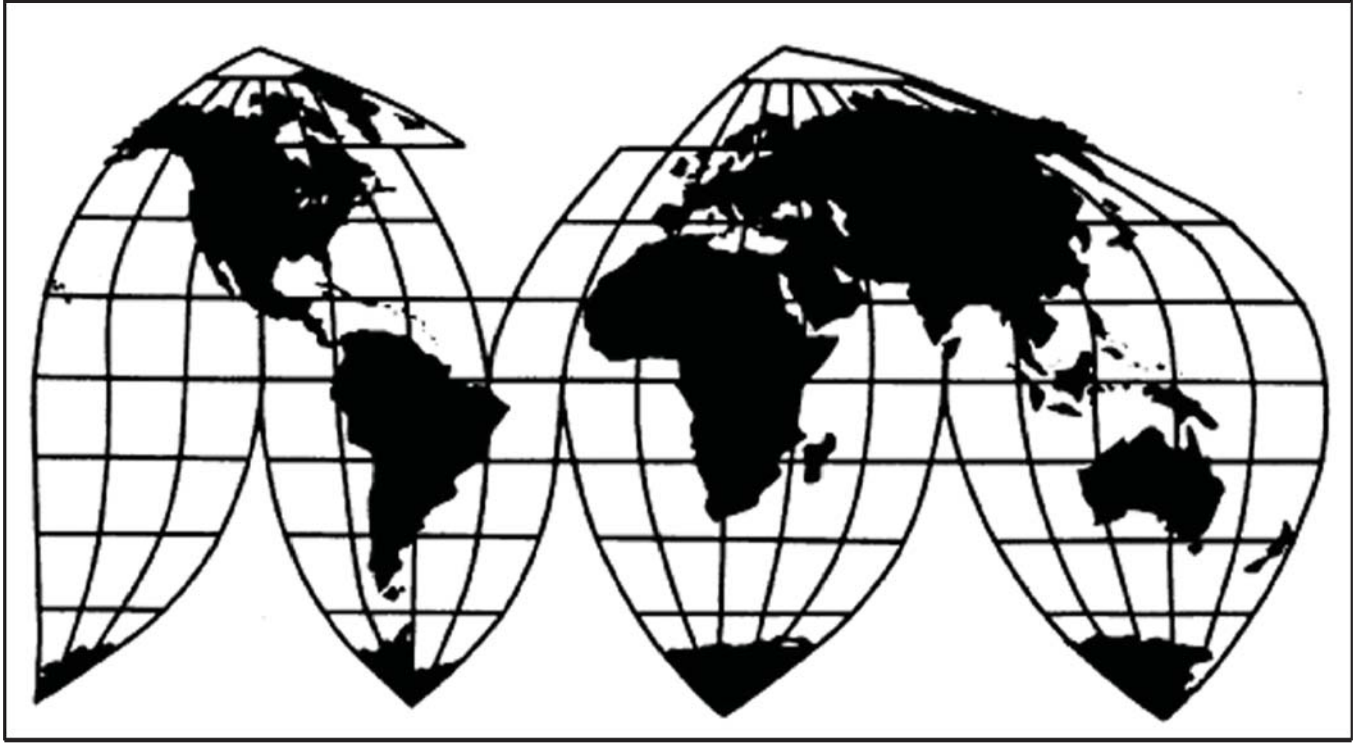
U.S. International Trade Commission



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Note.—Information that would reveal confidential operations of individual concerns may not be published and therefore has been deleted. Such deletions are indicated by asterisks.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-554 and 731-TA-1309 (Final)

Certain Biaxial Integral Geogrid Products from China

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that an industry in the United States is materially injured by reason of imports of certain biaxial integral geogrids from China, provided for in subheading 3926.90.99 of the Harmonized Tariff Schedule of the United States, that have been found by the Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV") and to be subsidized by the government of China.[2]

BACKGROUND

The Commission, pursuant to sections 705(b) and 735(b) of the Act (19 U.S.C. 1671d(b) and 19 U.S.C. 1673d(b)), instituted these investigations effective January 13, 2016, following receipt of a petition filed with the Commission and Commerce by Tensar Corporation, Morrow, Georgia. The final phase of the investigations was scheduled by the Commission following notification of a preliminary determinations by Commerce that imports of certain biaxial integral geogrids from China were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and dumped within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)).

Notice of the scheduling of the final phase of the Commission's investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on September 15, 2016 (81 FR 63495). The hearing was held in Washington, DC, on December 21, 2016, and all persons who requested the opportunity were permitted to appear in person or by counsel.

[1] The record is defined in sec. 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR 207.2(f)).

[2] The Commission also finds that imports subject to Commerce's affirmative critical circumstances determinations are not likely to undermine seriously the remedial effect of the countervailing and antidumping duty orders on certain biaxial integral geogrid products from China.

Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by imports of certain biaxial integral geogrid products from China found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV") and to be subsidized by the government of China. We also find that critical circumstances do not exist with respect to imports of certain biaxial integral geogrid products from China that are covered by Commerce's final affirmative critical circumstances determinations.

I. Background

Parties to the Investigation. Tensar Corporation ("Tensar"), a domestic producer of biaxial integral geogrid products ("biaxial geogrids"), filed the petition in these investigations on January 13, 2016.[1] Tensar appeared at the hearing and submitted prehearing and posthearing briefs.

Two respondent entities jointly participated in these investigations. These are Hanes Companies, Inc., a domestic distributor of geogrids and importer of biaxial geogrids from China, and Hill Country Site Supply, an operating division of the Hanes Companies and a distributor of subject merchandise (jointly, "Hanes"). Hanes appeared at the hearing and submitted prehearing and posthearing briefs.

Data Coverage. U.S. industry data are based on the questionnaire responses of two firms (Tensar and Tenax Corporation, Evergreen, Alabama ("Tenax")) that accounted for all domestic production of biaxial and triaxial geogrid products during 2015.[2] U.S. import data are based on questionnaire responses from 14 U.S. importers accounting for a large majority of the subject merchandise imported during the January 2013 -- September 2016 period of investigation ("POI").[3] Chinese industry data are based on the questionnaire responses of one producer (Tensar China) of subject merchandise.[4]

[1] Confidential Report ("CR") at I-1, Public Report ("PR") at I-1.

[2] CR/PR at Table III-1. Tenax is believed to account for a small portion of U.S. production of biaxial integral geogrid products. U.S. producer data used by the Commission largely reflect information that was furnished by Tensar because Tenax failed to provide complete trade, financial, or pricing data in its questionnaire response. CR at I-5 n.8, PR at I-4 n.8.

[3] CR at I-5 n.10, PR at I-4 n.10, and CR/PR at IV-1.

[4] CR at VII-4, PR at VII-3. Tensar China did not provide an estimate of its share of biaxial geogrid production in China for 2015. *Id*.

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the "domestic like product" and the "industry."[5] Section 771(4)(A) of the Tariff Act of 1930, as amended ("The Tariff Act"), defines the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[6] In turn, the Tariff Act defines "domestic like product as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[7]

The decision regarding the appropriate domestic like product in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case by case basis.[8] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[9] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[10] Although the Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized or sold at less than fair value,[11] the Commission determines what domestic product is like the imported articles Commerce has identified.[12]

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[5] 19 U.S.C. § 1677(4)(A).

[6] 19 U.S.C. § 1677(4)(A).

[7] 19 U.S.C. § 1677(10).

[8] *See, e.g*., *Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), aff'd, 938 F.2d 1278 (Fed. Cir. 1991) ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors, including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

[9] *See,* e*.g.*, S. Rep. No. 96-249 at 90-91 (1979).

[10] *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49; *see also* S. Rep. No. 96-249 at 90-91 (Congress has indicated that the like product standard should not be interpreted in "such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not 'like' each other, nor should the definition of 'like product' be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.").

[11] *See*, *e.g., USEC, Inc. v. United States*, 34 Fed. Appx. 725, 730 (Fed. Cir. 2002) ("The ITC may not modify the class or kind of imported merchandise examined by Commerce."); *Algoma Steel Corp. v.*

(Continued...)

B. Product Description

In its final determination, Commerce defined the imported merchandise within the scope of these investigations as follows:

> Biaxial integral geogrid products are a polymer grid or mesh material (whether or not finished, slit, cut-to-length, attached to woven or nonwoven fabric or sheet material, or packaged) in which four-sided openings in the form of squares, rectangles, rhomboids, diamonds, or other four-sided figures predominate. The products covered have integral strands that have been stretched to induce molecular orientation into the material (as evidenced by the strands being thinner toward the middle between the junctions than at the junctions themselves) constituting the sides of the openings and integral junctions where the strands intersect.
>
> The scope includes products in which four-sided figures predominate whether or not they also contain additional strands intersecting the four-sided figures and whether or not the inside corners of the four-sided figures are rounded off or not sharp angles. As used herein, the term "integral" refers to strands and junctions that are homogenous with each other. The products covered have a tensile strength of greater than 5 kilonewtons per meter ("kN/m") according to American Society for Testing and Materials ("ASTM") Standard Test Method D6637/D6637M in any direction and average overall flexural stiffness of more than 100,000 milligram-centimeter according to the ASTM D7748/D7748M Standard Test Method for Flexural Rigidity of Geogrids, Geotextiles and Related Products, or other equivalent test method standards.
>
> Subject merchandise includes material matching the above description that has been finished, packaged, or otherwise further processed in a third country, including by trimming, slitting, coating, cutting, punching holes, stretching, attaching to woven or non-woven fabric or sheet material, or any other finishing, packaging, or other further processing that would not otherwise remove the

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(…Continued)
United States, 688 F. Supp. 639, 644 (Ct. Int'l Trade 1988), *aff'd*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

[12] *Hosiden Corp. v. Advanced Display Mfrs.*, 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Torrington*, 747 F. Supp. at 748-52 (affirming the Commission's determination defining six like products in investigations in which Commerce found five classes or kinds).

merchandise from the scope of the investigations if performed in the country of manufacture of the biaxial integral geogrid.

The products subject to the scope are currently classified in the Harmonized Tariff Schedule of the United States ("HTSUS") under the following subheading: 3926.90.9995. Subject merchandise may also enter under subheadings 3920.20.0050 and 3925.90.0000. The HTSUS subheadings set forth above are provided for convenience and U.S. Customs purposes only. The written description of the scope is dispositive.[13]

A biaxial geogrid is a single, homogeneous piece of plastic that has been punched with holes and stretched ("oriented") until the holes attain the desired shape/size and the resulting material has the desired tensile strength. The term geogrid refers to materials used primarily in earth reinforcement and stabilization applications. Geogrids are part of a broader category known as geosynthetics, which consist of a number of synthetic products used to solve various civil engineering and earth construction challenges.[14]

Geogrids can be categorized as uniaxial geogrids, biaxial geogrids, and triaxial geogrids. In a biaxial geogrid, the grid has been produced in a manner that creates quadrangular openings or apertures within the grid. The strands or "ribs" have working strength in two directions – longitudinal and transverse. The term integral means that the geogrid is a monolithic structure in which the strands of the quadrangle are all a part of the same starting material. This is differentiated from other products, for example, which did not start from the same structure (are not integral), such as strands that are bonded together. The term biaxial integral geogrid may also be referred to as a "homogeneous," "integral," "oriented," or "punched and drawn" geogrid.[15]

Both biaxial geogrids and triaxial geogrids are biaxially stretched as part of the production process. Triaxial geogrids have webbing stretched so as to produce triangular shaped holes.[16] Because the scope of these investigations is limited to geogrids in "which four-sided openings in the form of squares, rectangles, rhomboids, diamonds, or other four-sided figures predominate," triaxial geogrids do not fall within the scope.[17]

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[13] *Countervailing Duty Investigation of Certain Biaxial Integral Geogrid Products from the People's Republic of China: Final Affirmative Determination and Final Determination of Critical Circumstances*, 82 Fed. Reg. 3282, 3284 (January 11, 2017), and accompanying *Issues and Decision Memorandum* at Appendix I ("*Commerce Final CVD Determination*"); and *Certain Biaxial Integral Geogrid Products from the People's Republic of China: Final Determination of Sales at Less Than Fair Value*, 82 Fed. Reg. 3284, 3286 (January 11, 2017), and accompanying *Issues and Decision Memorandum* at Appendix I ("*Commerce Final AD Determination*").

[14] CR at I-10, PR at I-8 to I-9.

[15] CR at I-10, PR at I-9.

[16] CR at I-10, PR at I-9.

[17] *See Commerce Final CVD Determination*, 82 Fed. Reg. at 3284, and accompanying *Issues and Decision Memorandum* at Appendix I; and *Commerce Final AD Determination*, 82 Fed. Reg. at 3286, and accompanying *Issues and Decision Memorandum* at Appendix I.

C. Arguments of the Parties

In the preliminary determinations, the Commission defined a single domestic like product, comprised of both biaxial geogrids within the scope of the investigation and triaxial geogrids.[18] Petitioner Tensar argues that the Commission should define one domestic like product comprised only of biaxial geogrids coextensive with the scope. It claims that triaxial geogrids have distinct physical characteristics, are not interchangeable, and operate differently than biaxial geogrids.[19] Accordingly, Tensar requests that the Commission not include triaxial geogrids in the domestic like product.[20]

Respondent Hanes argues that the Commission should find one domestic like product that includes both biaxial geogrids and triaxial geogrids, as it did in the preliminary determinations.[21] Hanes argues that biaxial and triaxial geogrid products have the same physical characteristics and uses, and are produced using common manufacturing facilities, employees and methods.[22] It also asserts that triaxial geogrids are interchangeable with biaxial geogrids, particularly at the project design stage, share common channels of distribution, and are perceived by customers as just another variety of biaxial geogrid.[23] Finally, Hanes asserts that price is not probative of whether triaxial geogrids are part of the domestic like product because prices for triaxial geogrids do not reflect any perceived differences with biaxial geogrids.[24]

D. Domestic Like Product Analysis

Physical Characteristics and Uses. Biaxial and triaxial geogrids start from the same raw materials, specifically polypropylene pellets, with a small amount of black masterbatch for coloring and UV light protection.[25] Tensar reports that different amounts of carbon black masterbatch are used to produce biaxial and triaxial geogrids.[26] The biaxial geogrid products described in the scope are oriented in two directions – longitudinal and transverse – and are thus composed of a series of quadrangular holes. Triaxial geogrids, on the other hand, have triangular shaped holes.[27]

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[18] *Certain Biaxial Integral Geogrid Products from China*, Inv. Nos. 701-TA-554 and 731-TA-1309 (Preliminary), USITC Pub. 4596 (March 2016) ("Preliminary Determination"), at 10.

[19] Tensar Prehearing Brief at 11-14, Posthearing Brief, Exhibit 1 at 10-11, and Final Comments at 4.

[20] Tensar Prehearing Brief at 12-36, Posthearing Brief, Exhibit 1, and Final Comments at 4.

[21] *Preliminary Determinations*, USITC Pub. 4596, at 10.

[22] Hanes Prehearing Brief at 7-12.

[23] Hanes Prehearing Brief at 14-18 and Exhibits 9, 10A-10D, and 16.

[24] Hanes Prehearing Brief at 21.

[25] CR at I-11, PR at I-9.

[26] Tensar Prehearing Brief at 29; CR at I-19 to I-20, PR at I-14.

[27] CR at I-10, PR at I-9.

Triaxial geogrids have a higher degree of radial stiffness throughout the full 360 degrees of the geogrid plane, are thicker, and have a different profile than biaxial geogrids.28 The meeting points of the triangular shaped holes in triaxial geogrid are said to be stronger and stiffer than that of biaxial geogrids.29 Tensar argues that these differences in physical characteristics result in triaxial geogrids having different physical and mechanical properties than biaxial geogrids.30 It asserts that these properties make triaxial geogrid appropriate for certain projects which are unable to accommodate biaxial geogrid, such as pavement optimization.[31]

Geogrids, whether biaxial or triaxial, are used primarily in road construction.[32] Both biaxial and triaxial geogrids are integral plastic grids that provide soil reinforcement, primarily in road construction projects, but also in surface stabilization and reinforcement applications. The record indicates that biaxial geogrid is used in some applications, such as marine mattresses and certain wall systems, in which triaxial geogrids are not used.[33] Tensar stated that even when used in the same applications, biaxial and triaxial geogrids have different specifications and undergo different testing procedures.[34] Specifically, Tensar stated that the two products have enough differences that specifications and tests for biaxial geogrid do not apply to triaxial geogrid because its differing structure and material strength properties do not correlate with that of biaxial geogrid. Although Tensar states biaxial geogrids cannot be used for the same applications as triaxial geogrids because these products have different physical characteristics that are uniquely suited for specific uses, Hanes observes that Tensar's installation guide and proprietary design software treat triaxial geogrids and biaxial geogrids identically.[35] A majority of market participants considered biaxial and triaxial geogrids at least somewhat comparable in physical characteristics and uses.[36]

Manufacturing Facilities, Production Processes and Employees. Tensar produces ***.[37] Biaxial and triaxial geogrids both begin with sheets of polypropylene extruded from the same machine, but production of triaxial geogrids requires a thicker sheet of extruded polypropylene. Both types of polypropylene sheets then proceed to a machine ("puncher") which punches holes in the sheets. The same punchers are typically used for both biaxial and triaxial geogrids;

[28] CR at I-14, PR at I-11.

[29] CR at I-14, PR at I-11.

[30] Tensar Prehearing Brief at 12-14.

[31] Tensar Prehearing Brief at 16.

[32] CR at I-10 to I-11, PR at I-9.

[33] CR at I-10 to I-11, PR at I-9.

[34] Tensar Prehearing Brief at 12.

[35] Tensar Prehearing Brief at 22-23; Hanes Prehearing Brief at 14.

[36] CR/PR at Table I-3. All 10 reporting U.S. importers and 17 of 19 U.S. purchasers found biaxial and triaxial geogrids at least somewhat comparable in physical characteristics and uses. *Id*.

[37] Tensar Prehearing Brief at 29. Tenar itself has claimed that substitution of its biaxial geogrids with its triaxial geogrids can be done with complete confidence in the same applications. *See* Hanes Posthearing Brief, Exhibits 4 and 5.

punchers must be retooled before they can switch between the two types.[38] Both biaxial and triaxial geogrids are then stretched in an orienting machine that can generally accommodate both types.[39] Tensar states that substantial retooling and recalibration of machines used to produce biaxial geogrids would be required to produce triaxial geogrids, in addition to other equipment, such as bevelers and rollers, not used in the production of biaxial geogrids. It also states that its employees are cross-trained in the production of both products to cover staff shortages, although the company has separate employees devoted to producing triaxial geogrids and biaxial geogrids.[40]

Most market participants found biaxial and triaxial geogrids at least somewhat comparable regarding manufacturing facilities, production processes, and employees.[41]

Channels of Distribution. All geogrids, whether biaxial or triaxial, are sold primarily to distributors.[42] Distributors typically fall into two classes: geo supply companies and concrete accessory suppliers. Geo supply companies largely focus on site development while concrete accessory suppliers tend to be larger companies with a broader spectrum of products.[43] Tensar holds a U.S. patent on triaxial geogrid, which gives it the exclusive right to produce, sell, and distribute this product in the United States.[44] Tensar sells its branded biaxial geogrids and all triaxial geogrids through exclusive regional distributors in all regions of the United States. In addition to its branded biaxial geogrids, Tensar sells biaxial, but not triaxial geogrids, for resale under private label.[45] Tensar and its distributors reportedly provide different customer support services, such as design, technical guidance, and installation assistance on all projects, depending on the type of geogrid sold.[46]

A significant majority of market participants found biaxial geogrids and triaxial geogrids mostly comparable regarding channels of distribution.[47]

Interchangeability. The parties strongly dispute the degree of interchangeability between biaxial and triaxial geogrids. Tensar states that biaxial and triaxial geogrids cannot be substituted in a project without substantial design change and further assert that they cannot be substituted even at the design stage because of their substantial different physical

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[38] CR at I-20 to I-21, PR at I-14. Approximately *** percent of triaxial geogrids are punched on a different, albeit similar, puncher capable of punching the thickest extruded sheets. *Id*.

[39] CR at I-20 to I-21, PR at I-14.

[40] Tensar Prehearing Brief at 34.

[41] CR/PR at Table I-3. All seven reporting U.S. importers and 10 of 11 reporting U.S. purchasers found biaxial and triaxial geogrids at least somewhat comparable in manufacturing facilities, production processes, and employees. *Id.*

[42] CR at I-24, PR at I-15.

[43] CR at I-24, PR at I-15.

[44] CR at I-23, PR at I-15.

[45] CR at I-23 to I-24, PR at I-15. "Private label" refers to biaxial geogrid products that are sold to firms that distribute domestic or imported geogrids using their company's house brand name rather than the geogrid manufacturer's brand name. CR at V-6 n.7, PR at V-4 n.7.

[46] CR at I-24, PR at I-15.

[47] CR/PR at Table I-3. Eight of nine reporting U.S. importers and 9 of 17 reporting U.S. purchasers found biaxial and triaxial geogrids mostly comparable in channels of distribution. *Id.*

characteristics.[48] Hanes argues that biaxial and triaxial geogrids are interchangeable and that both products accomplish the same function in road and pavement applications.[49] Many states do not have specifications for the use of triaxial geogrids or they classify them in a separate category from biaxial geogrids; some states permit the use of both products.[50]

Market participants reported that biaxial and triaxial geogrids are generally considered to be interchangeable, but performance characteristics and properties within a particular project's specifications can limit the interchangeability between products.[51] A plurality of market participants found biaxial geogrids and triaxial geogrids fully or mostly comparable regarding interchangeability.[52]

Producer and Customer Perceptions. Tensar treats biaxial and triaxial geogrids as separate products in certain respects. Tensar's website lists uniaxial, biaxial, and triaxial geogrids as distinct product lines, and has separate web pages for each product.[53] Similarly, Tensar displays its biaxial and triaxial geogrid products separately in brochures and in other informational materials and technical guidelines.[54] On the other hand, Hanes argues that biaxial and triaxial geogrids are viewed as similar products in the market.[55] It also observes that Tensar's installation guide does not differentiate between biaxial and triaxial geogrids and Tensar's design software treats the two products as interchangeable.[56]

Information on the record regarding customer perceptions is mixed. One distributor stated that its customers do not recognize a difference between the two products and only purchase the higher-priced triaxial geogrid if a project engineer prohibits substitutions.[57] Other market participants perceive triaxial geogrids as a higher-priced biaxial geogrid with some improved performance characteristics.[58] States that accept triaxial geogrids for construction projects tend to have separate specifications for biaxial and triaxial products; a significant number of states have both biaxial and triaxial geogrids on their approved product lists.[59] A

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[48] Tensar Prehearing Brief at 27. In letters dating from 2009 and 2010, however, Tensar stated to its customers that substitution of its biaxial geogrids with its triaxial geogrids "for unpaved roadway construction and subgrade improvement applications can and should be done with complete confidence." Hanes Posthearing Brief, Exhibits 4 and 5 (Tensar substitution letters).

[49] Hanes Prehearing Brief at 17-18, Posthearing Brief at 2.

[50] CR at I-17, PR at I-13, and CR/PR at Table E-1.

[51] CR/PR at Table D-1.

[52] CR/PR at Table I-3. *** domestic producers, six of ten importers, and ten of 20 reporting U.S. purchasers found biaxial and triaxial geogrids fully or mostly comparable regarding interchangeability. *Id.* Eight of the remaining 15 market participants found the products somewhat comparable. *Id*.

[53] http://www.tensarcorp.com/Systems-and-Products/Tensar-geogrids (visited and printed Feb. 23, 2016).

[54] CR at I-25, PR at I-16; Tensar Prehearing Brief at 34.

[55] Hanes Prehearing Brief at 12-13 and Exhibits 2, 4, and 5.

[56] Hanes Prehearing Brief at 13-14 and Exhibits 6 and 8.

[57] CR/PR at Table D-1.

[58] CR/PR at Table D-1.

[59] CR/PR at Table E-1.

significant majority of market participants found biaxial geogrids and triaxial geogrids at least somewhat comparable with regard to producer and customer perceptions.[60]

Price. The average unit value ("AUV") of Tensar's U.S. shipments of triaxial geogrids were approximately *** as much as the AUVs for its shipments of biaxial geogrids.[61] The record suggests that this is due largely to Tensar's patent on triaxial geogrids and the additional support services, such as design, technical guidance, and installation assistance that Tensar provides for its triaxial geogrid customers.[62] Market participants had a mixed response regarding the comparability of biaxial geogrids and triaxial geogrids with respect to price, with substantial numbers finding the products not at all comparable.[63]

Conclusion. Based on the record in the final phase of these investigations, we define a single domestic like product including both biaxial and triaxial geogrids. The two types of geogrids are similar in several important respects. Both are made from the same raw materials, produced in the same facilities using much of the same machinery and employees, frequently sold through the same channels of distribution, and used for similar projects, principally road construction. The record indicates the two products have different physical qualities because of the greater tensile strength, radial stiffness, and thickness of the triaxial geogrid. The two products nevertheless appear to be interchangeable for similar construction projects, at least in the design stage, although the record shows that engineering specifications in some states and municipalities treat them differently. Consequently, there are some differences between the products; moreover, customer perceptions are mixed and triaxial geogrids are sold at significantly higher prices than biaxial geogrids. Nevertheless, on balance, we find the record in these final phase investigations supports the finding that there are more similarities than differences between biaxial geogrids within the scope definition and the triaxial geogrid products that are outside the scope.[64] We therefore define the domestic like product as consisting of biaxial geogrids and triaxial geogrids in these investigations.

III. Domestic Industry

The statute defines the relevant industry as the "producers as a {w}hole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[65] In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all

[60] CR/PR at Table I-3. All nine reporting U.S. importers and 16 of 18 reporting U.S. purchasers found biaxial and triaxial geogrids at least somewhat comparable in producer and customer perceptions. *Id.*

[61] CR/PR at Table III-3.

[62] CR at II-2, PR at II-2; Tensar Prehearing Brief at 28-29.

[63] CR/PR at Table I-3. Four of 10 reporting U.S. importers and 11 of 19 reporting U.S. purchasers found biaxial and triaxial geogrids were never comparable with regard to price. *Id.*

[64] This is the same finding we made in the preliminary determinations on a somewhat less extensive record. *Preliminary Determination*, USITC Pub. 4596 at 10.

[65] 19 U.S.C. § 1677(4)(A).

domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

In our preliminary determinations, we did not find appropriate circumstances to exclude any U.S. producer from the domestic industry and defined the U.S. industry to encompass all domestic producers of biaxial geogrids and triaxial geogrids.[66] There are no related party issues in the final phase of these investigations.[67] Consequently, we define the domestic industry to include all U.S. producers of biaxial geogrids and triaxial geogrids.

IV. Material Injury by Reason of Subject Imports[68]

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[69] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.[70] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[71] In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United

[66] USITC Pub. 4596 at 10-11.

[67] Tensar *** during the POI. CR at III-11, PR at III-4. Although Tensar has an affiliated producer of biaxial geogrids in China, that firm *** subject merchandise to the United States during the POI. *See* CR/PR at Tables III-1, VII-1. Consequently, Tensar is not a related party by virtue of its affiliation with a Chinese producer. 19 U.S.C. § 1677(7)(4)(B).

[68] Pursuant to section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible. 19 U.S.C. §§ 1671b(a),1673b(a), 1677(24)(A)(i),1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)). In the most recent 12-month period preceding the filing of the petition for which are available in the record, January through December 2015, the volume of subject imports from China accounted for 100 percent of total U.S. imports of biaxial geogrid products. CR at IV-12, PR at IV-5. Consequently, subject imports from China are not negligible.

[69] 19 U.S.C. §§ 1671d(b), 1673d(b). The Trade Preferences Extension Act of 2015, Pub. L. 114-27, amended the provision of the Tariff Act pertaining to Commission determinations of material injury and threat of material injury by reason of subject imports in certain respects. We have applied these amendments in this investigation.

[70] 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[71] 19 U.S.C. § 1677(7)(A).

States.[72] No single factor is dispositive, and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[73]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[74] it does not define the phrase "by reason of," indicating that this aspect of the injury analysis is left to the Commission's reasonable exercise of its discretion.[75] In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[76]

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[77] In performing its examination, however, the Commission need not isolate

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[72] 19 U.S.C. § 1677(7)(C)(iii).

[73] 19 U.S.C. § 1677(7)(C)(iii).

[74] 19 U.S.C. §§ 1671d(a), 1673d(a).

[75] *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) ("{T}he statute does not 'compel the commissioners' to employ {a particular methodology}."), *aff'g,* 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

[76] The Federal Circuit, in addressing the causation standard of the statute, observed that "{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement." *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that "this court requires evidence in the record 'to show that the harm occurred "by reason of" the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.'" *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass'n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

[77] Uruguay Round Agreements Act Statement of Administrative Action (SAA), H.R. Rep. 103-316, vol. 1 at 851-52 (1994) ("{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. 96-249 at 75 (1979) (the Commission "will consider information which indicates that harm is caused by factors other than less-than-fair-value imports."); H.R. Rep. 96-317 at 47 (1979) ("in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;" those factors include "the volume and prices of nonsubsidized

(Continued...)

the injury caused by other factors from injury caused by unfairly traded imports.[78] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as non-subject imports, which may be contributing to overall injury to an industry.[79] It is clear that the existence of injury caused by other factors does not compel a negative determination.[80]

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject imports" and the Commission "ensure{s} that it is not attributing injury from other sources to the subject imports."[81] [82] Indeed, the Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[83]

(…Continued)
imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry"); *accord Mittal Steel*, 542 F.3d at 877.

[78] SAA at 851-52 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports."); *Taiwan Semiconductor Industry Ass'n,* 266 F.3d at 1345 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports ... . Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports." (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int'l Trade 2002) ("{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury" or make "bright-line distinctions" between the effects of subject imports and other causes.); *see also Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that "{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, *i.e*., it is not an 'other causal factor,' then there is nothing to further examine regarding attribution to injury"), *citing Gerald Metals,* 132 F.3d at 722 (the statute "does not suggest that an importer of LTFV goods can escape countervailing duties by finding some tangential or minor cause unrelated to the LTFV goods that contributed to the harmful effects on domestic market prices.").

[79] S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

[80] *See Nippon Steel Corp*., 345 F.3d at 1381 ("an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the 'dumping' need not be the sole or principal cause of injury.").

[81] *Mittal Steel*, 542 F.3d at 877-78; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.") *citing United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 792 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

[82] Commissioners Pinkert and Kieff do not join this paragraph or the following three paragraphs. They point out that the Federal Circuit, in *Bratsk*, 444 F.3d 1369, and *Mittal Steel*, held that the (Continued...)

The Federal Circuit's decisions in *Gerald Metals, Bratsk*, and *Mittal Steel* all involved cases where the relevant "other factor" was the presence in the market of significant volumes of price-competitive nonsubject imports. The Commission interpreted the Federal Circuit's guidance in *Bratsk* as requiring it to apply a particular additional methodology following its finding of material injury in cases involving commodity products and a significant market presence of price-competitive non-subject imports.[84] The additional "replacement/benefit" test looked at whether nonsubject imports might have replaced subject imports without any benefit to the U.S. industry. The Commission applied that specific additional test in subsequent cases, including the *Carbon and Certain Alloy Steel Wire Rod from Trinidad and Tobago* determination that underlies the *Mittal Steel* litigation.

Mittal Steel clarifies that the Commission's interpretation of *Bratsk* was too rigid and makes clear that the Federal Circuit does not require the Commission to apply an additional test nor any one specific methodology; instead, the court requires the Commission to have "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and requires that the Commission not attribute injury from nonsubject imports or other factors to subject imports.[85] Accordingly, we do not consider ourselves required to apply the replacement/benefit test that was included in Commission opinions subsequent to *Bratsk*.

The progression of *Gerald Metals, Bratsk*, and *Mittal Steel* clarifies that, in cases involving commodity products where price-competitive nonsubject imports are a significant factor in the U.S. market, the Court will require the Commission to give full consideration, with adequate explanation, to non-attribution issues when it performs its causation analysis.[86]

(…Continued)
Commission is *required*, in certain circumstances when considering present material injury, to consider a particular issue with respect to the role of nonsubject imports, without reliance upon presumptions or rigid formulas. The Court has not prescribed a specific method of exposition for this consideration. *Mittal Steel* explains as follows:

> What *Bratsk* held is that "where commodity products are at issue and fairly traded, price competitive, non-subject imports are in the market," the Commission would not fulfill its obligation to consider an important aspect of the problem if it failed to consider whether non-subject or non-LTFV imports would have replaced LTFV subject imports during the period of investigation without a continuing benefit to the domestic industry. 444 F.3d at 1369. Under those circumstances, Bratsk requires the Commission to consider whether replacement of the LTFV subject imports might have occurred during the period of investigation, and it requires the Commission to provide an explanation of its conclusion with respect to that factor.

542 F.3d at 878.

[83] *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); *see also Mittal Steel*, 542 F.3d at 879 ("*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was 'by reason' of subject imports.").

[84] *Mittal Steel*, 542 F.3d at 875-79.

[85] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 875-79 & n.2 (recognizing the Commission's alternative interpretation of *Bratsk* as a reminder to conduct a non-attribution analysis).

[86] To that end, after the Federal Circuit issued its decision in *Bratsk*, the Commission began to present published information or send out information requests in final phase investigations to (Continued...)

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.[87] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[88]

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is material injury by reason of subject imports of certain biaxial integral geogrid products.

1. Demand Conditions

Demand for biaxial and triaxial geogrids depends on the demand for the downstream applications in which they are used, primarily road construction in both the public and private sectors. Consequently, the major demand drivers are public spending on highways and roads, and private construction spending for streets, housing developments, and parking lots. Apparent U.S. consumption of biaxial and triaxial geogrids increased steadily over the POI from *** square yards ("SY") in 2013 to *** SY in 2014 and *** SY in 2015.[89]

Hanes asserts that demand for biaxial geogrids coincides with the construction season and is higher during the warmer months. It also reports that geogrids are used for stabilization in less than five percent of road construction projects.[90] Tensar and Hanes agree that other forms of geostabilization exist, such as additional aggregate, woven or knitted fabric, and chemical stabilization.[91] One industry participant reported that the geological composition or location of the road construction site sometimes determines which technology is chosen for stabilization.[92]

(…Continued)
producers in nonsubject countries that accounted for substantial shares of U.S. imports of subject merchandise (if, in fact, there were large nonsubject import suppliers). In order to provide a more complete record for the Commission's causation analysis, these requests typically seek information on capacity, production, and shipments of the product under investigation in the major source countries that export to the United States. The Commission plans to continue utilizing published or requested information in final phase investigations in which there are substantial levels of non-subject imports.

[87] We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

[88] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp*., 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

[89] CR/PR at Table IV-5. Apparent U.S. consumption was *** SY in January – September ("interim") 2015 and *** SY in interim 2016. *Id*.

[90] Hanes Postconference Brief at 25.

[91] Conference Transcript at 103-104 (Witt).

[92] Hearing Transcript at 173-174 (Cashett).

2. Supply Conditions

While sources of supply to the U.S. market during the POI included limited imports from nonsubject sources, the U.S. market for geogrids was satisfied almost entirely by the domestic industry and subject imports during the POI. The domestic industry's share of the U.S. market for biaxial and triaxial geogrids decreased from *** percent in 2013 to *** percent in 2014, and rose *** to *** percent in 2015.[93]

There were two domestic producers of biaxial geogrids during the POI, Tensar and Tenax.[94] Since 2003, Tensar has held the patent on triaxial geogrid products and it remains the only producer of triaxial geogrids.[95] Consequently, there were no imports of triaxial geogrids during the POI. Tensar previously held the patent on biaxial geogrids in the United States, which expired in May 2012. Tensar offers both branded and private label biaxial products, but sells triaxial geogrids only under its own brand.[96] The domestic industry's capacity for biaxial and triaxial geogrids remained constant from 2013 to 2015 at *** SY for each year. Its capacity was *** SY in both interim periods.[97] Tensar exported a significant portion of its biaxial and triaxial geogrid production; its exports of biaxial geogrids decreased over the POI.[98]

The record contains conflicting information regarding the number of biaxial geogrid producers in China. Tensar states that there are over 75 Chinese producers of biaxial geogrids and Hanes asserts that there are only four major subject producers.[99] Subject imports' market share increased from *** percent in 2013 to *** percent in 2014 and *** percent in 2015.[100]

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[93] CR/PR at Table C-1. The domestic industry's share of the U.S. market for biaxial and triaxial geogrids was *** percent in interim 2015 and *** percent in interim 2016. *Id*.

[94] CR at I-5, PR at I-4.

[95] In 2010, Tensar sent a letter to its customers stating its intent to discontinue regular production of its Type 2 biaxial geogrid product and requested that customers purchase its triaxial geogrid product for those applications. Tensar states, however, that it reversed the decision soon after the requests were made and well before the current POI. Tensar further avers that it has remained committed to both the biaxial geogrid market and the production of biaxial geogrid products. CR at II-3 n.17, PR at II-2 n.17; *see also* Conference Transcript at 78-79 (Gee); Tensar Postconference Brief at 1 and Exhibit 104, and Posthearing Brief at 10; and Hanes Posthearing Brief, Exhibit 2 (Tensar letter).

[96] CR at II-2, PR at II-1. Tensar offers its branded biaxial and triaxial geogrids via exclusive arrangements with distributors. It offers private label biaxial geogrids to other (nonexclusive) distributors. Distributors also sell subject imports under their private label house brands, although a small portion of the subject merchandise imported during the POI was under the branded label of subject producers. *Id*.

[97] CR/PR at Table III-2.

[98] Domestic producers' exports of biaxial and triaxial geogrids, as a percentage of total shipments, decreased from *** percent in 2013 to *** percent in 2014, and to *** percent in 2015. They were *** percent of total shipments in interim 2015 and *** percent in interim 2016. CR/PR at Table III-3.

[99] CR II-10, PR at II-6, CR/PR at VII-3; *see also* Tensar Prehearing Brief at 76; Hanes Posthearing Brief at 12-13 and Appendix 1 at 5 and Exhibit 7.

[100] CR/PR at Table IV-5. Subject imports' market share was *** percent in interim 2015 and *** percent in interim 2016. *Id*.

Nonsubject imports of biaxial geogrids had a very small presence in the U.S. market during the POI.[101] Their share of apparent U.S. consumption was *** throughout the 2013 to 2015 period and was *** percent in interim 2016.[102] The largest nonsubject source of biaxial geogrid products was ***.[103]

3. Substitutability and Other Conditions

We find that there is a moderate-to-high degree of substitutability between the domestic like product and subject imports.[104] All responding U.S. producers and the majority of importers and purchasers reported that domestically produced biaxial geogrid products, subject imports, and nonsubject imports of biaxial geogrid products are always or frequently interchangeable.[105] Majorities or pluralities of purchasers found the domestic like product and subject imports comparable in 11 of 17 non-price purchasing factors, including those referring to quality, availability, and reliability of supply.[106] All purchasers named price as a very important or somewhat important factor in purchasing decisions, and price was most frequently named as the most important factor in such decisions.[107] Therefore, we find that price is an important factor in purchasing decisions, although quality, reliability, and the availability of supply can also be important factors.[108]

Product service and technical support also are important factors in purchasing decisions for most customers, although less important than price, quality meeting industry standards, availability, or reliability of supply.[109] Tensar states that it offers additional design, technical, and installation guidance on triaxial geogrid products that it does not offer with its branded biaxial geogrids, and that it provides no additional services for private label sales of biaxial geogrids. Most purchasers, however, found the domestic like product comparable or superior to subject imports with respect to service and technical support.[110]

The principal raw material used in biaxial geogrid production is polypropylene resin. The cost of polypropylene resin decreased 28 percent overall between January 2013 and September 2016. [111]

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[101] As noted above, there were no imports of triaxial geogrid from any source during the POI. CR at IV-2, PR at IV-1

[102] CR/PR at Table IV-5.

[103] CR at IV-4, PR at IV-3.

[104] CR at II-17, PR at II-10.

[105] CR/PR at Table II-10.

[106] CR/PR at Table II-9. Purchasers' perceptions were mixed, with 12 of 20 finding differences other than price always or frequently significant, and the remaining eight purchasers finding such differences never or sometimes significant. *Id*.

[107] CR/PR at Tables II-6 and II-7.

[108] CR/PR at Table II-7.

[109] CR/PR at Table II-7.

[110] CR/PR at Table II-9.

[111] CR/PR at V-1, and CR/PR at Figure V-1.

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[112]

The quantity of subject imports of biaxial geogrid products in the U.S. market increased from *** SY in 2013 to *** SY in 2014 and *** SY in 2015, an increase of *** percent from 2013 to 2015.[113] The market share of subject imports increased steadily during this period; it was *** percent in 2013, *** percent in 2014, and *** percent in 2015.[114] The subject imports' increased market share came entirely at the expense of the domestic industry, as subject imports gained and the domestic industry lost *** percentage points of market share over the POI.[115]

We do not agree with Hanes that the expiration of Tensar's U.S. patent on the in-scope biaxial geogrids in 2012 can explain fully the sharp increase in subject import volumes during the POI.[116] Tensar's patent expired in May 2012, seven months before the beginning of the POI, while the significant increases in import volume and market penetration by the subject imports continued in each full year of the POI.[117] We find therefore that the expiration of Tensar's patent in 2012 cannot fully explain the increases in subject imports' volume and market share that occurred throughout the POI.[118]

Accordingly, we conclude that subject import volume is significant in absolute terms and relative to consumption, and that the increase in subject import volume and market share is significant.

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[112] 19 U.S.C. § 1677(7)(C)(i).

[113] CR/PR at Table IV-5. The quantity of subject imports in the U.S. market was *** SY in interim 2015, and lower, at *** SY, in interim 2016. *Id*. We find that the decreased volume of subject imports in interim 2016 appears to be a result of the pendency of these investigations; subject imports dropped precipitously shortly after the petition was filed. CR/PR at Tables IV-3 and IV-4. This sharp decline in subject imports continued through September 2016. S*ee* Responses to Commission's U.S. Import Questionnaire, Question II-7. Consequently, we are according reduced weight to the decline in subject import volume for the interim 2016 period. *See* 19 U.S.C. § 1677(7)(I).

[114] CR/PR at Table IV-5. The market share of subject imports was *** percent in interim 2015 and *** percent in interim 2016. *Id*.

[115] CR/PR at Table IV-5.

[116] Hanes Prehearing Brief at 33-34, 40-42, and 52 and Posthearing Brief, Appendix at 2.

[117] *See* CR/PR at Table IV-5.

[118] We have considered the opportunity for additional suppliers to enter the U.S. market upon expiration of this patent as a pertinent condition of competition. This circumstance, however, is not dispositive under the statute of our analysis of the significance of subject import volume. Of particular significance in these investigations, the domestic industry was capable of supplying sufficient biaxial geogrid products to satisfy apparent U.S. consumption for the entire POI. Moreover, as explained below, the subject imports were unfairly traded and entered the U.S. market at prices that had significant effects on the domestic industry.

D. Price Effects of Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of the subject imports, the Commission shall consider whether

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[119]

As addressed above, the record indicates there is a moderate-to-high degree of substitutability between subject imports and the domestic like product and that price, along with availability and quality, are important considerations for purchasers that are choosing among competing geogrid suppliers.

In the final phase of these investigations, the Commission collected pricing data for three biaxial geogrid products.[120] Data were requested for sales of branded biaxial geogrid products to distributors and end users. In addition, U.S. producers were requested to provide data for sales of unbranded biaxial geogrids to private label purchasers, and importers were requested to provide landed, duty-paid purchase cost data for their imports of unbranded subject biaxial geogrids for private label sales.[121]

One domestic producer and 11 importers provided usable quarterly net U.S. f.o.b. selling price data and direct import purchase cost data for these products, although not all firms reported pricing for all products for all quarters.[122] Pricing data from these firms for the branded products accounted for approximately *** percent of U.S. producers' shipments of biaxial geogrid products and 72.4 percent of U.S. shipments of subject biaxial geogrids from China in 2015.[123]

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[119] 19 U.S.C. § 1677(7)(C)(ii).

[120] These are: Product 1 -- Biaxial integral geogrid, made from polypropylene, commonly known as "Type 1" or "BX 1100," with a minimum rib thickness of 0.03 inches, and an ultimate tensile strength of 850 lb/ft in the longitudinal direction (also known as "machine direction" or "MD Value") and 1,300 lb/ft in the transverse direction (also known as "cross machine direction" or "XMD Value"); Product 2 -- Biaxial integral geogrid, made from polypropylene, commonly known as "Type 2" or "BX 1200," with a minimum rib thickness of 0.05 inches, and an ultimate tensile strength of 1,310 lb/ft for the MD Value, and 1,970 lb/ft for the XMD Value; and Product 3 -- A four-sided biaxial integral geogrid, made from polypropylene, commonly known as "SX2020, BX2020" with a minimum rib thickness of 0.045 inches, and a balanced ultimate tensile strength of 1,370 lb/ft in both the MD Value and XMD Value. CR at V-5, PR at V-3 to V-4.

[121] CR at V-6, PR at V-4.

[122] CR at V-6, PR at V-4.

[123] CR at V-6, PR at V-4.

The pricing data indicate that subject imports pervasively undersold the domestic like product throughout the POI. Specifically, branded subject imports undersold the domestic like product in 40 of 62 quarterly comparisons at margins ranging from *** percent to *** percent.[124] The quantity of subject imports in underselling comparisons was *** SY, while the quantity of subject imports that oversold the domestic like product was *** SY.[125] Purchasers also confirmed purchasing a substantial quantity of subject imports instead of the domestic like product due to their lower price, which further supports a finding that this underselling was significant.[126] Indeed, as stated above, between 2013 and 2015 the domestic industry lost *** percentage points of market share to the subject imports.[127]

We have also examined the direct import cost data and domestic price data for private label sales. These direct imports of biaxial geogrids for private label sales account for a substantial share of subject imports and the private label sales account for a large share of shipments of the domestic like product.[128] The record also indicates that comparisons of domestic prices and prices for direct imports are pertinent to purchasing decisions made by distributors of private label biaxial geogrid products. Specifically, five of seven direct importers reported that they compared costs associated with direct importation to prices from U.S. producers in determining whether to import geogrids directly or instead to purchase from a U.S. producer.[129] The direct import purchase cost data for private label subject imports also show that the imported products were consistently priced lower than the domestically produced product. Specifically, the landed duty-paid costs of private label subject imports were lower than the private label sales prices of the domestic like product in 29 of 30 quarterly comparisons,[130] and the differences in the acquisition costs often exceeded the additional costs reportedly incurred with direct importation.[131]

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[124] CR at V-25, PR at V-7, and CR/PR at Table V-11.

[125] CR at V-25, PR at V-7, and CR/PR at Table V-11.

[126] In response to the Commission's purchaser's questionnaires, eight of 22 responding purchasers reported they purchased subject imports instead of domestically produced biaxial geogrid products during the POI. CR at V-31, PR at V-10, and CR/PR at Table V-14. Four purchasers reported purchasing a total of *** SY of subject imports instead of the domestic like product in 2015 because of the lower price of the subject imports. *Id*.

[127] CR/PR at Table IV-5.

[128] Direct import cost data from eight reporting importers represented *** percent of subject imports in 2015. CR at V-6, PR at V-4.

[129] CR at V-26, PR at V-9; *see also* CR/PR at Table V-12. Four of these five direct importers also compared direct import costs to costs of purchasing from U.S. importers. *Id.* Firms that directly imported subject geogrids identified the following advantages to direct importation versus a purchase from a U.S. producers or importer: price, cost, availability, corporate level agreements, and ability to procure geogrid products. CR at V-27, PR at V-9.

[130] CR/PR at Tables V-6 to V-8.

[131] CR at V-27 to V-28 and n.17, PR at V-9 to V-10 and n.17, and CR/PR at Table V-10; *see also* Hanes Posthearing Brief at 14-15. U.S. importers *** and *** reported that they had incurred additional costs ranging up to 10 percent of the landed duty-paid value for subject geogrids acquired through direct importation compared to purchasing geogrids from a U.S. producer. CR at V-27 to V-28 and n.17, PR at V-9 to V-10 and n.17. The record indicates that the prices for domestically produced (Continued...)

Given the predominant underselling and the fact that price is an important consideration in purchasing decisions, we find the underselling by subject imports to be significant, particularly in light of the fact that it resulted in the market share shifts described above.

During the period, prices for each of the three domestically produced branded biaxial geogrid pricing products decreased from 15 to 49 percent. Declines occurred throughout the POI.[132] Sales prices for the branded imported biaxial geogrid pricing products also declined during this period.[133] These price declines occurred despite increasing apparent U.S. consumption from 2013 to 2015,[134] and cannot be explained by the decline in raw materials costs over the POI.[135] Moreover, eleven responding purchasers reported that U.S. producers had reduced prices to compete with lower priced imports from China.[136] We therefore conclude that subject imports depressed prices for the domestic like product to a significant degree.[137]

(…Continued)
private label geogrids were higher than the total landed duty-paid values for subject private label geogrids by margins exceeding 10 percent in the vast majority of quarterly comparisons. *See* CR/PR at Tables V-6 through V-8 and V-10. Thus, even with the additional costs associated with direct importation included, private label subject imports were priced lower than the domestic like product.

[132] CR at V-23, PR at V-7, and CR/PR at Table V-10.

[133] CR at V-23, PR at V-7, and CR/PR at Table V-10. Prices for the three branded subject biaxial geogrid pricing products decreased from 8 to 39 percent. Landed duty-paid purchase costs of private label subject imports also decreased from 11 to 33 percent. *Id*.

[134] *See* CR/PR at Table IV-5.

[135] Hanes's argument that declining raw materials costs account for the decline in prices over the POI is not supported by the record. Hanes Prehearing Brief at 46. We acknowledge that raw materials costs for polypropylene (the principal ingredient used in the production of biaxial geogrid products) decreased 28 percent over the POI. Polypropylene costs did not decline steadily throughout the POI, however; they fluctuated from January 2013 through December 2014, dropped sharply in January 2015, and then fluctuated at lower levels throughout the remainder of the POI. CR/PR at Figure V-1 and Tensar Prehearing Brief at Exhibit 77 (monthly costs for polypropylene ranged from $1,940 to $2,282 per metric ton ("MT") from January 2013 through December 2014; then ranged from $1,301 to $1,554/MT from January through December 2015). By contrast, however, prices for domestically produced product declined throughout the POI, as discussed above. Moreover, the domestic industry's unit cost of goods sold increased from 2013 to 2015. *See* CR/PR at Table VI-1. The record consequently does not show any direct correlation between polypropylene costs and prices for domestically produced products.

[136] CR at V-31, PR at V-11, and CR/PR at Table V-15 (of the 24 responding purchasers, 11 reported that U.S. producers had lowered prices to compete with subject imports, two reported that the U.S. producers had not lowered prices, and 11 reported that they did not know). The reported estimated price reduction ranged from 3 to 75 percent. *Id*.

[137] We are unconvinced by Hanes' argument that the decline in prices over the POI were caused by the domestic industry's private label pricing practices. Hanes Prehearing Brief at 43-46 and Posthearing Brief at 6-11. Although Hanes emphasizes the falling prices Tensar offered for private label geogrid products during the POI, landed duty-paid purchase costs for private label subject imports were (Continued...)

The pervasive underselling by subject imports of biaxial geogrid products allowed those imports to capture market share from the domestic industry. Moreover, the increasing volume of low-priced subject imports depressed prices for the domestic like product to a significant degree. We consequently conclude that the subject imports had significant price effects.

E. Impact of Subject Imports[138]

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[139] These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[140]

We find that the domestic industry's performance was impaired during the POI as it lost market share to the subject imports and its prices were depressed. Any growth in output-related indicators was far less than that of apparent U.S consumption. Because of lost market share and declining prices, the domestic industry experienced declining financial performance.

(…Continued)
even lower than Tensar's prices for private label geogrids. *See* CR/PR at Tables V-6 to V-8 and Figures V-2c, V-3c, and V-4c. Moreover, we find that the continued decline in prices throughout the POI militates against the conclusion that the declining prices over the POI were associated with the expiration of Tensar's patent on biaxial geogrids in 2012.

[138] The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination, Commerce found dumping margins of 372.81 percent for the PRC-Wide Entity. *Commerce Final AD Determination*, 82 Fed. Reg. at 3285. We take into account in our analysis the fact that Commerce has made findings that all subject imports are sold at less than fair value. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant price effects of the cumulated subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

[139] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

[140] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

The domestic industry's capacity remained constant over the POI,[141] however, its production declined from 2013 to 2015, as did capacity utilization.[142] The domestic industry's U.S. commercial shipments decreased from *** SY in 2013 to *** SY in 2014, and then increased to *** SY in 2015, an increase of *** percent from 2013 to 2015, which was significantly less than the *** percent increase in apparent U.S. consumption.[143] The domestic industry's share of apparent U.S. consumption declined from *** percent in 2013 to *** percent in 2014, and then increased slightly to *** percent in 2015.[144] The industry's end-of-period inventories fluctuated over the period, but increased significantly in 2014 commensurate with significant increases in subject import volume.[145]

The domestic industry's employment and productivity showed declines. The average number of production workers decreased from 2013 to 2015.[146] The industry's productivity fluctuated over the POI and was lower in 2015 than in 2013,[147] while its unit labor costs increased.[148] The domestic industry's total hours worked and wages paid decreased, although hourly wages increased.[149]

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[141] The domestic industry's production capacity for biaxial and triaxial geogrid products was constant at *** SY from 2013 to 2015, and was *** SY in interim 2015 and interim 2016. CR/PR at Table III-2.

[142] The domestic industry's production declined from *** SY in 2013 to *** SY in 2014 and *** SY in 2015. It was *** SY in interim 2015 and *** SY in interim 2016. CR/PR at Table III-2. Production from 2013 to 2015 decreased *** percent, while during that period apparent U.S. consumption increased *** percent. CR/PR at Table C-1. We observe that production was higher in interim 2016, when subject imports reduced their presence in the market due to the pendency of these investigations, than in interim 2015.

The domestic industry's capacity utilization was *** percent in 2013, *** percent in 2014, and *** percent in 2015, and was *** percent in interim 2015 and *** percent in interim 2016. CR/PR at Table III-2.

[143] *See* CR/PR at Tables III-3 and C-1. As was the case with production, the domestic industry's total U.S. shipments of biaxial and triaxial geogrid products were higher, at *** SY, in interim 2015 than in interim 2016, when they were *** SY. CR/PR at Table III-3.

[144] CR/PR at Table IV-5. The domestic industry's share of apparent U.S. consumption was *** percent in interim 2015 and was *** percent in 2016. *Id*.

[145] The domestic industry's end-of-period inventories rose from *** SY in 2013 to *** SY in 2014, and then declined to *** SY in 2015, They were *** SY in interim 2015 and lower, at *** SY, in interim 2016. CR/PR at Table III-4.

[146] The domestic industry's average number of production workers was *** in 2013, *** in 2014, and *** in 2015, and was *** in interim 2015 and *** in interim 2016. CR/PR at Table III-5.

[147] The domestic industry's productivity (in SY per hour) was *** in 2013, *** in 2014, and *** in 2015, and was *** in interim 2015 and *** in interim 2016. CR/PR at Table III-5.

[148] The domestic industry's unit labor costs were $*** in 2013, $*** in 2014 and 2015, and were $*** in interim 2015 and $*** in interim 2016. CR/PR at Table III-5.

[149] Total hours worked were *** in 2013, *** in 2014, and *** in 2015, and were *** in interim 2015 and *** in interim 2016. Wages paid were $*** in 2013, $*** in 2014, and $*** in 2015, and were $*** in interim 2015 and $*** in interim 2016. Hourly wages paid were $*** in 2013, $*** in 2014, and $*** in 2015, and were $*** in interim 2015 and $*** in interim 2016. CR/PR at Table III-5.

The domestic industry's financial performance generally declined from 2013 to 2015. Despite the increases in apparent U.S. consumption, the industry's net sales revenues declined irregularly over the POI, reflecting in part the price depression caused by the subject imports.[150] The per unit cost of goods sold ("COGS") increased in each year of the POI and COGS were higher in 2015 than in 2013 on an aggregate basis.[151] Gross profits declined in each year of the POI.[152] Operating income also declined in each year of the POI,[153] and the ratio of operating income to net sales declined from *** percent in 2013 to *** percent in 2014, and then to *** percent in 2015.[154] Net income declined irregularly over the period and was lower in 2015 than

[150] The domestic industry's total net sales values were $*** in 2013, $*** in 2014, and $*** in 2015, and were $*** in interim 2015 and $*** in interim 2016. CR/PR at Table VI-1.

[151] CR/PR at Table VI-1. The domestic industry's COGS was $*** in 2013, $*** in 2014, and $*** in 2015, and was $*** in interim 2015 and $*** in interim 2016.

[152] The domestic industry's gross profit was $*** in 2013, $*** in 2014, and $*** in 2015, and was $*** in interim 2015 and $*** in interim 2016. CR/PR at Table VI-5.

[153] The domestic industry's operating income was $*** in 2013, $*** in 2014, and $*** in 2015, and was $*** in interim 2015 and $*** in interim 2016. CR/PR at Table VI-1. Hanes asserts that the decline in Tensar's profitability over the POI is attributable to what it characterizes as Tensar's unusually high ratio of selling, general and administrative ("SG&A") expenses to net sales, noting that it was consistently over *** percent during the POI. Hanes Prehearing Brief at 48-49 and Posthearing Brief at 11-12. Tensar's SG&A expense ratio was *** percent in 2013, *** percent in 2014, and *** percent in 2015, and was *** percent in interim 2015 and *** percent in interim 2016. CR/PR at Table VI-1. We observe that, while Tensar's SG&A expense ratio was relatively high over the period, it was also relatively constant. Thus, Tensar's SG&A expense ratios during the period did not drive the declines in its operating performance from 2013 to 2015. Moreover, Tensar's SG&A expenses are related to its provision of significant service and technical support, ***. CR at VI-8 n.17, PR at VI-4, n.17; *see also*, Tensar Posthearing Brief, Exhibit 1 at 12-13.

Hanes also argues that the decline in Tensar's exports over the POI had a material impact on the domestic industry's operating margin. It argues that the decline in Tensar's net sales during the period was driven entirely by decreasing exports, which accounted for a quarter to a third of Tensar's total shipments. It argues that the impact of declining exports resulted in an increase in Tensar's SG&A ratios and per unit expenses. Hanes Prehearing Brief at 48 and Posthearing Brief at 5. We are not persuaded by Hanes' argument. The decline in Tensar's exports was a factor but cannot explain fully the domestic industry's condition during the POI in light of declines in domestic shipments and market share from 2013 to 2015. Specifically, the domestic industry's U.S. shipments of biaxial and triaxial geogrids decreased by *** SY and it lost *** percentage points of market share from 2013 to 2014, when apparent U.S. consumption increased. CR/PR at Tables III-3, IV-5. During the same period, U.S. shipments of subject Imports increased by *** SY and took market share directly from the domestic industry. CR/PR at Table IV-7. Moreover, the influx of low-priced subject imports appeared to have forced the domestic industry to reduce its prices from 2013 to 2015. *See* CR/PR at Table C-1.

[154] CR/PR at Table VI-1. The domestic industry's ratio of operating income to net sales was *** percent in interim 2015 and *** percent in interim 2016. *Id*. We recognize that the domestic industry's financial condition improved in interim 2016 relative to interim 2015. We find, however, that the industry's improved profitability coincided with an increase in market share in interim 2016 relative to interim 2015, as Commerce imposed provisional measures and subject imports declined in volume and relinquished market share during the same period. Accordingly, in evaluating the impact of subject (Continued...)

in 2013.[155] The industry's capital expenditures increased irregularly,[156] while its research and development ("R&D") expenses steadily increased over the POI.[157]

The domestic industry lost market share and was unable to benefit fully from increased demand over the POI due to the significant and increased volume of subject imports. Both the lost market share and the price declines caused by the subject imports caused the industry to forego revenues that it would otherwise have received. Consequently, the domestic industry's financial condition, although profitable, was worse than it would have been otherwise.[158] We consequently find that the subject imports had a significant impact on the domestic industry.

We have considered whether there are other factors that have had an impact on the domestic industry so as not to attribute any injury caused by these factors to the subject imports. As indicated above, nonsubject imports were an insignificant factor in the U.S. market over the POI.[159] Nonsubject imports as a share of apparent U.S. consumption increased from *** percent in 2013 to *** percent in 2014, and then decreased to *** percent in 2015.[160] Consequently, the limited presence of nonsubject imports in the U.S. market during the POI cannot not explain the domestic industry's loss of market share and revenues.

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of certain biaxial integral geogrid products from China that Commerce found were sold in the United States at less than fair value and subsidized by the government of China.

(…Continued)
imports we have placed reduced weight on improvements in the domestic industry's output, revenues, and financial performance in interim 2016.

[155] The domestic industry's net income was $*** in 2013, $*** in 2014, and $*** in 2015, and was *** in interim 2015 and $*** in interim 2016. CR/PR at Table VI-1.

[156] The industry's capital expenditures were $*** in 2013, $*** in 2014, and $*** in 2015, and were $*** in interim 2015 and $*** in interim 2016. CR/PR at Table VI-4.

[157] The industry's R&D expenses were $*** in 2013, $*** in 2014, and $*** in 2015, and were $*** in interim 2015 and $*** in interim 2016. CR/PR at Table VI-4. Tensar reported, however, that its credit rating was lowered in 2015, which affected its ability to secure supply and performance bonds on projects. CR/PR at Table VI-7.

[158] We observe that, under the Trade Preferences Extension Act of 2015, the existence of a profitable industry, or one whose performance has improved, does not foreclose an affirmative material injury determination. *See* 19 U.S.C. § 1677(7)(J); *see also Certain Hot-Rolled Steel Flat Products from Australia, Brazil, Japan, Korea, the Netherlands, Turkey, and the United Kingdom,* Inv. Nos. 701-TA-545-547 and 731-TA-1291-1297 (Final), USITC Pub. 4638 at 44 n.219 (Sept. 2016); *Cold-Rolled Steel Flat Products from Brazil, India, Korea, Russia, and the United Kingdom,* Inv. Nos. 701-TA-540, 542-544 and 731-TA-1283, 1285, 1287, and 1289-1290 (Final), USITC Pub. 4637 at 35 n.182 (Sept. 2016).

[159] CR/PR at Table IV-5.

[160] CR/PR at Table IV-5. Nonsubject imports as a share of apparent U.S. consumption was *** percent in interim 2015 and was *** percent in interim 2016. *Id*.

V. Critical Circumstances

A. Legal Standards

In the final antidumping and countervailing duty determinations concerning subject imports from China, Commerce made affirmative critical circumstances determinations with respect to certain exporters.[161] Because we have determined that the domestic industry is materially injured by reason of subject imports, we must further determine "whether the imports subject to the affirmative {Commerce critical circumstances} determination{s} . . . are likely to undermine seriously the remedial effect of the antidumping order to be issued."[162]

The SAA indicates that the Commission is to determine "whether, by massively increasing imports prior to the effective date of relief, the importers have seriously undermined the remedial effect of the order" and specifically "whether the surge in imports prior to the suspension of liquidation, rather than the failure to provide retroactive relief, is likely to seriously undermine the remedial effect of the order."[163] The legislative history for the critical circumstances provision indicates that the provision was designed "to deter exporters whose merchandise is subject to an investigation from circumventing the intent of the law by increasing their exports to the United States during the period between initiation of an investigation and a preliminary determination by {Commerce}."[164] An affirmative critical circumstances determination by the Commission, in conjunction with an affirmative determination of material injury by reason of subject imports, would normally result in the retroactive imposition of duties for those imports subject to Commerce's affirmative critical circumstances determination for a period 90 days prior to the suspension of liquidation.[165]

The statute provides that, in making this determination, the Commission shall consider, among other factors it considers relevant –

> (I) the timing and the volume of the imports,
> (II) a rapid increase in inventories of the imports, and
> (III) any other circumstances indicating that the remedial effect of the {order} will be seriously undermined.[166]

In considering the timing and volume of subject imports, the Commission's practice is to consider import quantities prior to the filing of the petition with those subsequent to the filing

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[161] *Commerce Final CVD Determination*, 82 Fed. Reg. at 3282, and *Commerce Final AD Determination*, 82 Fed. Reg. at 3284.

[162] 19 U.S.C. §§ 1671d(b)(4)(A)(i), 1673d(b)(4)(A)(i); 19 U.S.C. §§ 1671d(b)(4)(A)(ii), 1673d(b)(4)(A)(ii); 19 U.S.C. §§ 1671d(e)(2), 1673d(e)(2).

[163] SAA at 877.

[164] *ICC Industries, Inc. v. United States*, 812 F.2d 694, 700 (Fed. Cir. 1987), quoting H.R. Rep. No. 317, 96th Cong., 1st Sess. 63 (1979), *aff'g* 632 F. Supp. 36 (Ct. Int'l Trade 1986).

[165] *See* 19 U.S.C. §§ 1671b(e)(2), 1673b(e)(2).

[166] 19 U.S.C. §§ 1671d(b)(4)(A)(ii), 1673d(b)(4)(A)(ii).

of the petition using monthly statistics on the record regarding those firms for which Commerce has made an affirmative critical circumstance determination.[167]

B. Parties' Arguments[168]

Tensar argues that the volume of imports subject to Commerce's affirmative preliminary determinations of critical circumstances more than doubled from the second half of 2015 to the first half of 2016.[169] It also argues that the available data indicate that importer inventories likely increased significantly in the first half of 2016 when compared to the second half of 2015.[170] Tensar also asserts that an affirmative critical circumstances determination is supported by information in the record showing that there is a high degree of substitutability between domestically produced biaxial geogrids and subject imports, that subject imports have significantly undersold the domestic like product, and that subject imports have suppressed and depressed prices for the domestic like product to a significant degree.[171]

C. Analysis

The Commission is not required to analyze the same period that Commerce examined.[172] Unless the industry under investigation involves seasonality or the Commission decides that circumstances warrant otherwise,[173] the Commission generally compares six months of data gathered from the periods immediately preceding and following the petitions' filing.[174]

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[167] *See Lined Paper School Supplies from China, India, and Indonesia*, Inv. Nos. 701-TA-442 to 443, 731-TA-1095 to 1097 (Final), USITC Pub. 3884 at 46-48 (Sept. 2006); *Carbazole Violet Pigment from China and India*, Inv. Nos. 701-TA-437 & 731-TA-1060 to 1061 (Final), USITC Pub. 3744 at 26 (Dec. 2004); *Certain Frozen Fish Fillets from Vietnam*, Inv. No. 731-TA-1012 (Final), USITC Pub. 3617 at 20-22 (Aug. 2003).

[168] Hanes did not make any arguments in its submissions concerning the issue of critical circumstances in these investigations.

[169] Tensar Prehearing Brief at 95-97.

[170] Tensar Prehearing Brief at 98.

[171] Tensar Prehearing Brief at 98-99.

[172] *Certain Polyester Staple Fiber from China*, Inv. No. 731-TA-1104 (Final), USITC Pub. 3922 at 35 (June 2007); *Steel Concrete Reinforcing Bars from Turkey*, Inv. No. 731-TA-745 (Final), USITC Pub. 3034 at 34 (Apr. 1997).

[173] *Certain Polyester Staple Fiber from China*, Inv. No. 731-TA-1104 (Final), USITC Pub. 3922 at 35 (June 2007) (declining to analyze different periods absent seasonality); *Lined Paper School Supplies from China, India, and Indonesia,* USITC Pub. 3884 at 46-48 (also analyzing period suggested by petitioner but finding any increase consistent with seasonal nature of industry); *Steel Concrete Reinforcing Bars from Turkey*, Inv. No. 731-TA-745 (Final), USITC Pub. 3034 (April 1997) (seasonal product).

[174] The Commission has used five-month periods in recent investigations where the timing of the first preliminary Commerce determination authorizing the imposition of provisional duties would have served to reduce subject import volume in the sixth month of the post-petition period. *See Cold-Rolled Steel Flat Products from China and Japan,* Inv. Nos. 701-TA-541 and 731-TA-1284 and 1286 (Final), USITC

(Continued...)

In its final antidumping and countervailing duty determinations concerning biaxial geogrid products from China, Commerce found that critical circumstances exist with respect to certain subject producers/exporters. On January 17, 2017, Commerce issued its final determination in the antidumping duty investigation and found that critical circumstances exist with respect to subject imports from all sources in China.[175] On that date, Commerce also issued its final determination in the countervailing duty investigation and found that critical circumstances exist with respect to subject imports from all sources in China except Taian Modern Plastic Company, Ltd. ("TMP").[176] Thus, Commerce's critical circumstances determinations in the antidumping and countervailing duty determinations extend to different companies. The statute requires that the Commission make its critical circumstances determinations on the basis of imports subject to Commerce's affirmative critical circumstances determination; therefore, we separately examine the respective data for each investigation.[177] For purposes of our analysis, we analyze data for six-month periods and, given the timing of the filing of the petition (January 13, 2016),[178] we include the month in which the petitions were filed (January 2016) in the initial six-month comparison period.

Based on a comparison of subject imports over six-month periods before and after the January 13, 2016, petition filing, we do not find a an increase in subject import volume warranting affirmative determinations of critical circumstances. For the antidumping duty investigation, subject imports decreased from *** SY to *** SY between the two six-month periods (July-December 2015 and January-June 2016), a decrease of *** SY.[179] For the countervailing duty investigation, imports subject to the affirmative Commerce critical circumstances finding decreased from *** SY to *** SY between the two six-month periods.[180] In light of this, we found that subject imports covered by Commerce's affirmative critical

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(…Continued)
Pub. 4619 (July 2016); *Polyethylene Terephthalate (PET) Resin from Canada, China, India, and Oman,* Inv. Nos. 701-TA-531-532 and 731-TA-1270-1273 (Final), USITC Pub. 4604 at 31-32 (Apr. 2016); *Carbon and Certain Steel Wire Rod from China*, Inv. Nos. 701-TA-512, 731-TA-1248 (Final), USITC Pub. 4509 at 25-26 (Jan. 2015) (using five-month periods because preliminary Commerce countervailing duty determination caused reduction of subject import volume in sixth month). *See also Certain Orange Juice from Brazil*, Inv. No. 731-TA-1089 (Final), USITC Pub. 3838 at 29 n.203 (using seven month period because the petition was filed late in the month). *But see Certain Magnesia Carbon Bricks from China and Mexico*, Inv. Nos. 701-TA-468 (Final) & 731-TA-1166 to 1167 (Final), USITC Pub. 4182 at 24 (Sept. 2010); *Small Diameter Graphite Electrodes from China*, Inv. No. 731-TA-1143 (Final), USITC Pub. 462 at 24 (Feb. 2009). We have used six-month periods here because the petitions were filed in mid-January 2016 and Commerce's preliminary CVD determination was issued at the end of June 2016.

[175] *Commerce Final AD Determination*, 82 Fed. Reg. at 3284.

[176] *Commerce Final CVD Determination*, 82 Fed. Reg. at 3282.

[177] *See*, *e.g., Steel Wire Garment Hangers from Vietnam*, Inv. Nos. 701-TA-487 and 731-TA-1198 (Final), USITC Pub. 4371 at 4-5 (Jan. 2013) and *Crystalline Silicon Photovoltaic Cells and Modules from China*, Inv. Nos. 701-TA-481 and 731-TA-1190 (Final), USITC Pub. 4360 at 40-41 (Nov. 2012).

[178] CR/PR at I-1.

[179] Calculated from CR/PR at Table IV-3.

[180] Calculated from CR/PR at Table IV-4.

circumstances determinations would not undermine seriously the remedial effect of the antidumping and countervailing duty orders.

The inventory data also do not support affirmative critical circumstances determinations. U.S. importers' end-of-period inventories of subject biaxial geogrid products were lower in interim 2016, at *** SY, than in interim 2015, at *** SY.[181] These data are inconsistent with the claim that U.S. importers were stockpiling biaxial geogrids from China after the January 2016 filing of the petition and confirm that the post-petition subject imports would not seriously undermine the remedial effect of the antidumping or countervailing duty orders.

We consequently do not find that the subject imports that entered the U.S. market after the petition filing would seriously undermine the remedial effect of the antidumping or countervailing duty orders that Commerce would issue. Consequently, we determine that critical circumstances do not exist with respect to subject imports of biaxial geogrid products from China covered by the affirmative critical circumstances determinations in Commerce's final antidumping and countervailing duty investigations.

Conclusion

For the reasons stated above, we determine that a domestic industry in the United States producing biaxial geogrid products is materially injured by reason of subject imports from China found to be sold in the United States at less than fair value and subsidized by the government of China. We also find that critical circumstances do not exist with respect to subject imports of biaxial geogrid products from China.

[181] CR/PR at Table VII-2. The record does not contain separate data on inventories of subject merchandise exported by TMP. In addition, U.S. importers' end-of-period inventory data was reported only on an aggregate basis for the first through third quarters of 2015 and 2016. Therefore, we use the information available – total end-of-period inventories of responding U.S. importers for the first three quarters of each year – in making our critical circumstances analysis for both the antidumping and countervailing duty investigations.

PART I: INTRODUCTION

BACKGROUND

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Tensar Corporation ("Tensar"), Morrow, Georgia, on January 13, 2016, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and less-than-fair-value ("LTFV") imports of certain biaxial integral geogrid products ("biaxial geogrid")[1] from China. The following tabulation provides information relating to the background of these investigations.[2] [3]

Effective date	Action
January 13, 2016	Petitions filed with Commerce and the Commission; institution of the Commission's investigations (81 FR 3157, January 20, 2016)
February 16, 2016	Commerce's notice of initiation of AD investigation (81 FR 7755); Commerce's notice of initiation of CVD investigation (81 FR 7745)
February 29, 2016	Commission's preliminary determinations (81 FR 11591, March 4, 2016)
June 24, 2016	Commerce's preliminary CVD determination and alignment of final determination with AD determination (81 FR 41292); amended (81, FR 48384, July 25, 2016)
August 22, 2016	Commerce's preliminary AD determination and postponement of final determination (81 FR 56584); scheduling of final phase of Commission's investigations (81 FR 63495, September 15, 2016); amended (81 FR 65672, September 23, 2016)
December 21, 2016	Commission's hearing
January 11, 2017	Commerce's final AD determination (82 FR 3284); Commerce's final CVD determination (82 FR 3282)
February 7, 2017	Commission's vote
February 24, 2017	Commission's views and determinations

[1] See the section entitled "The Subject Merchandise" in Part I of this report for a complete description of the merchandise subject to these investigations.

[2] Pertinent *Federal Register* notices are referenced in app. A, and may be found at the Commission's website (www.usitc.gov).

[3] A list of hearing witnesses is presented in app B.

STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

Statutory criteria

Section 771(7)(B) of the Tariff Act of 1930 (the "Act") (19 U.S.C. § 1677(7)(B)) provides that in making its determinations of injury to an industry in the United States, the Commission--

> *shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.*

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--[4]

> *In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.. . .In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the*

[4] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.

In addition, Section 771(7)(J) of the Act (19 U.S.C. § 1677(7)(J)) provides that—[5]

(J) EFFECT OF PROFITABILITY.—The Commission may not determine that there is no material injury or threat of material injury to an industry in the United States merely because that industry is profitable or because the performance of that industry has recently improved.

Organization of report

Part I of this report presents information on the subject merchandise and domestic like product. *Part II* of this report presents information on conditions of competition and other relevant economic factors. *Part III* presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. *Parts IV* and *V* present the volume of subject imports and pricing of domestic and imported products, respectively. *Part VI* presents information on the financial experience of U.S. producers. *Part VII* presents the statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury as well as information regarding nonsubject countries.

In the preliminary phase of these investigations, the Commission defined the domestic like product as encompassing in-scope biaxial geogrid and out-of-scope Tensar TriAx® geogrid ("triaxial geogrid")[6] as to injury. As a result, the questionnaires issued in these final phase investigations sought information on both product groups. For the purposes of presenting and analyzing data in subsequent parts of this report, the term "geogrid", when referenced by itself, will refer to biaxial geogrid and triaxial geogrid, but will not refer to any other type of geogrid not included in the definitions for biaxial geogrid and triaxial geogrid. The terms "biaxial geogrid" and "triaxial geogrid" will be used when referring to each product group separately. The tables and figures in subsequent parts of this report present data for biaxial geogrid and triaxial geogrid, unless otherwise specified.

MARKET SUMMARY

Biaxial geogrid is generally used in the construction of paved and unpaved roads, as well as in other construction projects, such as for reinforcing foundations or working platforms that are built on top of unstable soils. The leading U.S. producer of biaxial geogrid is Tensar, while

[5] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

[6] Triaxial geogrid is produced from an extruded polymer where the grid material has been stretched ("oriented") in three directions.

leading producers of biaxial geogrid in China are Taian Modern Plastic Co., Ltd ("TMP"), BOSTD Geosynthetics Quingdao Ltd. ("BOSTD"), Feicheng Lianyi Engineering Plastics ("Feicheng Lianyi"), and Tensar Geosynthetics China ("Tensar China")[7]. The leading U.S. importers of biaxial geogrid from China are ***. U.S. purchasers of geogrid are firms that distribute geosynthetic products and construction contractors; leading purchasers include distributors ***, some of which also import geogrid.

Apparent U.S. consumption of geogrid totaled *** square yards (*** in value) in 2015. Currently, two firms[8] are known to produce geogrid in the United States. U.S. producers' U.S. shipments of geogrid totaled *** square yards (***) in 2015, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. importers' U.S. shipments from China totaled *** square yards (***) in 2015 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. There were no U.S. imports from nonsubject sources in 2015.

SUMMARY DATA AND DATA SOURCES

A summary of data collected in these investigations is presented in appendix C, table C-1.[9] Except as noted, U.S. industry data are based on questionnaire responses of one firm that accounted for 100 percent of U.S. production of biaxial geogrid during 2015. U.S. import data are based on U.S importer's questionnaire responses from 14 firms that are believed to account for a large majority of U.S. imports of biaxial geogrid from China during January 2013 through September 2016.[10]

PREVIOUS AND RELATED INVESTIGATIONS

Biaxial geogrid has not been the subject of any prior countervailing and/or antidumping duty investigations in the United States.

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[7] Respondents' postconference brief, p. 45.

[8] Tenax Corporation ("Tenax"), based in Evergreen, Alabama, is another U.S. producer of biaxial geogrid. Tenax is believed to account for a small portion of U.S. production of biaxial geogrid. The majority of U.S. producer data in subsequent parts of this report is from Tensar as Tenax did not provide complete trade, financial or pricing data in its questionnaire response. Tenax's responses to narrative questions are noted where available.

[9] App. C presents summary data for all geogrids, as well as separate summary data for biaxial geogrid and triaxial geogrid.

[10] The Commission received U.S. importers' questionnaire responses from the same 13 firms that provided responses in the preliminary phase of these investigations as well as from one additional firm, ***. Commission staff issued importers' questionnaires to firms identified in the petition and to firms that were identified through a review of records provided by ***. Commission staff supplemented this list with a review of secondary sources to identify additional companies that may have business interests in biaxial geogrid.

NATURE AND EXTENT OF SUBSIDIES AND SALES AT LTFV

Subsidies

On January 11, 2017, Commerce published a notice in the *Federal Register* of its final determination of countervailable subsidies for producers and exporters of subject product from China.[11] Table I-1 presents Commerce's findings of subsidization of biaxial geogrid in China. Commerce determined the following programs in China to be countervailable:[12]

1. Policy Loans to the Geogrids Industry
2. Land-Use Rights for Less-Than-Adequate-Remuneration ("LTAR")
3. Electricity for LTAR
4. Income Tax Reduction for High and New Technology Enterprises ("HNTES")
5. Preferential Deduction of R&D Expenses for HNTES
6. High Tech Base Support Grant
7. Local Small and Medium Enterprise Program
8. Foreign Trade Promotion Fund
9. Product Line Change Grant
10. Provision of Polypropylene for LTAR
11. Plant and Equipment Provided for LTAR
12. Installment Plans for Land-Use Rights
13. Export Buyer's Credits from the Export Import Bank of China

[11] *Countervailing Duty Investigation of Certain Biaxial Integral Geogrid Products from the People's Republic of China: Final Affirmative Determination and Final Determination of Critical Circumstances*, in Part, 82 FR 3282, January 11, 2017.

[12] DOC, ITA, *Countervailing Duty Investigation of Certain Biaxial Integral Geogrid Products from the People's Republic of China: Issues and Decision Memorandum for the Final Affirmative Determination,* January 4, 2017, pp. 11-13.

Table I-1
Biaxial geogrid: Commerce's final subsidy determination with respect to imports from China

Entity	Final countervailable subsidy margin (*percent*)
BOSTD Geosynthetics Qingdao Ltd.	15.61
Taian Modern Plastic Co., Ltd	56.24
Chengdu Tian Road Engineering Materials Co., Ltd.	152.50
Chongqing Jiudi Reinforced Soil Engineering Co., Ltd.	152.50
CNBM International Corporation	152.50
Dezhou Yaohua Geosynthetics Ltd.	152.50
Dezhou Zhengyu Geosynthetics Ltd.	152.50
Hongye Engineering Materials Co., Ltd.	152.50
Hubei Nete Geosynthetics Ltd.	152.50
Jiangsu Dingtai Engineering Material Co., Ltd.	152.50
Jiangsu Jiuding New Material Ltd.	152.50
Lewu New Material Ltd.	152.50
Nanjing Jinlu Geosynthetics Ltd.	152.50
Nanjing Kunchi Composite Material	152.50
Nanyang Jieda Geosynthetics Co., Ltd.	152.50
Qingdao Hongda Plastics Corp.	152.50
Shangdong Dexuda Geosynthetics Ltd.	152.50
Shangdong Haoyang New Engineering Materials Co., Ltd.	152.50
Shangdong Tongfa Glass Fiber Ltd.	152.50
Shangdong Xinyu Geosynthetics Ltd.	152.50
Tai'an Haohua Plastics Co., Ltd.	152.50
Taian Hengbang Engineering Material Co., Ltd.	152.50
Taian Naite Geosynthetics Ltd.	152.50
Taian Road Engineering Materials Co., Ltd.	152.50
Tenax	152.50
Hengshui Zhongtiejian Group Co.	152.50
Qingdao Sunrise Dageng Import and Export Co., Ltd.	152.50
All others	35.93

Source: 82 FR 3282, January 11, 2017.

Sales at LTFV

On January 11, 2017, Commerce published a notice in the *Federal Register* of its final determination of sales at LTFV with respect to imports from China. [13] Table I-2 presents Commerce's dumping margins with respect to imports of biaxial geogrid from China.

Table I-2
Biaxial geogrid: Commerce's final weighted-average LTFV margins with respect to imports from China

Exporter	Producer	Final dumping margin (*percent*)
PRC-Wide Entity		372.81

Source: 82 FR 3284, January 11, 2017.

THE SUBJECT MERCHANDISE

Commerce's scope[14]

Commerce has defined the scope of this investigation as follows:

Biaxial integral geogrid products are a polymer grid or mesh material (whether or not finished, slit, cut-to-length, attached to woven or non-woven fabric or sheet material, or packaged) in which four-sided openings in the form of squares, rectangles, rhomboids, diamonds, or other four-sided figures predominate. The products covered have integral strands that have been stretched to induce molecular orientation into the material (as evidenced by the strands being thinner in width toward the middle between the junctions than at the junctions themselves) constituting the sides of the openings and integral junctions where the strands intersect. The scope includes products in which four-sided figures predominate whether or not they also contain additional strands intersecting the four-sided figures and whether or not the inside corners of the four-sided figures are rounded off or not sharp angles. As used herein, the term ''integral'' refers to strands and junctions that are homogenous with each other. The products covered have a tensile strength of greater than 5 kilonewtons per meter (''kN/m'') according to American Society for Testing and Materials (''ASTM'') Standard Test Method D6637/D6637M in any direction and average overall flexural stiffness of more than 100,000 milligram-centimeter according to the

[13] *Certain Biaxial Integral Geogrid Products from the People's Republic of China: Final Determination of Sales at Less Than Fair Value,* 82 FR 3284, January 11, 2017.

[14] *Certain Biaxial Integral Geogrid Products From the People's Republic of China: Affirmative Preliminary Determination of Sales at Less than Fair Value, Affirmative Determination of Critical Circumstances, in Part, and Postponement of Final Determination,* 81 FR 56584, August 22, 2016.

ASTM D7748/D7748M Standard Test Method for Flexural Rigidity of Geogrids, Geotextiles and Related Products, or other equivalent test method standards.

Subject merchandise includes material matching the above description that has been finished, packaged, or otherwise further processed in a third country, including by trimming, slitting, coating, cutting, punching holes, stretching, attaching to woven or nonwoven fabric or sheet material, or any other finishing, packaging, or other further processing that would not otherwise remove the merchandise from the scope of the investigations if performed in the country of manufacture of the biaxial integral geogrid.

The products subject to the scope are currently classified in the Harmonized Tariff Schedule of the United States (''HTSUS'') under the following subheading: 3926.90.9995. Subject merchandise may also enter under subheadings 3920.20.0050 and 3925.90.0000. The HTSUS subheadings set forth above are provided for convenience and U.S. Customs purposes only. The written description of the scope is dispositive.

Tariff treatment

Based upon the scope set forth by the Department of Commerce, information available to the Commission indicates that the merchandise subject to these investigations is imported under statistical reporting number 3926.90.9995[15] of the Harmonized Tariff Schedule of the United States ("HTS"), a basket category that covers articles of plastic not elsewhere specified or indicated. Covered merchandise may also be imported under HTS statistical reporting numbers 3920.20.0055 and 3925.90.0000.[16] General duty rates on these goods range from 4.2 to 5.3 percent ad valorem. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

THE PRODUCT

Description and applications

Biaxial geogrid is produced from an extruded polymer where the grid material has been stretched ("oriented") and possesses homogeneous or "integral" junctions. The term geogrid refers to materials primarily in earth reinforcement and stabilization applications. Geogrids are

[15] HTS subheading 2926.90.9995 will change to 3926.90.9996 in 2017.

[16] HTS subheading, 3920.20.0050, has no longer been in use since 2014. All products under that subheading were reclassified under the HTS subheading 3920.20.0055.

part of a broader category known as geosynthetics, which consist of a number of synthetic products used to solve various civil engineering and earth construction challenges.[17]

Geogrids can be categorized based on shape, which include uniaxial geogrids (oriented in one direction), biaxial geogrids (oriented in two directions), and triaxial geogrids (oriented in three directions). In a biaxial geogrid, the grid has been produced in a manner that creates quadrangular openings or apertures within the grid. The strands or "ribs" have working strength in two directions – longitudinal and transverse. The term integral means that the geogrid is a monolithic structure in which the junctions that connect the strands of the quadrangle are all a part of the same starting material. This is differentiated from other products, for example, which did not start from the same structure (are not integral), such as strands welded together. The term biaxial integral geogrid may also be referred to as a "homogeneous," "integral," "oriented," or "punched and drawn" geogrid.[18]

Uses for biaxial geogrid include applications such as building roadways, rural projects for subdivisions and land development, certain wall systems, marine mattresses, and other surface stabilization and reinforcement applications.[19] The most common use of the subject product is the construction of paved (usually asphalt) and unpaved roads.[20] The primary driver of demand for the product is road construction.[21] When a road is constructed, materials such as stone (aggregate) and asphalt are used. Biaxial geogrid holds the aggregate in place. The result is that less aggregate is required for construction, saving costs to a project. The product interlocks with aggregate to prevent lateral movement of the road and to increase the road's load-bearing capacity.[22]

Manufacturing processes

The typical production process for biaxial geogrid includes melting, extrusion, punching, stretching, winding and cutting.[23] Tensar begins production with a mixture of polymer of polypropylene resin pellets and black masterbatch, which are melted and extruded to form a sheet.[24] The purpose of the black masterbatch is to provide coloring and ultra-violet light protection to the blend.[25] Any recovered scrap is reintroduced into the melting and extrusion processes.[26] The manufactured sheet is passed through a punch press which makes quadrangular holes in the sheet. After the holes have been punched, the product goes through a machine called the "orienter," which heats the punched sheet and then pulls it in two

[17] Petition, p. 3.
[18] Petition, p. 4.
[19] Conference transcript, p. 39 (Witt), p. 42 (Coleman), and p. 49 (Gerrish); Petition, p.19.
[20] Petition, p. 19.
[21] Conference transcript, p. 46 (Brooks).
[22] Petition, p. 19.
[23] Petition, exh. I-48, Affidavit of ***.
[24] Conference transcript, p. 35 (Gee).
[25] Petition, exh. I-48, Affidavit of ***.
[26] Petition, exh. I-48, Affidavit of ***.

directions, lengthwise, also referred to as "longitudinal" or the "machine" direction, and then sideways, also referred to as the "cross-machine" or "transverse" direction. Because the material is stretched, it lengthens and widens the final product. Stretching also aligns the molecules in a homogenous chain-like pattern which results in greater strength to the product. This is important in downstream applications where the product will provide load-bearing capacity. After the product goes through the heated orienter machine, it goes through a cooling water bath. Next, the product goes through a winding machine and a cutter, which winds, cuts to length, spools in rolls, and wraps for shipment.[27]

The respondents state that their biaxial geogrid products are made of the same polymer as the petitioner's, which is polypropylene.[28]

The petitioner differentiates its manufacturing process of grid formation with that of other geotextiles. Specifically, it states that its grids are not the result of knitting, weaving, or welding together individual strands of strips of polymer. It claims that this is important because the extruded integral oriented geogrid produced by the petitioner has advantages in junction strength, tensile strength, junction efficiency, resistance to deformation, and stiffness.[29]

DOMESTIC LIKE PRODUCT ISSUES

Tensar contends that biaxial geogrid forms a distinct like product from the other types of geogrid which are not extruded, oriented or composed of integral junctions. Tensar argues that triaxial geogrid should not be considered part of the like product in these investigations since it has significant technological and physical differences from biaxial geogrid.[30] Respondents argue that the Commission should retain the like product definition it found in its preliminary determination.[31] The Commission found in the preliminary phase of these investigations that there is no clear dividing line between biaxial geogrid and triaxial geogrid as both products are made from the same raw materials, produced in the same facilities, frequently sold through the same channels of distribution, and are used in the same way in road construction. Based on these observations, the Commission preliminarily defined the domestic like product as consisting of biaxial geogrid and triaxial geogrid.[32]

In its views, the Commission stated that it would re-examine this issue and make its final determination based on several factors: (1) physical characteristics and uses; (2) common manufacturing facilities and production employees; (3) interchangeability; (4) customer and producer perceptions; (5) channels of distribution; and (6) price. Information regarding these factors is discussed below. The Commission stated it would closely review the manufacturing

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[27] Petition, exh. I-48, Affidavit of *** and conference transcript, pp. 34-36 (Gee).

[28] Conference transcript, p.161 (Dowdell) and p. 162 (Baisburd and Cashatt).

[29] Petition, exh. I-48, Affidavit of ***.

[30] Petitioner's prehearing brief, p. 11.

[31] Respondents' prehearing brief, pp. 3-22.

[32] *Certain Biaxial Geogrid Products from China*, *Inv. Nos. 701-TA-554 and 731-TA-1309 (Preliminary),* USITC Publication 4596, March 2016, p. 10.

processes of biaxial geogrid and triaxial geogrid. Additional trade and financial data concerning triaxial geogrid is presented in table C-3 in appendix C.

The Commission asked all U.S. producers, U.S. importers, U.S. purchasers and foreign producers to compare biaxial geogrid and triaxial geogrid. A tabulation of U.S. producers', U.S. importers' and U.S. purchasers' responses is presented in table I-3.[33] No foreign producer provided a response to the like product questions. U.S. producers' and U.S. purchasers' responses are summarized in the following sections. U.S. importers' responses are summarized in table D-1 in appendix D.

Table I-3
Geogrid: Comparison of biaxial geogrid with triaxial geogrid based on six domestic like product factors

Factor	U.S. producers				U.S. importers				U.S. purchasers			
	F	M	S	N	F	M	S	N	F	M	S	N
Physical characteristics and uses	***	***	***	***	3	4	3	0	5	3	9	2
Interchangeability	***	***	***	***	5	1	4	0	7	3	4	6
Manufacturing facilities and production employees	***	***	***	***	3	3	1	0	4	3	3	1
Channels of distribution	***	***	***	***	6	2	0	1	5	4	6	2
Customer and producer perceptions	***	***	***	***	1	7	1	0	3	6	7	2
Price	***	***	***	***	1	1	4	4	1	1	6	11

Note: F=fully comparable; M=mostly comparable; S=somewhat comparable; N=not at all comparable

Source: Compiled from data submitted in response to Commission questionnaires.

Physical characteristics and uses

Firms were asked to describe the differences and similarities in the physical characteristics and end uses between biaxial geogrid and triaxial geogrid. Tensar explains that triaxial geogrid is physically different from and is more technologically advanced than biaxial geogrid. While biaxial geogrid is comprised of strands that intersect to form rectangular or square apertures with radial stiffness along two axes, triaxial geogrid is comprised of strands that form triangular apertures and have high radial stiffness throughout the full 360 degrees of the geogrid plane.[34] The strands of triaxial geogrids also have different rib structure and profile from the strands comprising of biaxial geogrid.[35] These differences result in triaxial geogrid having improved performance, longer service life, and greater cost savings over biaxial geogrid. The triangular geometry and greater rib depth and unique rib structure of triaxial geogrids compared with biaxial geogrids result in an improved interlocking performance to hold

[33] Two U.S. producers, 10 U.S. importers and, 20 U.S. purchasers provided responses to the like product questions.

[34] Petitioner's prehearing brief, pp. 12-13.

[35] Ibid.

aggregate in place.[36] Purchaser *** notes that biaxial geogrid and triaxial geogrid perform the same function, but have differences in characteristics that must be evaluated based on the specific application.

Respondents argue that triaxial geogrid is like other biaxial geogrid products with the same uses, the only distinction being triangle-shaped openings rather than square or rectangle openings.[37] Respondents assert that triaxial geogrid by definition is a biaxial geogrid as the term "biaxial" does not refer to the shape of the apertures or the directions of the mesh in the geogrid, but rather refers to the fact that the geogrid is manufactured by pulling it in two directions.[38] At the molecular level, biaxial geogrid and triaxial geogrid are oriented in the same direction as the lines of their grids.[39] Triaxial geogrid is a newer version of biaxial geogrid and the term "triaxial" is simply a marketing term, not a technical one.

Purchaser *** states that road construction projects are routinely designed using either biaxial geogrid or triaxial geogrid and that an engineer's preferences usually determine which product is used. Oregon's Department of Transportation's ("DOT") Qualified Products List, under specification 02320.10, includes Tensar's triaxial geogrid as well as its biaxial geogrid type 2 (1200). Purchaser *** also notes that Kentucky, New Mexico, Oklahoma and the Port of Portland list biaxial geogrid and triaxial geogrid in a similar fashion. Purchaser *** states that since triaxial geogrid acts in a two dimensional manner in pavement application and is made of the same polymer, it belongs in the same class with biaxial geogrid. The only difference is that triaxial geogrid has triangular aperture shapes, which give it a different look.

Purchaser *** states that biaxial geogrid and triaxial geogrid are designed to stabilize and add strength to weak subgrade soils and for base course reinforcement. Purchaser *** notes that biaxial geogrid and triaxial geogrid are engineered for similar applications. Purchaser *** reports that while biaxial geogrid has been in the market for 25 years and has been thoroughly researched, tested and scrutinized, triaxial geogrid has not been extensively tested and has zero specifications. Purchaser *** notes that biaxial geogrid and triaxial geogrid cannot be compared because there are no approved specifications for triaxial geogrid.

Interchangeability

Tensar contends that because it has physical characteristics suited for specific uses, biaxial geogrid is not interchangeable with triaxial geogrid. One example is ***. ***.[40] Other examples include non-road and non-rail end uses in ***. Tensar also notes that only triaxial geogrid can be used for road optimization. Tensar asserts that attempting to substitute biaxial

[36] Petitioner's prehearing brief, p. 15.
[37] Respondents' prehearing brief, p. 5-9.
[38] Ibid, p. 7.
[39] Hearing transcript, p. 135 (Morris).
[40] Staff field trip report, Tensar Corporation, November 4, 2016.

geogrid for triaxial geogrid without substantially redesigning the project can have significant consequences.[41] Tensar cites ***.

Many state DOTs do not have specifications for the use of triaxial geogrid, or they classify it in a separate category from biaxial geogrid. Tensar notes that ***.[42] By contrast, ***. Due to these classifications, ***.[43]

Tensar notes that ***.[44] The reason, Tensar states, is that ***.[45] Purchasers *** state that biaxial geogrid cannot be substituted directly for triaxial geogrid unless design changes are made, such as the addition of more aggregate to pavement sections.

Respondents claim that biaxial geogrid and triaxial geogrid are interchangeable, and that Tensar itself considers the products to be interchangeable. They assert that it has been Tensar's goal to "transition" all of its markets from Tensar's other biaxial geogrid product to triaxial geogrid.[46] Respondents cite two open letters from Tensar in August 2009 and January 2010 endorsing the substitution of Tensar's "BX" line of biaxial geogrid products with triaxial geogrid "TX160". The January 2010 letter further stated that Tensar's strategy was to "transition all of our BX markets to TriAx."[47] Respondents assert that re-designs would be required not only for substituting triaxial geogrid with biaxial geogrid but also for any instance where an engineer substitutes one geogrid for another – for example, substituting Type 1 biaxial geogrid with Type 2 biaxial geogrid. Tensar's design software, SpectraPave4-PRO, allows an engineer to evaluate designs with triaxial geogrid or with rectangular biaxial geogrid in the same way that an engineer would evaluate whether to use a Type 1 or a Type 2 biaxial geogrid.[48]

Purchaser *** states that triaxial geogrid does not create or accomplish new, unique or innovative functions in pavement applications. Biaxial geogrid and triaxial geogrid benefit roadways in one or more of the following defined geosynthetic functions: separation, tension-membrane reinforcement, and confinement/lateral restraint. Triaxial geogrid is tested to index properties using the same ASTM and other agency testing standards used to test biaxial geogrid. Purchaser *** also notes that Tensar developed biaxial geogrid and triaxial geogrid for roadway applications. Producer *** notes that contractors routinely report interchangeability of these products without specifying any design or engineering changes.

Purchaser *** states that biaxial geogrid will perform equally as well in projects designed for triaxial geogrid, citing Tensar's own design software for biaxial geogrid products as evidence. Purchaser *** states that the two products are somewhat interchangeable, but it

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[41] Petitioner's prehearing brief, pp. 25-26.

[42] A tabulation of state and federal government specification/approved product list/special provision for biaxial geogrid and triaxial geogrid is presented in app. E. Petitioner's prehearing brief, pp. 22-23.

[43] Petitioner's prehearing brief, p. 27.

[44] Staff field trip report, Tensar Corporation, November 4, 2016.

[45] Ibid.

[46] Respondents' prehearing brief, pp. 12-13.

[47] Ibid, p. 13.

[48] Hearing transcript, p. 135 (Morris).

considers triaxial geogrid to be a more expensive and an inferior product to biaxial geogrid. The company also believes triaxial geogrid is a marketing gimmick.

Manufacturing facilities and production employees

Tensar states that while biaxial geogrid and triaxial geogrid can be produced on the same production line; there are vast differences in the production process for the two products.[49] It can take up to 18 to 24 hours, to reconfigure, retool and recalibrate the machinery to change production between biaxial geogrid and triaxial geogrid.[50] In order to maximize efficiency and minimize the downtime associated with switching between biaxial geogrid and triaxial geogrid, Tensar schedules "campaigns" of production during which it will produce one product extensively for approximately three to ten days at a time.[51]

Tensar notes that ***.[52] ***. ***.[53] ***.

***.[54] Tensar also points out ***. Tensar notes that ***.[55] ***.[56]

***.[57] Tensar ***.[58] ***.

***.[59] ***. Tensar states that ***.[60] Tensar estimates that ***.[61]

Tensar states that ***. Tensar notes that ***.[62] Tensar states that ***.[63] ***.

Respondents claim that Tensar's differences in production are relatively minor and that Tensar's efforts to ***, demonstrates that ***.[64] The tooling of the punching machine is assembled as a "cassette" and changing from one grade to another or from rectangular or triangular apertures only requires switching the "cassette." Respondents assert that while ***, these products ***.[65] Finally, respondents state that beveled rollers have been employed on biaxial geogrid for more than 30 years. In addition, beveled rollers are used in the winding stage, and not the basic manufacture of both products.[66]

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[49] Conference transcript, p.52 (Gerrish).
[50] Hearing transcript, p. 54 (Shelton).
[51] Hearing transcript, p. 89 (Shelton).
[52] Petitioner's prehearing brief, p. 29.
[53] Ibid, p. 30.
[54] Ibid.
[55] Petitioner's prehearing brief, p. 30.
[56] Ibid, p. 32.
[57] Ibid, p. 33.
[58] Staff field trip report, Tensar Corporation, November 4, 2016.
[59] Ibid.
[60] Ibid.
[61] Petitioner's prehearing brief, p. 29.
[62] Staff field trip report, Tensar Corporation, November 4, 2016.
[63] Ibid.
[64] Respondents' prehearing brief, p. 10.
[65] Ibid, p. 12.
[66] Respondents' postconference brief, pp. 6-8.

Purchaser *** notes that Tensar produces biaxial geogrid and triaxial geogrid in the same facility in Morrow, Georgia by utilizing polypropylene resins. The traditional manufacturing lines require relatively minor modification of punch patterns when shifting production from one product to the other. Purchaser *** believes that the basic machinery used in the manufacturing process is the same for both products. Aside from operators assigned to specific lines to manage operating efficiencies and line throughput, biaxial geogrid and triaxial geogrid production benefit from common economies of scale and shared warehouse, lab and administrative support employees. Purchaser *** notes that the production process for these products is identical, except for the molding.

Channels of distribution

Tensar holds a U.S. patent on triaxial geogrid, which gives it the exclusive right to produce and sell the product in the United States.[67] Tensar states that biaxial geogrid and triaxial geogrid are sold and marketed differently. For example, biaxial geogrid is supplied through "private label" arrangements, while triaxial geogrid is not.[68] In addition, Tensar and its distributors provide different services depending on the type of geogrid. All sales of triaxial geogrid are supplied with the technical support services of Tensar, which can include design, technical and installation guidance on all projects.[69] Purchaser *** notes that triaxial geogrid is sold through a distribution network with specification and engineering abilities not required for the sale of biaxial geogrid.

Respondents state that the channels of distribution are the same for both products. Tensar sells triaxial geogrid through its network of exclusive, authorized, and regional distributors. These distributors are the same for Tensar's biaxial geogrid products.[70] The only difference is that Tensar *** but ***.

Producer *** and purchaser *** state that biaxial geogrid and triaxial geogrid are sold through the same distribution network. Purchaser *** notes that distributors typically fall into two classes: geo supply and concrete accessories. Geo supply companies focus largely on site development products. Concrete accessory suppliers tend to be large companies with a broader spectrum of products, including vertical construction. Purchaser *** notes that with the expiration of Tensar's patent, biaxial geogrid is now broadly available to distributors throughout the market. However, triaxial geogrid is sold exclusively through Tensar regional distributors or with Tensar's pre approval.

Purchaser *** believes Tensar is moving more towards selling triaxial geogrid directly to end users. Purchaser *** notes that Tensar's method of distribution depends on the scale of the project. For larger projects, Tensar will usually cut out the distributor and sell its product

[67] Petitioner's prehearing brief, p. 29.

[68] Petitioner's prehearing brief, p. 28. A more detailed breakout of Tensar's U.S. commercial shipments by channels of distribution is presented in part II.

[69] Ibid, pp. 28-29.

[70] Respondents' prehearing brief, p. 17.

directly. Purchasers *** states that biaxial geogrid and triaxial geogrid are sold through distribution networks and, on occasion, direct to end users. Purchaser *** notes that both products are sold through the same distribution channel to the same customers, typically earthwork contractors. Purchaser *** states that biaxial geogrid is sold through open distribution networks while triaxial geogrid is only available through Tensar's distribution network.

Customer and producer perceptions

Tensar states that customers perceive triaxial geogrid to be a distinct product from biaxial geogrid, as evidenced by the different specifications and requirements issued by the public works departments of state and local governments.[71] Furthermore, biaxial geogrid is displayed separately from triaxial geogrid in company brochures and other informational materials and in technical guidelines.[72] Tensar states that industry experts recognize that triaxial geogrids have significantly different physical and mechanical properties and perform differently than biaxial geogrid.[73] Tensar also states that it has won numerous awards and distinctions for the development of triaxial geogrids as a significant innovation of a new geosynthetic product, including the International Geosynthetic Society's five-year award, which Tensar won in 2010.[74] Purchaser *** states it informs its customers of the performance differences between triaxial geogrid and biaxial geogrid and that companies that only sell biaxial geogrid make promises of equivalent performance that are unsupported by data.

Respondents state that customers perceive triaxial geogrid as another biaxial geogrid product. They cite numerous bid documents listing triaxial geogrid products together with other biaxial geogrid products as acceptable alternatives.[75] Triaxial geogrid is listed alongside other biaxial geogrid in standard specifications for the Oregon Department of Transportation and the City of Victoria, Texas.[76]

Producer *** notes that most consumers perceive triaxial geogrid more as a marketing device rather than a true innovation, citing consumers' poor conversion and adoption rate away from biaxial geogrid. Purchaser *** states that many state DOTs and design engineers view these products as interchangeable and notes that an individual engineer's preference or a manufacturer's proprietary design software usually determines which product is used in projects. Purchaser *** states that biaxial geogrid and triaxial geogrid are sold for the same types of projects, structures and applications. Contractors installing the materials prefer traditional square products because they are stronger and more effectively interlock the rock. Purchaser *** also notes that it is able to substitute biaxial geogrid for triaxial geogrid, citing technical data showing that the two products are comparable.

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[71] Petitioner's prehearing brief, p. 34.
[72] Ibid.
[73] Hearing transcript, p. 51 (Gerrish), Petitioner's posthearing brief, exh. 1, pp. 1-2.
[74] Petitioner's prehearing brief, p. 35.
[75] Respondents' prehearing brief, pp. 18-19.
[76] Ibid, p. 18.

Purchaser *** notes that marketing from Tensar leads engineers to perceive triaxial geogrid as a superior product to biaxial geogrid even through Tensar has successfully marketed biaxial geogrid as the solution to engineer's soil stabilization challenges. Purchaser *** states that engineering projects originally designed for triaxial geogrid can be redesigned to accommodate biaxial geogrid. Purchaser *** notes that some customers see biaxial geogrid as more valuable than triaxial geogrid due to familiarity and price.

Price

Tensar explains that triaxial geogrid is priced *** than biaxial geogrid.[77] Tensar's average commercial shipment unit value for biaxial geogrid was between $*** and $*** during the period examined and its average commercial shipment unit value for triaxial geogrid was between $*** and $***. Respondents argue that it is not appropriate to consider price dispositive because the price premium paid for triaxial geogrid is a function of factors other than any dissimilarity in triaxial geogrid from other biaxial geogrid products.[78]

Producer *** notes that prices for triaxial geogrid are considerably higher. Purchaser *** states that because of its long-term patent, Tensar has set high prices for its biaxial geogrid and is adopting a similar pricing scheme for its triaxial geogrid. Purchaser *** states that the price of the two products can vary depending on the nature of the project and notes that there has been competition between biaxial geogrid and triaxial geogrid for specific projects at similar price levels. Purchaser *** notes that biaxial geogrid is less expensive than triaxial geogrid due to the availability of other biaxial geogrid products in the market.

[77] Petitioner's prehearing brief, p. 36. Tensar's prices for biaxial geogrid and triaxial geogrid are presented in part V.

[78] Respondents' prehearing brief, pp. 20-22.

PART II: CONDITIONS OF COMPETITION IN THE U.S. MARKET

U.S. MARKET CHARACTERISTICS

Geogrid is used mainly in trafficked areas, particularly public and private paved and unpaved roadways. It is also used to reinforce foundations and for construction platforms. Roads and platforms utilizing geogrid are used in a variety of applications including airports, parking lots, residential streets, marine, mining, oil and gas, and petrochemical applications.[1]

Geogrid is used in only a small proportion of roads and other applications where it could be used, with nationwide utilization estimates ranging from 5 to 10 percent.[2] The utilization rate varies in different regions, based on the relative cost of alternative products. For example, Texas has a relatively high utilization rate with about 20 percent of road building using geogrid and 80 percent using other methods, such as chemical stabilization.[3]

Tensar held a patent on biaxial geogrid until May 2012.[4] In anticipation of the patent expiration, Tensar prepared for additional market entrants by reducing prices and growing its sales and distribution network.[5] Respondents assert that Tensar's exclusivity had constrained growth in the geogrid market because sole-sourcing is discouraged in procurement for public projects.[6]

Tensar sells its branded biaxial and triaxial geogrid through its authorized distributor network. Tensar's exclusive distributors have the rights to distribute Tensar-branded product in particular states or areas of states.[7] Outside of their designated regions, these distributors may sell non-Tensar geogrid.[8]

Tensar also sells biaxial geogrid, but not triaxial geogrid, to distributors that put their own private label brands on the product. It started its private label program to open up different channels of distribution and broaden its market reach as its biaxial geogrid patent was expiring.[9] According to Respondents, Tensar's private label program initially was limited to a

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[1] Conference transcript, p. 95 (Lawrence), p. 120 (Dowdell). ***. Respondents' postconference brief, p. 31 and exh. 22.

[2] *** reported that geogrid is used in about 10 percent of road surfacing and stabilization applications. Hanes estimates that the nationwide utilization rate is 5 percent. Conference transcript, p. 122 (Dowdell). Respondents' prehearing brief, p. 33.

[3] Conference transcript, p. 104 (Witt).

[4] Conference transcript, pp. 24-26 (Lawrence). Tensar started reducing its biaxial geogrid prices beginning in 2011. Hearing transcript, pp. 104-105 (Gerrish).

[5] Petitioner's postconference brief, pp. 30-31.

[6] Respondents' postconference brief, p. 16.

[7] Conference transcript, p. 70 (Gerrish). Tensar selects its distributor partners based on ***. Petitioner's postconference brief, exh. 104.

[8] Conference transcript, p. 70 (Gerrish), p. 71 (Brooks).

[9] Conference transcript, p. 70 (Gerrish). Petitioner's posthearing brief, pp. 50-51.

single private label distributor, Syntec.[10] ***. Tensar provides no service support for its private label geogrid, limited support for its branded biaxial geogrid, and more extensive support services for its patented triaxial product.[11]

Most Chinese product is imported and sold by distributors under the distributors' brands although a small portion of imports are branded in China.[12] Distributors that sell their own brands may source from multiple suppliers including both Tensar and Chinese sources.[13] For example, Hanes uses three different suppliers for its private-label "Terragrid" product. Hanes noted that it does not commingle product from different sources on the same project since there can be minor product differences such as aperture size.[14] Hanes reported that Chinese producers have provided technical support in developing Hanes' design software and in product testing.[15] Respondents also stated that distributors such as Hanes and Hill Country provide service to customers that Tensar no longer provides on its biaxial geogrid.[16]

Although geogrid is produced to a number of different specifications, most sales of domestic and imported biaxial geogrid are Type 1 or Type 2. Because of its greater thickness and higher tensile strength, Type 2 offers higher performance and is more expensive than Type 1, although prices between the two have reportedly narrowed.[17] Importer *** noted that sales have shifted from Type 1 to Type 2 as prices for both types have come down. In addition, it reported that sales of square (also known as "balanced") grids have increased.[18]

The majority of sales of biaxial geogrid are for public projects, in which material use is dictated by Department of Transportation ("DOT") specifications. Private projects, however, have more flexibility to use different methods for road stabilization.[19] Biaxial geogrid is included

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[10] Hearing transcript, p. 117 (Dowdell). Hanes stated that it was unable to purchase geogrid from Tensar until 2015. Hearing transcript, p. 119 (Dowdell).

[11] Conference transcript, p. 83 (Gee). Petitioner's prehearing brief, pp. 28-29.

[12] Conference transcript, p. 145 (Dowdell).

[13] Conference transcript, p. 145-148 (Dowdell, Cashatt, and Frey).

[14] Conference transcript, p. 146 (Dowdell).

[15] Hearing transcript, p. 120 (Dowdell).

[16] Respondents' prehearing brief, pp. 38-40.

[17] Tensar sent letters to its customers in 2009 and 2010 stating that it would discontinue regular production of Type 2 biaxial geogrid and that customers would be asked to use its triaxial geogrid instead. Tensar stated that soon after it tried to make Type 2 a special order product, it reversed its decision. Petitioner asserts that the decision to discontinue Type 2 biaxial geogrid production and reversal of that decision occurred well before the current period of investigation and that Tensar has remained committed to the biaxial geogrid market. Tensar further stated that it has remained committed to selling biaxial geogrid. Conference transcript, pp. 78-79 (Gee). Petitioner's postconference brief, p. 1 and exh. 104, and petitioner's posthearing brief, p. 10. Respondents' posthearing brief, exh. 2, letter from Tensar.

[18] Importer *** reported that square grids offer the same performance as Type 1 and Type 2, but are less expensive because they use less polypropylene. It stated that both square and standard rectangular grids meet the Texas DOT specification. *** importer questionnaire response at III-16.

[19] Conference transcript, p. 105, 110 (Brooks). Private projects trend toward triaxial geogrid in Texas and public projects toward biaxial geogrid. Conference transcript, p. 111 (Witt).

in most state DOT specifications, and counties and cities typically follow state specifications.[20] Although some customers prefer American-made product, sales for public projects are generally not subject to the Buy America Act.[21] For public projects, in order to substitute triaxial geogrid for biaxial geogrid, the state specifications must list triaxial geogrid, whereas there may be more flexibility for private projects.

Apparent U.S. consumption of geogrid increased from 2013 to 2015. Overall, apparent U.S. consumption in 2015 was *** percent higher than in 2013, with nearly all of the increase occurring between 2014 and 2015. Apparent U.S. consumption was *** percent lower in January-September 2016 compared to January-September 2015.

U.S. PURCHASERS

The Commission received 24 usable questionnaire responses from firms that have purchased geogrid since January 2013.[22] All firms reported purchasing biaxial geogrid, and 12 purchasers also reported purchasing triaxial geogrid. In addition to purchasing geogrid from U.S. producers and/or importers, four responding purchasers *** also imported geogrid (see part IV). Twenty-two responding purchasers are distributors and two are end users. The largest responding purchasers, based on purchases of geogrid in 2015, were ***. Competition has increased in the geogrid market since expiration of Tensar's patent, as the number of distributors having access to the product has increased and therefore, more distributors will bid on a given project.[23]

CHANNELS OF DISTRIBUTION

U.S. producer Tensar and U.S. importers sold a majority of geogrid to distributors rather than end users/contractors (table II-1). For Tensar, *** of U.S. commercial shipments were to distributors. Importers of Chinese geogrid sold most (about ***) of their shipments to distributors, and sold a higher share to end users than did Tensar.

Table II-2 shows a more detailed breakout of Tensar's U.S. commercial shipments by channels of distribution, showing separate lines for shipments of biaxial and triaxial geogrid, and for shipments to distributors of branded versus private label biaxial geogrid. Tensar's private label shipments were higher in 2015 than in 2013, and accounted for *** of Tensar's shipments of biaxial geogrid in 2015.

[20] Conference transcript, p. 25 (Lawrence), p. 61 (Gee).

[21] Conference transcript, p. 112 (Gee).

[22] Of the 24 responding purchasers, 21 purchased the domestic product, 7 purchased imports of the subject merchandise from China, and 3 purchased product from unknown sources.

[23] Hearing transcript, p. 175 (Dowdell).

Table II-1
Geogrid: Tensar's and importers' U.S. commercial shipments, by sources and channels of distribution, January 2013-September 2016

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Table II-2
Geogrid: Tensar's U.S. commercial shipments, by channel of distribution, January 2013-September 2016

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GEOGRAPHIC DISTRIBUTION

U.S. producers and importers reported selling geogrid to all regions in the United States (table II-3). For U.S. producer Tensar, *** percent of sales were within 100 miles of its production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. ***. U.S. importers sold 26 percent within 100 miles of their U.S. point of shipment, 41 percent between 101 and 1,000 miles, and 33 percent over 1,000 miles.

SUPPLY AND DEMAND CONSIDERATIONS

U.S. supply

Domestic production

Based on available information, U.S. producer Tensar has the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced geogrid to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and inventories, exports to other markets, and possible ability to produce alternate products.

Industry capacity

Tensar's capacity utilization decreased from *** percent in 2013 to *** percent in 2015. Capacity utilization was *** percent in interim 2016 compared to *** percent in interim 2015. ***. This relatively low level of capacity utilization suggests that Tensar may have a substantial ability to increase production of geogrid in response to an increase in prices.

Table II-3
Geogrid: Geographic market areas in the United States served by U.S. producers and importers

Region	U.S. producers	Subject U.S. importers
Northeast	***	10
Midwest	***	10
Southeast	***	10
Central Southwest	***	11
Mountains	***	10
Pacific Coast	***	10
Other[1]	***	5
All regions (except Other)	***	9
Reporting firms	***	13

[1] All other U.S. markets, including AK, HI, PR, and VI.

Source: Compiled from data submitted in response to Commission questionnaires.

Alternative markets

Tensar's exports, as a percentage of total shipments, decreased from *** percent in 2013 to *** percent in 2015. Export shipments were *** percent in interim 2016 compared to *** percent in interim 2015. Tensar's principal export markets are ***. Tensar reported that demand in ***.

The level of Tensar's exports indicates that Tensar may have some ability to shift shipments between the U.S. market and other markets in response to price changes.

Inventory levels

Tensar's inventories, as a ratio to total shipments, increased from *** percent in 2013 to *** percent in 2014 and then declined to *** percent in 2015. During interim 2015 and interim 2016, the ratio was *** percent and *** percent, respectively. These inventory levels suggest that Tensar may have a substantial ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

Tensar stated that it was *** to switch production between different types of geogrid and/or products other than geogrid. ***.

Subject imports from China[24]

Based on very limited available information, Chinese producers of biaxial geogrid have the ability to respond to changes in demand with large changes in the quantity of shipments of biaxial geogrid to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the large production capacity.

According to Tensar, total capacity in China is estimated to be over *** square yards[25] as compared to U.S. producer Tensar's capacity of *** square yards. Respondents assert that capacity in China is lower and that there are four major producers in China, rather than the 75 firms estimated by Tensar.[26] Tensar stated that demand in China for geogrid has declined and is likely to continue to decline because of a general slowdown in the Chinese economy and a decrease in infrastructure projects.[27]

Nonsubject imports

There were no reported imports of geogrid from nonsubject countries during 2013-15. During January-September 2016, there were nonsubject imports from ***, which accounted for *** percent of total imports.

Supply constraints

*** reported *** supply constraints since January 1, 2013. Eleven of 13 responding importers reported no supply constraints. However, importer *** reported difficulty procuring biaxial geogrid from Tensar's distributors and from importers, and that even after it began importing directly from China, it has lost orders due to availability and product mix. Importer *** reported that long transit times from China affected its supply.

Most purchasers (20 of 23) also reported no supply constraints. However, three purchasers, ***, reported constraints. These firms reported that Tensar and Tensar's distributors have refused to sell to them or have tightly controlled the supply. ***. *** stated that Tensar's geogrid was not immediately available after the patent expiration, and that imports offered an alternative. *** also stated that Tensar stipulated that supply would be available only in a sole-sourced agreement.

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[24] Only one Chinese producer, Tensar China, which is believed to account for a small share of total Chinese production of biaxial geogrid, responded to the Commission's foreign producer questionnaire in the final phase investigations. Chinese producer Feicheng Lianyi provided a response in the preliminary phase but did not respond in the final phase (see part VII).

[25] Petitioner's prehearing brief, p. 76.

[26] Hanes estimates that ***. Respondents' posthearing brief, pp. 12-13; app. 1, p. 5; and exh. 7.

[27] Petitioner's prehearing brief, pp. 87-88.

New suppliers

Nine of 24 purchasers indicated that new suppliers entered the U.S. market since January 1, 2013. Purchasers named Chinese producers BOSTD and TMP, Greek producer Thrace, and importers and distributors Alliance, E. Grid, GSE, Hanes, NW Linings, and Synteen.

U.S. demand

Based on available information, the overall demand for geogrid is likely to experience moderate changes in response to changes in price. The main contributing factor to increased responsiveness is the availability of substitute products, but the small cost share of geogrid in the total cost of construction projects and the time between a project engineering design and the start of construction decreases responsiveness.

End uses

U.S. demand for geogrid depends on the demand for U.S.-produced downstream products. The major end use for geogrid is in the construction of roads; geogrid reduces the amount of aggregate needed and increases the road's load bearing capacity. Geogrid is also used in other construction projects, such as reinforcing foundations or working platforms built on top of unstable soils.[28] The major demand drivers for geogrid are public spending on highways and roads, and private construction spending for streets, housing developments, and parking lots.[29] Geogrid is also used in other trafficked surfaces such as airports, ports, and railways and for road construction in the energy and mining sector.[30]

Cost share

Geogrid accounts for a small share of the overall project cost for road construction and other uses.[31] Firms reported cost shares ranging from one to 24 percent. Purchaser *** estimated that the cost was 1 percent for stabilization. Importer *** reported 3 percent for base reinforcement and 3 percent for subgrade improvement. Importer *** reported 20 percent for road stabilization and base reinforcement and 2 percent for mechanically stabilized earth walls. Importer *** reported 4 percent for paved roads and 7 percent for unpaved roads. Importers *** reported 10 percent for road stabilization. Importer *** reported 24 percent in paver edge restraints. Hanes noted that the cost of geogrid is often a minor component of the overall cost of a construction project, and that labor is a much largest cost.[32]

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[28] Petition, p. 19.

[29] Conference transcript, p. 31 (Gee). Petitioner's prehearing brief, p. 41.

[30] Respondents' prehearing brief, pp. 35-36.

[31] Conference transcript, p. 121 (Dowdell). Respondents' prehearing brief, pp. 36-37.

[32] Because of high labor costs, on-time delivery of geogrid is important to contractors. Hearing transcript, p. 179 (Dowdell).

Business cycles

***, 10 of 13 responding importers, and 14 of 23 responding purchasers indicated that the market was subject to business cycles. Firms noted seasonal demand with reduced construction in winter in northern climates, since cold weather impacts both construction schedules and soil conditions, and also increased use of geogrid in wet seasons. Importers *** reported that most geogrid sales are during March to October or November.

***, 5 of 10 responding importers, and 9 of 15 responding purchasers reported changes in business cycles or other conditions of competition. *** reported the entry of Chinese geogrid into the market. Importers noted continued price erosion; more imports approved for use in U.S. projects; and that the patent expiration has led to the entrance of Asian producers, new distribution channels, and increased use of geogrid in the U.S. market. Among purchasers, firms noted increased competition and lower prices in the geogrid market and drier winters extending the season in California.

Demand trends

Most firms reported an increase or no change in U.S. demand for geogrid since January 1, 2013 (table II-4). Factors cited by firms as driving increased demand include the economic recovery and increased infrastructure spending, as well as more customers using geogrid in road construction. Tensar also reported that prices of aggregate and stone have increased, and using geogrid reduces the amount of aggregate needed. Many importers reporting increased demand reported that the lower prices and increased availability of biaxial geogrid since the patent expiration has increased demand for the product. *** reported that the market for geogrid is growing at about 5 to 7 percent per year. ***, on the other hand, described the market as mature with an oversupply of material.

According to Tensar, demand in the geogrid market increased during 2013-15, with particularly robust growth in 2015 as a result of post-recession construction activity in both the residential and industrial markets.[33] Respondents state that lower geogrid prices and availability from multiple sources has increased the usage of geogrid rather than design alternatives, and that increased funding for roads has also increased demand.[34]

Tensar and Respondents indicated that they expect additional growth over the next few years with new spending on roads with the Fixing America's Surface Transportation Act (the "FAST" Act) that was signed into law in December 2015.[35] Tensar stated that demand has declined slightly in 2016 and that it expects stable to modest growth in 2017.[36] It also stated

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[33] Petitioner's prehearing brief, pp. 41-42.

[34] Respondents' prehearing brief, pp. 32-36.

[35] Conference transcript, pp. 26-27 (Lawrence). Respondents' prehearing brief, p. 25 and exh. 18. Tensar expects single digit growth in the geogrid market. Hearing transcript, p. 100 (Lawrence).

[36] Hearing transcript, pp. 100-101 (Edgecombe and Gerrish). Petitioner's prehearing brief, pp. 42-43, and exh. 8, citing projections by American Road and Transportation Builders Association (ARTBA) of transportation construction growth estimates of 1.3 percent from 2016 to 2017. ARTBA also notes that

(*continued*...)

the major drivers of demand for geogrid are the level of growth in the U.S. economy and the level of road construction activity[37] and ***.[38] Hanes stated that the passage of the FAST Act has improved the market for infrastructure products including geogrid.[39] Respondents also stated that since the patent protection expired, demand for biaxial geogrid has replaced design alternatives such as chemical stabilization using lime.[40]

With respect to demand outside the United States, *** reported that demand in Canada has declined with a decrease in road building related to reduced oil and gas exploration and lower overall infrastructure spending. It also reported that demand is expected to be lower in China because of decreased economic growth, reduced infrastructure spending, and recent financial crises. Tensar's representative stated demand in the Chinese market continues to increase, but at a slower rate than in previous years.[41]

Table II-4

Geogrid: Firms' responses regarding U.S. demand and demand outside the United States

Item	Number of firms reporting			
	Increase	No change	Decrease	Fluctuate
Demand inside the United States: U.S. producers	***	***	***	***
Importers	5	4	1	2
Purchasers	9	5	2	5
Demand outside the United States: U.S. producers	***	***	***	***
Importers	0	2	1	2
Purchasers	0	1	0	2
Demand for purchasers' final products: Purchasers	0	3	1	1

Source: Compiled from data submitted in response to Commission questionnaires.

Substitute products

A majority of firms, (including ***, 6 of 10 responding importers and 14 of 22 responding purchasers) reported that there were substitutes for geogrid. Substitutes for geogrid include using additional aggregate, rock, or asphalt; woven and other geotextiles; and chemical stabilization. Design engineers can use geogrid or alternatives such as lime, cement, or

(…*continued*)

many state DOTs did not obligate their FAST Act federal funding in time for projects to get started during the 2016 construction season, and also noted that federal transportation funding has been delayed because of the continuing resolution.

[37] Petitioner's posthearing brief, exh. 1, p. 49.

[38] Petitioner's posthearing brief, exh. 1, p. 18.

[39] Hearing transcript, pp. 125-126 (Dowdell).

[40] Conference transcript, p. 125 (Dowdell).

[41] Hearing transcript, pp. 91-92 (Lawrence).

use additional rock.[42] The use of geogrid can save contractors costs on aggregate, asphalt, and other materials, for which prices have gone up significantly since 2012.[43] However, the feasibility and use of alternative products versus geogrid depends on the location; for example, some regions have greater availability and lower prices of rock.[44]

*** stated that the use of woven/knitted/welded geotextiles in roadway applications has declined to near zero because of performance issues with these geotextiles. It also reported that aggregate and stone prices have increased significantly. Among purchasers, three (***) reported that changes in the prices of substitutes have affected geogrid prices. *** stated that as geotextile prices fall, geogrid prices would need to decrease to be competitive. *** stated that asphalt prices as well as the prices of geotextiles made from polypropylene have fallen with oil prices. *** stated that depending on the site conditions, the costs of using additional rock, chemical stabilization, or other geosynthetics can be less than the installed cost of geogrids. In addition, importers *** reported that woven geotextiles are priced lower and have affected geogrid prices. Tensar and Respondents reported that use of other geotextiles in roadways had declined greatly, with Respondents reporting that declining geogrid prices were a reason.[45]

Using substitute products may require re-engineering the project design.[46] Construction plans are prepared before the contract is awarded, and it could take from six months to a couple of years before a project is underway.[47] Industry participants reported that designs may be done several years in advance, and it can be an "arduous process" to get a design changed.[48]

SUBSTITUTABILITY ISSUES

The degree of substitution between domestic and imported biaxial geogrid depends upon such factors as relative prices, quality (e.g., specifications, reliability of supply, defect rates, etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, payment terms, product services, etc.). Based on available data, staff believes that there is a moderate to high degree of substitutability between domestically produced geogrid and subject imported geogrid.

Lead times

Geogrid is primarily sold from inventory. Tensar reported that *** percent of its commercial shipments were from inventories, with lead times averaging *** days, and *** percent were produced-to-order with lead times averaging *** days. Tenax reported that ***

[42] Conference transcript, p. 122 (Dowdell). Respondents' prehearing brief, pp. 32-33.
[43] Conference transcript, p. 31 (Gee).
[44] Conference transcript, p. 108 (Gee). Hearing transcript, pp. 172-174 (Cashatt).
[45] Respondents' prehearing brief, p. 33, and Respondents' postconference brief, p. 24.
[46] Conference transcript, p. 51 (Gee, Lawrence).
[47] Conference transcript, p. 65-66 (Gee).
[48] Conference transcript, p. 66 (Brooks).

percent of its sales were from inventory with an average lead time of *** and *** percent were produced-to-order with an average lead time of ***.

Importers reported that 97 percent of shipments were from U.S. inventories with six importers reporting lead times of one to 10 days, and two reporting lead times of 90 days. Importers' lead times for produced-to-order product and from foreign inventories averaged 49 days and 55 days, respectively. Distributors maintain inventories of geogrid, with one distributor, ACF, reporting that 70 to 80 percent of its business turns in a day; although for large projects, geogrid may be shipped directly from the producer to the customer.[49] Hanes also noted the importance of stocking import inventories to be able to respond to next day delivery requests from contractors.[50] Respondents assert that long lead times from China to the U.S. market, and the related high carrying costs of maintaining inventories, provides Tensar an advantage over Chinese manufacturers in sales to the private label market.[51]

Knowledge of country sources

Twenty-one purchasers indicated they had marketing/pricing knowledge of domestic product, 13 of China product, and 1 of nonsubject countries.

As shown in table II-5, most purchasers "always" or "usually" make purchasing decisions based on the producer but less often based on the country of origin. Most purchasers reported that their customers "sometimes" or "never" make decisions based on producer or country. Purchasers that reported that they always make decisions based on the manufacturer cited relationship with supplier, price, quality, and schedule as reasons.

Table II-5
Geogrid: Purchasing decisions based on producer and country of origin

Purchaser/Customer Decision	Always	Usually	Sometimes	Never
Purchaser makes decision based on producer	9	6	5	4
Purchaser's customers make decision based on producer	1	3	12	8
Purchaser makes decision based on country	6	5	7	5
Purchaser's customers make decision based on country	0	1	13	8

Source: Compiled from data submitted in response to Commission questionnaires.

Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for geogrid were price (22 firms), quality/specifications (21 firms), and availability (13 firms) as shown in table II-6. Price was the most frequently cited first-most important factor (cited by 9 firms), followed by quality/specifications (8 firms); availability was the most frequently reported

[49] Conference transcript, pp. 92-94 (Witt, Brooks, and Coleman).
[50] Hearing transcript, p. 151 (Dowdell).
[51] Respondents' prehearing brief, pp. 29-30.

second-most important factor (8 firms); and price was the most frequently reported third-most important factor (7 firms).

Table II-6
Geogrid: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third	Total
Price	9	6	7	22
Quality/product specifications	8	7	6	21
Availability	2	8	3	13
Product range	2	2	2	6
Relationship with vendor/traditional supplier	2	1	2	5
Other[1]	2	1	6	9

[1] Other factors include an industry leader and sales support for first factor; technical support for second factor; and reliability, location, engineering resources, credit terms, marketing and sales support, and ease of purchasing for third factor.

Source: Compiled from data submitted in response to Commission questionnaires.

Nine of 24 purchasers reported that they "usually" purchase the lowest-priced product, 11 reported "sometimes", two reported "always", and two reported "never". When asked if they purchased geogrid from one source although a comparable product was available at a lower price from another source, 14 purchasers reported reasons including quality, availability, lead time, support, relationship or agreement with supplier, and project specified the manufacturer and/or domestic product.

Six of 21 purchasers reported that certain types of product were only available from a single source. Four firms noted that certain types of product are only available domestically. *** cited the purity of domestic resin; *** stated that Tensar offers a wider range of biaxial geogrid; *** stated that wider widths of geogrid up to 16 foot wide, according to ***, is only available domestically; and *** also cited domestic availability of larger aperture grid. On the other hand, *** stated that the standard domestic products are three and four meters wide but that it purchases six meter wide geogrid from China, which reduces labor and waste on large coverage areas.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 18 factors in their purchasing decisions (table II-7). The factors rated as very important by more than half of responding purchasers were product consistency and quality meets industry standards (24 each); availability (23); delivery time and reliability of supply (22 each); price (21); delivery terms (14); and technical support/service (13).

Table II-7
Geogrid: Importance of purchase factors, as reported by U.S. purchasers, by factor

Factor	Number of firms reporting		
	Very Important	Somewhat important	Not important
Availability	23	1	0
Delivery terms	14	10	0
Delivery time	22	2	0
Discounts offered	12	11	1
Extension of credit	10	10	4
Minimum quantity requirements	3	12	9
Packaging	3	19	2
Price	21	3	0
Product consistency	24	0	0
Product range	12	11	1
Quality meets industry standards	24	0	0
Quality exceeds industry standards	7	14	3
Reliability of supply	22	2	0
Technical support/service	13	7	4
Engineering design support	10	7	7
Soils conditions testing	5	11	7
Job site visits	2	11	11
U.S. transportation costs	6	17	1

Source: Compiled from data submitted in response to Commission questionnaires.

Supplier certification

Most purchasers do not require certification. However, nine of 23 responding purchasers require their suppliers to become certified or qualified to sell geogrid to their firm. Six firms reported the time to qualify a new supplier: four purchasers reported 30 days or fewer, one reported 60-90 days, and one reported 120 days.[52] *** reported that the state DOT has a list of prequalified suppliers.

Only two of 23 responding purchasers reported that a supplier had failed in its attempt to qualify product, or had lost its approved status since January 1, 2013. *** stated that it purchased two trial containers from Thrace in Greece which did not meet the required specifications and were returned. *** also reported issues with geogrid from Greece and from Chinese suppliers (including Feicheng Lianyi) not meeting specifications.

[52] ***, which reported *** days, stated that its qualifications procedures involve reviewing product data and certifications, quality control procedures, packaging, labeling and tracking procedures, and testing samples for quality assurance. The next step in its qualification process is an evaluation of the manufacturing facility, followed by a second round of quality assurance testing.

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since 2013 (table II-8). Ten purchasers reported decreased domestic purchases, with five citing price as the reason, one purchaser citing Tensar selling to its competitors as the reason, and one purchaser citing an inability to compete with Tensar's exclusive distributors as the reason. The purchasers that reported increased domestic purchases cited increased overall geogrid sales as the reason. Of the purchasers that reported increased purchases of Chinese imports, three reported lower prices as the reason and one reported that China has the best products and service to allow it to compete with Tensar's limited exclusive distribution. Only one purchaser reported increased purchases from nonsubject sources; *** stated that it purchased two trial containers from Greece but that the product did not meet specifications and was returned to the vendor.

Table II-8
Geogrid: Changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Did not purchase	Decreased	Increased	Constant	Fluctuated
United States	1	10	6	4	5
China	11	1	6	1	1
All other sources	13	0	1	0	0
Sources unknown	11	0	1	1	1

Source: Compiled from data submitted in response to Commission questionnaires.

Importance of purchasing domestic product

Most responding purchasers (17 of 18) reported that 90 to 100 percent of their geogrid purchases in 2015 had no domestic requirements. Eleven purchasers reported that domestic product was required by law for one to 10 percent of their purchases. No purchaser reported that domestic product was required by their customers. One purchaser (***) reported that 50 percent of its purchases were required to be domestic, ***.

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing geogrid produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 18 factors (table II-9) for which they were asked to rate the importance.

Most purchasers reported that U.S. and Chinese product were comparable on 11 factors: availability, delivery terms, extension of credit, minimum quantity requirements, packaging, product consistency, product range, quality meets industry standards, quality exceeds industry standards, reliability of supply, and U.S. transportation costs. Most purchasers rated U.S. product as superior on two factors that a majority of purchasers rated as very important (see table II-7): delivery time and technical support/service, and also rated U.S.

product as superior on three factors that were rated as somewhat or not important by a majority of purchasers: engineering design support, soil conditions testing, and job site visits. Most purchasers reported that the Chinese product was priced lower than domestic product. Responses were mixed with respect to discounts offered.

Table II-9
Geogrid: Purchasers' comparisons between U.S.-produced and imported product

Factor	Number of firms reporting								
	United States vs. China			United States vs. Nonsubject			China vs Nonsubject		
	S	C	I	S	C	I	S	C	I
Availability	7	11	0	2	1	0	0	2	0
Delivery terms	7	9	1	1	2	0	0	2	0
Delivery time	12	5	0	1	1	1	0	2	0
Discounts offered	2	7	6	1	2	0	0	2	0
Extension of credit	4	9	1	1	1	0	0	2	0
Minimum quantity requirements	6	9	0	1	2	0	0	2	0
Packaging	3	12	2	1	2	0	1	1	0
Price[1]	2	3	13	1	2	0	0	2	0
Product consistency	6	10	1	1	2	0	1	1	0
Product range	5	12	1	1	2	0	1	1	0
Quality meets industry standards	6	12	0	1	2	0	1	1	0
Quality exceeds industry standards	6	11	0	1	2	0	1	1	0
Reliability of supply	6	12	0	1	2	0	1	1	0
Technical support/service	12	5	1	1	1	1	0	2	0
Engineering design support	14	4	1	2	1	1	0	2	0
Soils conditions testing	9	8	0	2	2	0	0	2	0
Job site visits	11	7	1	2	1	1	0	2	0
U.S. transportation costs[1]	7	10	1	1	2	0	0	2	0

[1] A rating of superior means that price/U.S. transportation costs is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Note.--S=first listed country's product is superior; C=both countries' products are comparable; I=first list country's product is inferior.

Source: Compiled from data submitted in response to Commission questionnaires.

Comparison of U.S.-produced and imported geogrid

In order to determine whether U.S.-produced geogrid can generally be used in the same applications as imports from China, U.S. producers, importers, and purchasers were asked whether the products can "always", "frequently", "sometimes", or "never" be used interchangeably. As shown in table II-10, *** reported that domestic geogrid and subject imports were always interchangeable and most importers and purchasers reported that they were frequently interchangeable. Only one importer, ***, provided additional comments; for

its specific end use, it reported that the domestic and imported Chinese product were never interchangeable ***. Four purchasers reported factors which limit interchangeability: purchaser exclusive relationship with Tensar, Buy-American clauses, and engineering specifications. One purchaser stated that interchangeability depends on the approval of the project engineer. It noted that the Chinese geogrid it purchases meets the Texas DOT specification for both Type 1 and Type 2 geogrid.

Table II-10

Geogrid: Interchangeability between geogrid produced in the United States and in other countries, by country pairs

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
United States vs. China	2	0	0	0	3	9	1	1	7	11	2	0
United States vs. Other	1	1	0	0	1	3	0	0	0	7	3	0
China vs. Other	2	0	0	0	1	3	0	0	0	3	4	0

Note.—A=Always, F=Frequently, S=Sometimes, N=Never.

Source: Compiled from data submitted in response to Commission questionnaires.

Most responding purchasers (18 of 21) reported that U.S.-produced geogrid always met minimum quality specifications (table II-11). Eight of 13 responding purchasers reported that Chinese geogrid always met minimum quality specifications.

In addition, producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of geogrid from the United States, subject, or nonsubject countries. As seen in table II-12, U.S. producers reported that differences other than price were never significant and most importers reported that they were sometimes significant. Among purchasers, 12 firms reported that differences were always or frequently significant in their purchase decision between domestic product and subject imports, and eight reported that they were sometimes or never significant.

In additional comments, *** reported that unlike other companies, Tensar has a large engineering service presence, *** stated that Chinese products are not typically backed up by a domestic sales and engineering support team, and *** stated that the domestic producer has an advantage in marketing, sales, and technical support. *** reported that its imports reliably meet specifications, that it has invested to have sufficient inventory capacity to meet customer needs, and that it now offers technical support and testing services that Tensar no longer offers on its biaxial products. *** reported the following additional non-price factors affecting sales: service capability, ability to supply related products, on-time delivery, and relationships with the customer.[53] *** cited long shipping times and less stable quality of the Chinese product.

[53] *** stated that service and on-time delivery to the job site are important factors in contractors' purchase decisions since delays increase contractors' labor and equipment costs. In addition, it stated that the ability to supply mixed loads when multiple products are required on the job site is an

(*continued*...)

Table II-11

Geogrid: Ability to meet minimum quality specifications, by source[1]

Source	Always	Usually	Sometimes	Rarely or never
United States	18	3	0	0
China	8	5	0	0
Other	0	1	0	0

[1] Purchasers were asked how often domestically produced or imported geogrid meets minimum quality specifications for their own or their customers' uses.

Source: Compiled from data submitted in response to Commission questionnaires.

Table II-12

Geogrid: Significance of differences other than price between geogrid produced in the United States and in other countries, by country pairs

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
United States vs. China	0	0	0	2	2	3	8	1	7	5	5	3
United States vs. Other	0	0	0	2	0	0	3	1	2	2	4	0
China vs. Other	0	0	0	2	0	0	3	1	2	2	3	0

Note.--A = Always, F = Frequently, S = Sometimes, N = Never.

Source: Compiled from data submitted in response to Commission questionnaires.

Several importers reported that they were unable to purchase from Tensar because of exclusive distribution arrangements and that distributors that could not purchase directly from Tensar had to go to their direct competitors to get pricing on products.[54]

Hanes stated that the product it imports from *** for its private label business provides superior packaging compared to the Tensar product, and that the packaging configuration provides for loading efficiency on trucks and at storage sites, and prevents damage to rolls that are stacked more than 30 days.[55]

Respondents state that service is an important non-price factor, and that importers such as Hanes, Alliance, and Hill Country provide service that Tensar no longer provides on biaxial geogrid.[56] Tensar stated that unlike its sales of triaxial geogrid, it typically does not offer design, technical, and installation guidance on biaxial geogrid.[57] Tensar stated that technical support and service were important when Tensar was building the market for the biaxial geogrid and it was not yet accepted in state and other specifications, but that the product is now well-

(…*continued*)
advantage. It further stated that its ability to provide multiple products and smaller quantities than manufacturers will ship are advantages in selling to smaller distributors.

[54] Conference transcript, p. 126 (Dowdell), p. 129 (Cashatt), p. 133 (Frey). Hearing transcript, p. 130 (Cashatt), p. 162 (Dowdell).

[55] Respondents' postconference brief, p. 21 and exh. 14. Respondents' prehearing brief, p. 29.

[56] Respondents' postconference brief, pp. 29-31.

[57] Petitioner's postconference brief, pp. 14-15.

accepted, and competition is now only on the basis of price.[58] Hanes stated that product quality, availability, and long-term stable supplier relationships are important factors in sales geogrids.[59]

ELASTICITY ESTIMATES

This section discusses elasticity estimates; parties did not comment on these estimates.

U.S. supply elasticity

The domestic supply elasticity[60] for geogrid measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of geogrid. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced geogrid. Analysis of these factors above indicates that the U.S. industry has the ability to greatly increase or decrease shipments to the U.S. market; an estimate in the range of 4 to 7 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for geogrid measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of geogrid. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the geogrid in the production of any downstream products. Based on the available information, the aggregate demand for geogrid is likely to be moderately inelastic; a range of -0.75 to -1.0 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[61] Product differentiation, in turn, depends upon such factors as quality (e.g., appearance, specifications, etc.) and conditions of sale (e.g., availability, sales terms/ discounts/ promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced biaxial geogrid and imported biaxial geogrid is likely to be in the range of 3 to 5.

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[58] Petitioner's postconference brief, exh. 1, p. 7.

[59] Hearing transcript, pp. 121-122 (Dowdell).

[60] A supply function is not defined in the case of a non-competitive market.

[61] The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject product (or vice versa) when prices change.

PART III: U.S. PRODUCERS' PRODUCTION, SHIPMENTS, AND EMPLOYMENT

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in *Part I* of this report and information on the volume and pricing of imports of the subject merchandise is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire response of Tensar that accounted for the vast majority of U.S. production of geogrid during January 2013 through September 2016.

U.S. PRODUCERS

The Commission issued a U.S. producer questionnaire to two firms based on information contained in the petition. Petitioner Tensar provided useable data on its manufacturing operations. The Commission also received a partially-completed questionnaire response from Tenax.[1] Staff believes that these two firms represent all known U.S. production of geogrid. Table III-1 lists U.S. producers of geogrid, their production locations, positions on the petition, and shares of total production.[2]

Table III-1
Geogrid: U.S. producers, their positions on the petition, production locations, and shares of reported production, 2015

Firm	Position on petition	Production location	Share of production (percent)
Tenax[1]	***	Evergreen, AL	***
Tensar[2]	Support	Morrow, GA	***
Total			100.0

[1] Tenax is ***.
[2] Tensar is ***.

Producers were asked to report any changes in operations since January 2013. Tenax reported that ***. Tensar reported that ***.[3] Tensar also stated that it ***. In addition, Tensar noted that ***.

Tensar's ***[4]. ***.

[1] Tenax did not provide complete production, commercial shipment and employment data in its questionnaire response. However, Tenax reported *** square yards of biaxial geogrid production in 2015.

[2] Commission staff did not incorporate Tenax's data into subsequent sections of part III. Tenax's share of reported production is ***.

[3] ***, email correspondence with USITC staff, November 15, 2016.

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Table III-2 and figure III-1 present Tensar's production, capacity, and capacity utilization.[5] Tensar's production capacity of geogrid remained stable throughout the period for which data was collected. Production capacity of geogrid is calculated based on ***. Reported production of geogrid decreased by *** percent between 2013 and 2015, but was *** percent higher in interim 2016 than in interim 2015. Much of the decrease in reported production during this period occurred from 2013 to 2014 when reported production decreased by *** percent. Capacity utilization decreased by *** percentage points between 2013 and 2015, much of which occurred from 2013 to 2014 when capacity utilization decreased by *** percentage points. Capacity utilization was *** percentage points higher in interim 2016 than in interim 2015.

Table III-2
Geogrid: Tensar's capacity, production, and capacity utilization, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Figure III-1
Geogrid: Tensar's production, capacity, and capacity utilization, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

The Commission asked the domestic producers to report constraints on their capacity to produce geogrid. Tensar noted that ***.[6]

U.S. PRODUCERS' U.S. SHIPMENTS AND EXPORTS

Table III-3 presents Tensar's U.S. shipments, export shipments, and total shipments of geogrid. The table also presents Tensar's U.S. shipments, export shipments and total shipments of biaxial geogrid and triaxial geogrid, individually.

(…*continued*)

[4] ***, email correspondence with USITC staff, November 29, 2016.

[5] As discussed in part I, the tables and figures in this report present data for all geogrid (unless otherwise specified). Summary data for geogrids, biaxial geogrid, and triaxial geogrid is presented in tables C-1, C-2 and C-3, respectively, in app. C. Tensar noted that ***. Tensar also reported ***.

[6] ***, telephone correspondence with USITC staff, November 30, 2016.

Table III-3
Geogrid: Tensar's U.S. shipments, exports shipments, and total shipments, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

From 2013 to 2014, Tensar's U.S. shipments and export shipments decreased by *** percent and *** percent, respectively, resulting in total shipments decreasing by *** percent during this period. While Tensar's U.S. shipments increased by *** percent from 2014 to 2015, its export shipments decreased by *** percent over the same period.

Despite the slight increase in Tensar's U.S. shipments of geogrid from 2014 to 2015, the year-by-year decreases in Tensar's export shipments caused its total shipments to decrease overall by *** percent from 2013 to 2015. The share of Tensar's export shipments decreased steadily from *** percent in 2013 to *** percent in 2015. The value of Tensar's export shipments decreased from *** in 2013 to *** in 2015.

The steady decrease in Tensar's export shipments of geogrid from 2013 to 2015 is largely driven by a *** percent decrease in export shipments of biaxial geogrid over this period. Export shipments of triaxial geogrid also decreased during this period by *** percent. In response to staff inquiries concerning the decrease in export shipments of biaxial geogrid, Tensar's counsel stated that ***.[7] Tensar's counsel also noted that ***.[8]

The increase in Tensar's U.S. shipments of geogrid from 2013 to 2015 was driven by a *** percent increase in U.S. shipments of biaxial geogrid during the same time period.[9] In interim 2016, Tensar's U.S. shipments of biaxial geogrid reached the same level as in all of 2013 (*** square yards). Tensar's U.S. shipments of triaxial geogrid *** from year-to-year during 2013-15.

From 2013 to 2014, the value of Tensar's U.S. shipments of geogrid decreased by *** percent, but then increased *** percent from 2014 to 2015, resulting in an overall decrease of *** percent during 2013-15. The value of Tensar's U.S. shipments of geogrid was *** percent higher in the 2016 interim period than in the 2015 interim period. The unit value of Tensar's U.S. shipments of geogrid *** from 2013 to 2014, but decreased by *** percent from 2014 to 2015. The unit value of Tensar's U.S. shipments of geogrid reached its lowest value in interim 2016 (*** per square yard).

The value of Tensar's export shipments of geogrid decreased by *** percent from 2013 to 2015. Much of the decrease in export shipments value during 2013-15 occurred from 2013 to 2014 when it decreased by *** percent. Tensar's export shipments value was *** percent lower in interim 2016 than in interim 2015. The unit value of Tensar's export shipments of geogrid decreased by *** percent from 2013 to 2014 but then increased by *** percent from

[7] ***, email correspondence with USITC staff, November 29, 2016.

[8] Ibid.

[9] Tensar's U.S. commercial shipments of biaxial geogrid increased unevenly from 2013 to 2015. It decreased by *** percent from 2013 to 2014 before increasing by *** percent from 2014 to 2015.

2014 to 2015, resulting in an overall increase of *** percent during 2013-15. The unit value of Tensar's export shipments reached its lowest value in interim 2016 (*** per square yard).

U.S. PRODUCERS' INVENTORIES

Table III-4 presents Tensar's end-of-period inventories, and the ratio of end-of-period inventories to production, U.S. shipments, and total shipments**.** From 2013 to 2014**,** Tensar's end-of-period inventories of geogrid increased by *** percent, but then decreased by *** percent from 2014 to 2015, resulting in an overall decrease of *** percent during 2013-15. Tensar's end-of-period inventories of geogrid were *** percent lower during the 2016 interim period than during the 2015 interim period. The decrease in Tensar's end-of-period inventories of geogrid from interim 2015 to interim 2016 was driven by a *** percent decrease in end-of-period inventories of triaxial geogrid during that period.

Tensar's end-of-period inventories of biaxial geogrid exhibited similar changes as its end-of-period inventories of geogrid. From 2013 to 2014, Tensar's end-of-period inventories of biaxial geogrid increased by *** percent but then decreased by *** percent from 2014 to 2015, resulting in an overall decrease of *** percent. Tensar's end-of-period inventories of triaxial geogrids also fluctuated year to year during 2013-15, increasing by *** percent from 2013 to 2014 and then decreasing by *** percent from 2014 to 2015, resulting in an overall decrease of *** percent.

Tensar's inventories of geogrid relative to U.S. shipments increased by *** percentage points from 2013 to 2014 but then decreased by *** percentage points from 2014 to 2015, resulting in an overall decrease of *** percentage points during 2013-15. Tensar's inventories relative to U.S. shipments were *** percentage points lower in the 2016 interim period than the 2015 interim period. Tensar's inventories of geogrid relative to production also fluctuated year-to-year from 2013 to 2015. It increased by *** percentage points from 2013 to 2014 but then decreased by *** percentage points from 2014 to 2015, resulting in an overall increase of *** percentage points from 2013 to 2015. Tensar's inventories of geogrid relative to production was *** percentage points lower in interim 2016 than in interim 2015.

Table III-4
Geogrid: Tensar's inventories, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

U.S. PRODUCERS' IMPORTS AND PURCHASES

Tensar ***. In the preliminary phase of these investigations, ***. Tenax ***.

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-5 shows Tensar's employment-related data.[10] The level of production-related workers (PRWs) for geogrid decreased by *** percent from 2013 to 2015 and was *** percent lower during the 2016 interim period than during the 2015 interim period. Hours worked by PRWs decreased by *** percent from 2013 to 2015. The number of PRWs for biaxial geogrid and triaxial geogrid decreased by *** and *** percent, respectively, from 2013 to 2015. Productivity decreased by *** percent from 2013 to 2015, but was *** percent higher in interim 2016 than in interim 2015, reaching levels that were greater than in 2013. Unit labor costs for geogrids increased by *** percent from 2013 to 2014, but then decreased by *** percent from 2014 to 2015, resulting in an overall increase of *** percent during 2013-15. Hourly wages increased by *** percent during 2013-15.

Table III-5
Geogrid: Tensar's average number of production and related workers, hours worked, wages paid to such employees, hourly wages, productivity, and unit labor costs, 2013-15, January to September 2015, and January-September 2016

* * * * * * *

[10] ***.

PART IV: U.S. IMPORTS, APPARENT U.S. CONSUMPTION, AND MARKET SHARES

U.S. IMPORTERS

The Commission issued importer questionnaires to 21 firms believed to be importers of biaxial geogrid, as well as to all U.S. producers of biaxial geogrid.[1] Usable questionnaire responses were received from 14 companies, which staff believes represents a large majority of U.S. imports from China between January 2013 and September 2016.[2] Table IV-1 lists all responding U.S. importers of geogrid from China, their locations, and their shares of U.S imports during 2015.[3] U.S. importers reported imports from other sources in interim 2016. No U.S. importers reported imports of triaxial geogrid during the period of investigation.[4]

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[1] The Commission issued questionnaires to firms identified in the petition, and to firms that were identified through a review of records provided by ***, under HTS statistical subheadings 3926.90.9995, 3920.20.0050, 3925.90.0000. As discussed in part I, these HTS subheadings represent basket categories that cover articles of plastic not specified elsewhere, including the subject merchandise. The *** record yielded over four thousand companies that recorded imports under the above HTS subheadings during the period for which data were collected for these investigations. Commission staff reviewed the websites of the largest importers to determine whether they have business interests in the subject merchandise and found one company *** with such interests. Commission staff also reviewed several secondary sources to supplement its review of the Customs data, but did not find any firms that were not already identified in the petition or in the *** records.

[2] The Commission received completed questionnaires from the same 13 companies that responded in the preliminary phase of these investigations as well as one additional questionnaire from ***. In the preliminary phase, *** (companies identified in the petition) did not report any imports during the period for which data were collected.

Among the firms that did not provide complete responses two firms, ***, reported they did not import subject merchandise during the period for which data was collected; one firm,***, reported that it is the marketing arm of another importer *** and not an importer of subject merchandise; two firms, *** and ***, submitted incomplete responses; and two firms, *** and ***, did not provide a response. *** submitted an incomplete questionnaire response citing that it imported subject merchandise for only a few months during the period for which data was collected. *** did not respond to Commission staff requests for an estimate of its import volume during those few months. *** submitted an incomplete response and did not respond to additional inquiries from Commission staff. *** expressed concern with the Commission revealing its business proprietary information (BPI) in the public version of the report for these investigations. Despite Commission staff providing reassurance that the Commission will not mishandle BPI, the firm did not provide a questionnaire response.

[3] Hill Country Site Supply was purchased by Hanes Companies, Inc. in August 2016 and is now an operating branch of Hanes Companies, Inc. ***.

[4] Triaxial geogrid is a patented product of Tensar.

Table IV-1
Geogrid: U.S. importers, their headquarters, and share of total imports by source, 2015

Firm	Headquarters	Share of imports by source (percent)[1]
		China
Contech Engineered Solutions LLC[2]	West Chester, OH	***
DECA Global LLC	Memphis, TN	***
Glen Raven Inc.	Burlington, NC	***
GSE Environmental, LLC[3]	Houston, TX	***
Hanes Companies, Inc.[4]	Winston-Salem, NC	***
Hill Country Site Supply, an operating branch of Hanes Companies, Inc.	New Braunfels, TX	***
L&M Supply and Bag Company	Willacoochee, GA	***
Layfield USA Corporation	Spring Valley, CA	***
Maccaferri, Inc.[5]	Williamsport, MD	***
Midwest Construction Products	Fort Myers, FL	***
Pacific GeoSource Inc DBA Alliance Geosynthetics Inc	Drain, OR	***
SEk Corporation	St. Charles, IL	***
Synteen Technical Fabrics, Inc.	Lancaster, SC	***
TenCate Geosynthetics	Pendergrass, GA	***
Thrace LINQ Inc.[6]	Summerville, SC	***
Willacoochee Industrial Fabrics Inc.	Willacoochee, GA	***
Total		100.0

[1] There were no reported imports from other sources in 2015. Imports from China accounted for *** percent of reported imports of biaxial geogrid in 2015.
[2] Contech ***.
[3] GSE Environmental ***.
[4] Hanes ***.
[5] Maccaferri ***.
[6] Thrace LINQ Inc. ***.

U.S. IMPORTS

Table IV-2 and figure IV-1 present data for U.S. imports of geogrid from China and all other sources. U.S. import data in this report are based on questionnaire responses. From 2013 to 2015, imports from China increased by *** percent with much of the increase occurring from 2013 to 2014 ***. U.S. imports from China were *** percent lower in interim 2016 than in interim 2015. This decrease in imports from interim 2015 to interim 2016 is attributable to importer ***, which accounted for *** percent of all U.S. imports from China in 2015, but reported *** imports from China in interim 2016. None of the U.S. importers that reported imports in interim 2015 reported an increase in imports from interim 2015 to interim 2016. Furthermore, ***.

The total value of imports from China exhibited the same changes as the quantity of imports. From 2013 to 2015, the value of imports increased by *** percent, but was *** percent lower in interim 2016 than in interim 2015. The unit value of imports from China decreased steadily by *** percent from 2013 to 2015. It was *** percent lower in interim 2016 than in interim 2015, reaching its lowest value at $*** per square yard.

China's share of U.S. importers' imports by quantity remained at *** percent year-to-year from 2013 to 2015, but decreased by *** percentage points from interim 2015 to interim 2016. As U.S. imports from China decreased from interim 2015 to interim 2016, the share of quantity of imports from other sources increased from *** percent to *** percent. The change in market share over this period was driven by importer ***, which ***, but reported *** from other sources during 2013-15. ***

Table IV-2
Geogrid: U.S. imports, by source, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Figure IV-1
Geogrid: U.S. import volumes and unit values, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

CRITICAL CIRCUMSTANCES

On January 11, 2017, Commerce issued its final determination that "critical circumstances" exist with regard to imports from all sources in China in its LTFV investigation.[5] [6] Commerce also issued its final determination that "critical circumstances" exist with regards to imports from all sources in China, except Taian Modern Plastic Co., in its countervailing duty investigation.[7] In these investigations, if both Commerce and the Commission make affirmative final critical circumstances determinations, certain subject imports may be subject to duties

[5] *Certain Biaxial Integral Geogrid Products from the People's Republic of China: Final Determination of Sales at Less Than Fair Value,* 82 FR 3284, January 11, 2017.

[6] When petitioners file timely allegations of critical circumstances, Commerce examines whether there is a reasonable basis to believe or suspect that (1) either there is a history of dumping and material injury by reason of dumped imports in the United States or elsewhere of the subject merchandise, or the person by whom, or for whose account, the merchandise was imported knew or should have known that the exporter was selling the subject merchandise at LTFV and that there was likely to be material injury by reason of such sales; and (2) there have been massive imports of the subject merchandise over a relatively short period.

[7] *Countervailing Duty Investigation of Certain Biaxial Integral Geogrid Products from the People's Republic of China: Final Affirmative Determination and Final Determination of Critical Circumstances, in Part,* 82 FR 3282, January 11, 2017.

retroactive by 90 days from the effective dates of Commerce's preliminary affirmative LTFV and countervailing duty determinations.[8] Table IV-3 and figures IV-2 and IV-3 present monthly import data from January 2015 to September 2016 and a comparative analysis of several monthly periods for U.S. imports from China subject to Commerce's final LTFV critical circumstance. Table IV-4 and figures IV-4 and IV-5 present monthly import data from January 2015 to September 2016 and a comparative analysis of several monthly periods for U.S. imports from China subject to Commerce's final countervailing duty critical circumstance.

As figures IV-2 and IV-3 illustrate, there were fairly large increases in imports of biaxial geogrid from China from January to May in 2015 (pre-petition) as well as January to February 2016 (post-petition) that were each followed by a corresponding decrease from February to March. Typically there is an increase in the demand for biaxial geogrids in the winter as engineers prepare for construction projects that usually begin in the spring or summer. This seasonal shift in the business cycle may partially explain the increase in imports of biaxial geogrid from China during those months.

Table IV-3
Geogrid: U.S. importers' U.S. imports from China subject to Commerce's final AD critical circumstances findings, January 2015-June 2016

* * * * * * *

Figure IV-2
Geogrid: U.S. imports from China subject to Commerce's final AD critical circumstances findings, January 2015-June 2016

* * * * * * *

Figure IV-3
Geogrid: U.S. imports from China subject to Commerce's final AD critical circumstances findings, 2013-2015, January 2015-June 2016

* * * * * * *

Table IV-4
Geogrid: U.S. importers' U.S. imports from China subject to Commerce's final CVD critical circumstances findings, January 2015-June 2016

* * * * * * *

[8] As discussed in part I, Commerce issued its preliminary affirmative determination of its LTFV investigation on August 22, 2016 and its preliminary affirmative determination of its countervailing duty investigation on June 24, 2016.

Figure IV-4
Geogrid: U.S. imports from China subject to Commerce's final CVD critical circumstances findings, January 2015-June 2016

* * * * * * *

Figure IV-5
Geogrid: U.S. imports from China subject to Commerce's final CVD critical circumstances findings, 2013-2015, January to September 2015 and January to September 2016

* * * * * * *

NEGLIGIBILITY

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[9] Negligible imports are generally defined in the Tariff Act of 1930, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. Imports from China accounted for 100.0 percent of total imports of geogrid by quantity during 2015.

APPARENT U.S. CONSUMPTION AND MARKET SHARES

Table IV-5 and figure IV-6 presents data on apparent U.S. consumption and U.S. market shares for geogrid. Apparent consumption of geogrid based on quantity, increased by *** percent from 2013 to 2015. Much of this growth in apparent consumption occurred from 2014 to 2015 when it increased by *** percent. Apparent consumption of geogrid was *** from interim 2015 to interim 2016 as Tensar's U.S. shipments ***.

The increase in apparent consumption from 2013 to 2015 was driven by *** and U.S. importers' shipments of imports from China, which increased by *** and *** percent, respectively. Tensar's U.S. shipments of triaxial geogrid *** year-to-year during 2013-15.

Tensar's market share based on quantity, decreased from 2013 to 2015 by *** percentage points, but returned to 2013 levels (*** percent) in interim 2016. The market share of imports of geogrid from China increased by *** percentage points from 2013 to 2015 but was *** percentage points lower in interim 2016 than in interim 2015.

[9] Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).

Table IV-5
Geogrid: Apparent U.S. consumption and market shares, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

Figure IV-6
Geogrid: Apparent U.S. consumption, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

The major raw material used in geogrid production is polypropylene resin. As shown in figure V-1, polypropylene prices declined by 28 percent between January 2013 and September 2016. Polypropylene prices fluctuated during January 2013-October 2014, declined by 75 percent through September 2015, increased slightly through April 2016, declined slightly from May-July 2016, and then increased slightly in August and September 2016.

Figure V-1
Polypropylene: North American polypropylene prices

* * * * * * *

Tensar reported that polypropylene resin prices increased from 2012-14, declined in 2015, and have increased in 2016,[1] ***. ***. Among importers, eight firms reported that raw material prices have fluctuated since January 1, 2013 and two firms reported that they have decreased.

U.S. inland transportation costs

*** and most importers reported that they typically arrange transportation to their customers; ***. Most importers reported that the product is shipped from the storage facility (10 firms) rather than from the point of importation (3 firms). Tensar reported that U.S. inland transportation costs accounted for *** percent of the total delivered cost and most importers reported costs of 1 to 10 percent.

PRICING PRACTICES

Pricing methods

Tensar reported setting prices using *** and Tenax reported using ***. Importers reported setting prices primarily using transaction-by-transaction negotiations, although some importers reported using set price lists (table V-1).

[1] Hearing transcript, pp. 34-35 (Edgecombe).

Tensar reported that ***. At the staff conference, Tensar reported that its private label sales are shipment-by-shipment for 30 to 60 days of supply rather than long-term contracts.[2] For its branded product, Tensar has contracts with its exclusive distributors for distribution rights, but pricing is negotiated sale-by-sale.[3] Importers reported that the vast majority of sales in 2015 were on a spot basis and that the remainder was on a short-term contract basis (table V-2).[4]

Table V-1

Geogrid: U.S. producers' and importers' reported price setting methods, by number of responding firms[1]

Method	U.S. producers	Importers
Transaction-by-transaction	***	13
Contract	***	1
Set price list	***	3
Other	***	2
Total	***	14

[1]The sum of responses down may not add up to the total number of responding firms as each firm was instructed to check all applicable price setting methods employed.

Source: Compiled from data submitted in response to Commission questionnaires.

Table V-2

Geogrid: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2015

Type of sale	U.S. producers	Importers
Long-term contracts	***	0.0
Annual contracts	***	0.0
Short-term contracts	***	5.7
Spot sales	***	94.3
Total	***	100.0

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from data submitted in response to Commission questionnaires.

Purchasers reported the following frequency of geogrid purchases: daily (1 purchaser), weekly (6), monthly (10), quarterly (3), and other frequencies (5). Eighteen of 24 responding

[2] Conference transcript, p. 73 (Lawrence).

[3] Tensar reported that its distributors have asked Tensar to meet Chinese prices offered by the distributors' competitors. Conference transcript, p. 73 (Lawrence and Gerrish).

[4] Only two importers reported contracts in 2015: *** reported that *** percent of its sales were under short-term contracts averaging *** days and *** reported that *** percent of its sales were under short-term contracts averaging *** days.

purchasers reported that their purchasing frequency had not changed since 2013.[5] Most (20 of 22) purchasers contact three or fewer suppliers before making a purchase.

Sales terms and discounts

U.S. producers Tensar and Tenax typically quote prices on *** basis. Importers typically quote prices on an f.o.b. basis although some importers also quote on a delivered basis. Tensar reported that it *** discounts and Tenax reported ***. Most importers (11 of 15) reported no discount policy, although four reported quantity discounts, and one also reported total volume discounts. *** reported that its sales prices vary by volume and that it offers rebate programs for select customers.

***. Most importers reported sales terms of net 30 days.

Price leadership

Purchasers reported that the following firms were price leaders: Tensar (7 purchasers), Hanes (5), Chinese importers (2), TenCate (2), Strata (1), and Alliance (1). In describing how these firms led prices, purchasers stated that Tensar lowered geogrid prices before the expiration of its patent via heavily discounted sales through its private label distributor; that Tensar has a pricing edge due to brand strength, its U.S. operations, and established distribution and logistics; that Tensar's exclusive distributor in Texas for branded product has bid on projects at very low prices; that Tensar encourages responsible pricing behaviors, and that Tensar has modified its design software to favor triaxial geogrid over biaxial geogrid. On the other hand, *** stated that Tensar is trying to hold the line on prices but that Tensar has had to lower its prices because of lower priced imports. Purchasers also stated that Hanes led prices downward and that TenCate was often the first to increase prices.

PRICE DATA

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following biaxial geogrid products[6] shipped to unrelated U.S. customers during January 2013-September 2016.

Product 1.-- Biaxial integral geogrid, made from polypropylene, commonly known as "Type 1" or "BX 1100," with a minimum rib thickness of 0.03 inches, and an

[5] Six purchasers reported a change in the frequency of their purchases. Specifically, two purchasers reported fewer sales since 2013; one reported increased purchases of triaxial geogrid, one purchaser reported adding an outside sales person; and one purchaser reported greater availability of geogrid since the patent expiration, leading to more demand and increased purchases. In addition, ***.

[6] Pricing products 1 and 2 were suggested in the Petition. Pricing product 3 was suggested by Respondents in the final phase of the investigations.

ultimate tensile strength of 850 lb/ft in the longitudinal direction (also known as "machine direction" or "MD Value") and 1,300 lb/ft in the transverse direction (also known as "cross machine direction" or "XMD Value").

Product 2.-- Biaxial integral geogrid, made from polypropylene, commonly known as "Type 2" or "BX 1200," with a minimum rib thickness of 0.05 inches, and an ultimate tensile strength of 1,310 lb/ft for the MD Value, and 1,970 lb/ft for the XMD Value.

Product 3.-- A four-sided biaxial integral geogrid, made from polypropylene, commonly known as "SX2020, BX2020" with a minimum rib thickness of 0.045 inches, and a balanced ultimate tensile strength of 1,370 lb/ft in both the longitudinal direction (also known as "machine direction" or "MD Value") and transverse direction (also known as "cross machine direction" or "XMD Value").

Data were requested for sales of branded product separated by sales to distributors and sales to end users/contractors. In addition, U.S. producers were requested to provide data for sales of unbranded product to private labelers,[7] and importers were requested to provide landed, duty-paid cost data for their imports of unbranded product for private labeling. Finally, price data were requested from U.S. producers for sales of triaxial geogrid.

Tensar and 11 importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[8] Pricing data reported by these firms accounted for approximately *** percent of Tensar's shipments of biaxial geogrid and 72.4 percent of U.S. shipments of subject imports from China in 2015. Eight importers provided cost data for their direct imports for private labeling. These cost data represent 48.9 percent of imports from China in 2015.

Price data for products 1-3 for sales of branded product to distributors and sales to end users/contractors are presented in tables V-3 to V-5 and figures V-2 to V-4 (a, b). Tensar's price data for private label sales and importers' cost data for private label are presented in tables V-6 to V-8 and figures V-2 (c) to V-4 (c). Additional information regarding importers' direct import costs is provided later in part V. Domestic prices for triaxial geogrid are shown in table V-9.

[7] "Private labelers" refers to firms that distribute domestic and/or imported geogrid under their company's own private label. Importers that sell geogrid under their own private label were requested to provide both import cost data and sales price data for products 1-3.

[8] Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

Table V-3

Biaxial geogrid (branded): Weighted-average f.o.b. prices and quantities of domestic and imported product 1[1] and margins of underselling/(overselling), by quarters, January 2013-September 2016

* * * * * * *

Table V-4

Biaxial geogrid (branded): Weighted-average f.o.b. prices and quantities of domestic and imported product 2[1] and margins of underselling/(overselling), by quarters, January 2013-September 2016

* * * * * * *

Table V-5

Biaxial geogrid (branded): Weighted-average f.o.b. prices and quantities of domestic and imported product 3[1] and margins of underselling/(overselling), by quarters, January 2013-September 2016

* * * * * * *

Table V-6

Biaxial geogrid (private label): Weighted-average f.o.b. prices or LDP costs, and quantities of domestic and imported product 1[1], by quarters, January 2013-September 2016

* * * * * * *

Table V-7

Biaxial geogrid (private label): Weighted-average f.o.b. prices or LDP costs, and quantities of domestic and imported product 2[1], by quarters, January 2013-September 2016

* * * * * * *

Table V-8

Biaxial geogrid (private label): Weighted-average f.o.b. prices or LDP costs, and quantities of domestic and imported product 3[1], by quarters, January 2013-September 2016

* * * * * * *

Table V-9

Triaxial geogrid: Weighted-average f.o.b. prices and quantities of domestic product and margins of underselling/(overselling), by quarters, January 2013-September 2016

* * * * * * *

Figure V-2a (Sales of branded product to distributors)
Biaxial geogrid: Weighted-average prices and quantities of domestic and imported product 1, by quarters, January 2013-September 2016

* * * * * * *

Figure V-2b (Sales to end users)
Biaxial geogrid: Weighted-average prices and quantities of domestic and imported product 1, by quarters, January 2013-September 2016

* * * * * * *

Figure V-2c (Private label)
Biaxial geogrid: Weighted-average f.o.b. prices or LDP costs, and quantities of domestic and imported product 1, by quarters, January 2013-September 2016

* * * * * * *

Figure V-3a (Sales of branded product to distributors)
Biaxial geogrid: Weighted-average prices and quantities of domestic and imported product 2, by quarters, January 2013-September 2016

* * * * * * *

Figure V-3b (Sales to end users)
Biaxial geogrid: Weighted-average prices and quantities of domestic and imported product 2, by quarters, January 2013-September 2016

* * * * * * *

Figure V-3c (Private label)
Biaxial geogrid: Weighted-average f.o.b. prices or LDP costs, and quantities of domestic and imported product 2, by quarters, January 2013-September 2016

* * * * * * *

Figure V-4a (Sales of branded product to distributors)
Biaxial geogrid: Weighted-average prices and quantities of domestic and imported product 3, by quarters, January 2013-September 2016

* * * * * * *

Figure V-4b (Sales to end users)
Biaxial geogrid: Weighted-average prices and quantities of domestic and imported product 3, by quarters, January 2013-September 2016

* * * * * * *

Figure V-4c (Private label)
Biaxial geogrid: Weighted-average f.o.b. prices or LDP costs, and quantities of domestic and imported product 3, by quarters, January 2013-September 2016

* * * * * * *

Price trends

Geogrid prices decreased during January 2013-September 2016. Table V-10 summarizes the price trends, by country, by product, and by channel of distribution. As shown in the table, domestic price decreases ranged from 15 to 49 percent during January 2013-September 2016 while subject import sales price decreases ranged from 8 to 39 percent. Subject import landed-duty paid cost decreases ranged from 11 to 33 percent.

Tensar reported that it reduced biaxial geogrid prices prior to the expiration of the patent in May 2012 in anticipation of changing market competition.[9] Respondents asserted that Tensar "aggressively" lowered its pricing by offering private label product through distributor SynTec prior to the patent expiration and the entrance of imports.[10] Tensar also reported a shift in the relative pricing of Type 1 and Type 2 biaxial geogrid when imports entered the market, with the higher-performing Type 2 prices coming closer to Type 1 prices.[11]

Table V-10
Geogrid: Summary of weighted-average f.o.b. sales prices and import unit costs for products 1-3 from the United States and China, and for triaxial geogrid from the United States

* * * * * * *

Price comparisons

As shown in table V-11, prices for geogrid imported from China were below those for U.S.-produced product in 40 of 62 instances (*** square yards); margins of underselling ranged from 0.9 to 64.5 percent. In the remaining 22 instances (*** square yards), prices for geogrid from China were between 0.7 to 40.5 percent above prices for the domestic product.

[9] It further reported that its prices were already somewhat restrained by prices of alternative products such as aggregate, chemical stabilization, and woven and knitted products. Conference transcript, p. 91 (Gerrish).

[10] Conference transcript, p. 134 (Frey). SynTec was acquired by GSE in February 2013. GSE website, http://www.gseworld.com/About-Us/News-and-Events/Press-Releases/GSE-Environmental-Announces-Acquisition-of-SynTec-LLC/, retrieved Feb. 11, 2016. Importer *** reported that 6 months prior to the patent expiration, Tensar lowered is price by approximately 52 percent through its distributor network. It also reported that after the patent expiration, "there was an expected downward trend in market pricing due to increased competition at the distributor level, with producers aligning with distributors and distributors aligning with end-users." *** importer questionnaire response, question III-3.

[11] Tensar's representative further stated that there was a shift in sales from Type 1 to Type 2 but since late 2012 to end of 2013, sales have shifted back toward Type 1 and other lighter-weight products. Conference transcript, pp. 80-81 (Gee).

Table V-11
Geogrid: Instances of underselling/overselling and the range and average of margins, by product and channel of distribution, January 2013-September 2016

Source	Underselling				
	Number of quarters	Quantity (square yards)	Average margin (percent)	Margin Range (percent)	
				Min	Max
Product 1 to distributors	***	***	***	***	***
Product 1 to end users	***	***	***	***	***
Product 2 to distributors	***	***	***	***	***
Product 2 to end users	***	***	***	***	***
Product 3 to distributors	***	***	***	***	***
Product 3 to end users	***	***	***	***	***
All products to distributors	***	***	***	***	***
All products to end users	***	***	***	***	***
Total, underselling	40	***	14.9	0.9	64.5
Source	**(Overselling)**				
	Number of quarters	Quantity (square yards)	Average margin (percent)	Margin Range (percent)	
				Min	Max
Product 1 to distributors	***	***	***	***	***
Product 1 to end users	***	***	***	***	***
Product 2 to distributors	***	***	***	***	***
Product 2 to end users	***	***	***	***	***
Product 3 to distributors	***	***	***	***	***
Product 3 to end users	***	***	***	***	***
All products to distributors	***	***	***	***	***
All products to end users	***	***	***	***	***
Total, underselling	22	***	(11.2)	(0.7)	(40.5)

[1] These data include only quarters in which there is a comparison between the U.S. and subject product.

Source: Compiled from data submitted in response to Commission questionnaires.

Direct import costs[12]

Importers reporting landed duty-paid cost data for their direct imports for private labeling were also asked to indicate the types of costs incurred, and to estimate the share of

[12] Petitioner stated that that Tensar's sales prices to private label customers should be compared directly to importers' direct import costs without any additional costs being included. It stated that the prices Tensar reported excludes charges such as shipping, product inspection, container stowage, insurance, relabeling, and other costs that would similarly be excluded from the import costs reported by importers. Petitioner's posthearing brief, exh. 1, pp. 51-52.

Respondents stated that Tensar's prices to private label distributors should be compared to importers' sales prices to distributors, which represent the first arm's length price in the United States. Respondents' posthearing brief, p. 10 and app. 1, p. 10.

the import value of biaxial geogrids accounted for by such costs. Seven importers reported information on their costs of importing (table V-12); estimates of the total costs ranged from 3 to 30 percent of the landed duty-paid value of biaxial geogrids.[13] Additionally, importers reported that U.S. inland transportation costs or other logistics costs from the port of importation to their distribution network ranged from 2 to 10 percent. Importers reported that they saved 5 to 15 percent of the landed duty paid value by having purchased biaxial geogrids directly from China instead of purchasing from a U.S. importer.[14]

Four direct importers reported that they compare costs to both U.S. importers and to U.S. producers in determining whether to directly import, one reported that it compares costs to U.S. producers only, and two reported that they do not compare costs to U.S. producers or importers.

Table V-12
Geogrid: Importers' reported costs of direct imports for private labeling

Type of cost	Number of firms reporting	Range of shares of LDP value (percent)	Additional explanations
Logistical or supply chain[1]	7	1 to 21	Drayage from port to warehouse, unloading from container, freight intercompany, freight to customer. Costs vary based on destination and container stowage.
Warehousing	5	2 to 10	Rent, insurance, systems, labor
Insurance	4	0.25 to 10	--
Currency conversion	0	--	--
Other	2	1 to 4	Testing, customs/FF Brokerage, interest, inspection, relabeling for U.S. customers

[1] ***.

Source: Compiled from data submitted in response to Commission questionnaires.

Importers identified the following benefits to their firm of directly importing biaxial geogrid instead of purchasing biaxial geogrid from a U.S. producer or importer: price, cost, availability, corporate level agreements, and ability to source geogrid.[15]

Four importers (***) that reported direct imports also reported purchasing geogrid from a U.S. producer, and four importers (***) reported that they did not purchase from a U.S. producer. The importers that reported purchasing from a U.S. producer were asked to provide

[13] ***. Importer *** did not provide information on the types of costs.

[14] Three importers reported 15 percent, one reported 12 percent, one reported 10 percent, and two reported 5 percent. Only one importer reported a variation in this margin since January 1, 2013; *** reported that margins have declined because of an increase in the number of importers and increased competition.

[15] As discussed in Part II, several importers reported that Tensar would not sell directly to them.

information regarding the costs incurred when purchasing domestically-produced geogrid and how they compare to the costs of directly importing.[16] ***.[17]

LOST SALES AND LOST REVENUE

In the preliminary phase of the investigations, the Commission requested U.S. producers of geogrid to report purchasers where they experienced instances of lost sales or revenue due to competition from subject imports since January 2012. Tensar ***, reported having to reduce prices and roll back announced price increases, and lost sales. Tensar submitted lost sale and lost revenue allegations; ***. Tensar identified 10 firms where it lost sales or revenue (all 10 consisting of both lost sale and lost revenue allegations).[18] It reported that its lost sales at these purchasers totaled *** square yards. Most of the allegations were in 2014 and 2015, although there were a few in 2012 and 2013 and one in 2016. The method of sale was identified as "individual sale." Specific product types identified were BX1100 (Type 1), BX1200 (Type 2), BX4100, BX4200, TXDOT Type 1 and Type 2, and Type 2A.

In the final phase of the investigations, Tensar *** reported having to reduce prices and roll back announced price increases and lost sales. As noted in Part II, the Commission received purchaser questionnaire responses from 24 firms.[19] Responding purchasers reported purchasing *** square yards of biaxial geogrid in 2015 (table V-13).[20]

Table V-13
Biaxial geogrid: Purchasers' responses to purchasing patterns

* * * * * * *

Of the 22 responding purchasers, eight reported that, since 2013, they had purchased imported biaxial geogrid from China instead of U.S.-produced product. Six of these purchasers reported that subject import prices were lower than U.S.-produced product, and four reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Four purchasers reported the quantity of subject imports that they purchased instead of domestic product; these purchases totaled 3.2 million square yards (table V-14). Purchasers identified inability to buy geogrid from Tensar, "loadability," and "liked the sales rep" as non-price reasons for purchasing imported geogrid rather than U.S.-produced geogrid.

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[16] Staff sent emails requesting this information to ***.

[17] Emails from ***to USITC staff, January 3-6, 2017. Staff telephone interviews with ***.

[18] ***. Staff telephone interview with ***.

[19] All five purchasers that submitted lost sales lost revenue survey responses in the preliminary phase submitted purchaser questionnaire responses in the final phase.

[20] Responding purchasers also reported purchasing *** square yards of triaxial geogrid in 2015; such purchases are not shown in the table.

Of the 24 responding purchasers, 11 reported that U.S. producers had reduced prices in order to compete with lower-priced imports from China (table V-15; 11 reported that they did not know). The reported estimated price reduction ranged from 3 to 75 percent. In describing the price reductions, purchasers indicated that the reductions varied by specific product type, that prices declined because of the expiration of Tensar's patent as well as increased competition from subject imports, and that raw material prices also declined.

Table V-14
Biaxial geogrid: Purchasers' responses to shifting supply sources

* * * * * * *

Table V-15
Biaxial geogrid: Purchasers' responses to U.S. producer price reductions

* * * * * * *

PART VI: FINANCIAL EXPERIENCE OF U.S. PRODUCERS

BACKGROUND

One U.S. producer, Tensar, reported usable financial results on its geogrid operations.[1] As noted in Part III, Tensar expanded its geogrid operations during 2012, prior to the period examined, and ***.[2] [3]

OPERATIONS ON GEOGRIDS

Table VI-1 presents the aggregate income-and-loss data for the geogrid operations of Tensar.[4] Table VI-2 presents corresponding changes in average unit values. Table VI-3 presents a corresponding variance analysis of the reported financial results.[5]

Sales volume and value

Geogrid revenue presented in table VI-1 is the combined net sales of biaxial and triaxial geogrids and reflects U.S. commercial sales and a small share of exports. With the exception of

---

[1] Tensar reported geogrid financial results on the basis of generally accepted accounting principles (GAAP) and for calendar-year periods. Tensar's U.S. geogrid operations are part of its ***. Petitioner's postconference brief, exh. 1 (response to staff questions), p. 12. Staff conducted a verification of Tensar's U.S. producer questionnaire on December 6-7, 2016. Data changes pursuant to verification are reflected in this and other relevant sections of the staff report. Verification report (Tensar), p. 3.

Tenax, another U.S. producer of geogrids, reportedly uses a different production method as compared to Tensar. Conference transcript, p. 35 (Gee). ***. USITC auditor notes (final).

[2] Tensar U.S. producer questionnaire (final phase), response to II-2.

[3] With regard to the impact of production curtailments and employee layoffs on geogrid financial results, Tensar stated that ***. Petitioner's postconference brief, exh. 1 (response to staff questions), pp. 10-11.

[4] Appendix F presents Tensar's financial results on biaxial geogrids and triaxial geogrids.

[5] The Commission's variance analysis is calculated in three parts: sales variance, COGS variance, and SG&A expenses variance. Each part consists of a price variance (in the case of the sales variance) or a cost or expense variance (in the case of the COGS and SG&A expenses variance), and a volume variance. The sales or cost/expense variance is calculated as the change in unit price or per-unit cost/expense times the new volume, while the volume variance is calculated as the change in volume times the old unit price or per-unit cost/expense. As summarized at the bottom of table VI-3, the price variance is from sales, the cost/expense variance is the sum of those items from the COGS and SG&A variances, respectively, and the volume variance is the sum of the volume components of the net sales, COGS, and SG&A expenses variances. In general, the utility of the Commission's variance analysis is enhanced when product mix remains the same throughout the period. While there were reportedly some fluctuations in product mix during the period, petitioner attributed period-to-period changes in average sales value primarily to pricing. Conference transcript, p. 87 (Gee, Lawrence). Petitioner's postconference brief, exh. 1 (response to staff questions), pp. 8-9.

2013, triaxial geogrids accounted for the majority of overall geogrids sales volume (ranging from *** percent in 2013 to *** percent in 2014). Biaxial geogrids sales volume ranged from a high of *** percent of overall geogrids sales volume in 2013 to a low of *** percent in 2014.[6]

While both product categories followed the same full-year directional trend of lower sales volume in 2014 and higher sales volume in 2015, percentage changes in bixaxial geogrids sales volume were larger. According to Tensar, changes in its biaxial sales volume (negative and positive) were largely a function of corresponding changes in average sales value. As shown in table VI-3, the period's only positive price variance (2013-14) was accompanied by the largest full-year decline in volume.[7] In contrast, higher sales volume in 2015, and in interim 2016 compared to interim 2015, was attributed to the effect of reduced average sales value.[8] [9]

Geogrid average sales values, as shown in table VI-1, fluctuated during 2013 through interim 2016 and were mixed in terms of their correlation with changes in polypropylene resin, the primary raw material cost.[10] With the exception of 2014, when average biaxial geogrid increased and triaxial geogrid declined, the average sales values of both product categories shared the same directional pattern. Notwithstanding similarities in the directional trend of sales volume, percentage changes in biaxial geogrid average sales value were more pronounced compared to triaxial geogrid.

Table VI-1
Geogrid: Results of operations of Tensar, 2013-15, January-September 2015, and January-September 2016

* * * * * * *

Table VI-2
Geogrid: Changes in average per square yard values, between fiscal years and partial periods

* * * * * * *

Table VI-3
Geogrid: Variance analysis on the operations of Tensar, 2013-15, January-September 2015, and January-September 2016

* * * * * * *

[6] USITC auditor notes (final).

[7] Tensar stated in its postconference brief that ***. Petitioner's postconference brief, exh. 79.

[8] As described by a Tensar official, "{i}n 2015 we slashed prices even more and reinvigorated our private label program in a last-ditch effort to regain some of our market share from the Chinese. Our sales volume has improved somewhat, but at a huge cost in the form of another severe blow to our bottom line as you can see from our data." Conference transcript, p. 23 (Lawrence). Conference transcript, pp. 96-97 (Gerrish).

[9] ***. November 7, 2016 Tensar response to follow-up questions.

[10] Conference transcript, p. 88 (Lawrence). ***. USITC auditor notes (final).

Cost of goods sold and gross profit or loss

Based on the information reported in Tensar's final-phase U.S. producer questionnaire, raw materials account for around (*** percent of COGS, followed by other factory costs (*** percent), and then direct labor (*** percent). While the components of geogrid COGS are not presented separately in table VI-1,[11] polypropylene resin was identified as the primary raw material cost. A secondary raw material, coloring agent black masterbatch, was also identified.[12] With regard to *** between the directional pattern of the price paid for polypropylene resin (see footnote 11) and average COGS, Tensar indicated that this reflects factors such as the rate of fixed cost absorption and inventory turnover.[13]

Other factory costs, the second largest component of COGS, reflects ". . . depreciation, indirect labor wages and benefits (quality control, maintenance, management, and administration wages and benefits), utilities, taxes and insurance, and operating supplies."[14] Tensar reported that 60 percent of other factory costs are primarily fixed, 25 percent are mixed (fixed and variable), and 15 percent are considered variable. With regard to how capacity utilization impacts average COGS, the company stated that "{t}he cost of production is greatly impacted by changes in production volume. Accordingly, the slow-down in our production caused by sales lost to unfairly-traded subject imports caused these costs to increase on a per unit basis."[15] Table VI-1 shows that average COGS increased to its highest level in 2015 and then was somewhat lower in interim 2016 compared to interim 2015.

Table VI-1 shows that gross profit, on an absolute basis and as a ratio to sales, declined throughout the full-year period and then was somewhat higher in interim 2016 compared to interim 2015. The contraction of gross profit ratio reflects different rates of change in average sales value and COGS (2013-14), as well as different directional patterns (2014-15); i.e., in 2014 average geogrid sales value increased *** percent and average COGS increased *** percent), whereas in 2015 average geogrids sales value declined *** percent and average COGS increased *** percent). The contraction in gross profit ratio was reversed in interim 2016 when average geogrids sales value declined *** percent and corresponding average COGS declined *** percent.

Notwithstanding the full-year contraction in gross profit ratio, total geogrids gross profit in 2015 was only marginally lower than the gross profit generated in 2014 due to an increase in total sales volume. In interim 2016, the improved gross profit ratio noted above, in conjunction with higher sales volume, yielded *** percent higher total gross profit compared to interim 2015.[16]

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[11] Tensar used a ***. Petitioner's postconference brief, exh. 79. November 7, 2016 Tensar response to follow-up questions. ***. USITC auditor notes (final).

[12] Conference transcript, p. 35 (Gee).

[13] ***. November 16, 2016 Tensar response to follow-up question.

[14] Petitioner's postconference brief, exh. 79.

[15] Ibid. ***. Tensar U.S. producer questionnaire (final phase), response to III-4b.

[16] When considering product-specific profitability, ***.

SG&A expenses and operating income or loss

Total SG&A expenses followed the same directional pattern as sales volume during the full-year period, but diverged in the interim period. On an overall basis, geogrid SG&A expense ratios (total SG&A expenses divided by total revenue) increased during the full-year, remaining within a relatively narrow range, and was at its highest level in interim 2015.[17]

While the pattern of operating profit was determined largely by factors impacting gross profit, the modest increase in SG&A expense ratios during the full-year period had the effect of magnifying the contraction in gross profit ratio. In contrast, the lower SG&A expense ratio in interim 2016 compared to interim 2015 amplified the expansion in gross profit ratio.[18]

Interest expense, other expenses, and net income or loss

Below operating income, the *** item reported by Tensar was interest expense, which *** throughout the full-year period and then was somewhat *** in interim 2016 compared to interim 2015 (see table VI-1).[19] In contrast with 2013, when operating profit more than covered interest expense and yielded a *** percent net income ratio (net income or loss divided by total revenue), 2014 and 2015 operating income was only marginally above corresponding interest expense. As a result, 2014 and 2015 net income ratios were only somewhat above breakeven. The improvement in operating profit ratio and absolute operating income in interim 2016 (reflecting higher sales volume, a higher gross profit ratio, and lower SG&A expense ratio) more than covered interest expense and yielded the highest net income ratio of the period.[20]

CAPITAL EXPENDITURES AND RESEARCH AND DEVELOPMENT EXPENSES

Table VI-4 presents Tensar's capital expenditures and research and development (R&D) expenses related to operations on geogrid.[21]

Table VI-4
Geogrid: Capital expenditures and research and development (R&D) expenses of Tensar, 2013-15, January-September 2015, and January-September 2016

* * * * * * *

[17] ***. November 7, 2016 Tensar response to follow-up questions. ***. Verification report (Tensar), p. 6.

[18] ***.

[19] ***. Verification report (Tensar), pp. 3-4.

[20] ***.

[21] Tensar stated that capital expenditures were ***. Petitioner's postconference brief, exh. 1 (response to staff questions), p. 10.

Total geogrid capital expenditures were at their highest level in 2014. As described by Tensar, capital expenditures specific to biaxial geogrid were ***.[22] With regard to triaxial capital expenditures in general, Tensar stated that they were for ***.[23] As shown in table VI-4 and having declined somewhat during the full-year period, R&D expenses were at their highest absolute level in interim 2016.[24]

ASSETS AND RETURN ON INVESTMENT

Table VI-5 presents data on Tensar's total assets, asset turnover (sales divided by total assets), and return on assets.[25]

Table VI-5
Geogrid: Tensar's total assets, asset turnover, and return on assets, 2013-15

* * * * * * *

CAPITAL AND INVESTMENT

The Commission requested U.S. producers of geogrids to describe any actual or potential negative effects on their return on investment or their growth, investment, ability to raise capital, existing development and production efforts (including efforts to develop a derivative or more advanced version of the product), or the scale of capital investments as a result of imports of biaxial integral geogrid from China. Table VI-6 tabulates the responses on actual negative effects on investment, growth and development, as well as anticipated negative effects. Table VI-7 presents the narrative responses of U.S. producers regarding actual and anticipated negative effects on investment, growth and development.[26]

Table VI-6
Geogrid: Negative effects of imports from subject sources on investment, growth, and development since January 1, 2013

* * * * * * *

[22] Tensar U.S. producer questionnaire response (final) to III-13 (note 1).
[23] Tensar U.S. producer questionnaire response (final) to III-13 (note 2).
[24] ***. Verification report (Tensar), p. 7.
[25] With respect to a company's overall operations, staff notes that a total asset value (i.e., the bottom line number on the asset side of a company's balance sheet) reflects an aggregation of a number of assets which in many instances are not product specific. As such, it should be noted that the pattern of asset values reported can reflect changes in underlying asset account balances, as well as period-to-period variations in relevant allocation factors.
[26] ***.

Table VI-7
Geogrid: Narrative responses of U.S. producers regarding actual and anticipated negative effects of imports of biaxial geogrid from China on investment, growth, and development since January 1, 2013

* * * * * * *

PART VII: THREAT CONSIDERATIONS AND INFORMATION ON NONSUBJECT COUNTRIES

Section 771(7)(F)(i) of the Act (19 U.S.C. § 1677(7)(F)(i)) provides that—

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors*[1]*--*
>
> *(I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*
>
> *(II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*
>
> *(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*
>
> *(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*

[1] Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that "The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition."

(V) inventories of the subject merchandise,

(VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,

(VII) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),

(VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).[2]

Information on the nature of the subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V*; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

[2] Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

THE INDUSTRY IN CHINA

The petitioner indicates that the biaxial geogrid industry in China is comprised of more than 75 Chinese producers and exporters.[3] Tensar identified eight firms[4] in China that it estimates have a combined capacity to produce over *** square yards of the subject merchandise in 2014.[5] Tensar asserts that due to the overall lack of transparency regarding companies and operations in China, it is likely that there are additional producers and exporters that were not identified. According to respondents, there are four major biaxial geogrid producers in China: TMP, BOSTD, Feicheng Lianyi, and Tensar China.[6] There is also one smaller producer, CNBM International that runs a single production line intermittently to order.[7] The vast majority of the Chinese companies are believed to be sale entities or phantom companies that would likely establish an arrangement with either TMP, BOSTD or Feicheng Lianyi to fulfill any orders.[8] Responding U.S. importers reported importing from ***.

The Commission issued foreign producers' or exporters' questionnaires to 78 firms believed to produce and/or export biaxial geogrid from China.[9] Usable responses to the Commission's questionnaire were received from one firm: Tensar China.[10] Tensar China experienced a ***. Tensar China's production capacity of biaxial geogrid is calculated based on ***. Tensar China's ***.[11] Tensar China did not provide an estimate of its share of biaxial geogrid production in China or an estimate of its share of exports of biaxial geogrid from China to the United States in 2015. Table VII-1 presents information on the biaxial geogrid operations of Tensar China. Tensar China also reported production of triaxial integral geogrid in 2015.[12]

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[3] Petitioner's prehearing brief, p. 78.

[4] Those firms and their capacities are: *** – *** square yards; TMP – 119.6 million square yards; BOSTD – 31.3 million square yards; Taian Road Engineering Materials Co., Ltd – 29.9 million square yards; Shandong Dageng Project Material Co., Ltd. – 107.6 million square yards; Nanchang Teamgo New Materials Co. Ltd. – 38.0 million square yards; Ningbo – 71.8 million square yards; and HongXiang – 9.6 million square yards.

[5] Petitioner's prehearing brief, pp. 78-82.

[6] Respondents estimate that TMP has a capacity of *** square yards and BOSTD has a capacity of *** square yards. Respondents' posthearing brief, app. 1.

[7] Hearing transcript, p. 132 (Starling).

[8] Hearing transcript, p. 133 (Starling).

[9] These firms were identified through a review of information submitted in the petition and contained in *** records.

[10] In the preliminary phase of these investigations, the Commission received one additional response from Feicheng Lianyi. Tensar China's and Feicheng Lianyi's reported combined capacity in 2014 was *** square yards, combined production was *** square yards, combined commercial shipments was *** square yards, combined total shipments was *** square yards and combined exports to the United States was *** square yards, equivalent to *** percent of reported imports from China. TMP, BOSTD and Feicheng Lianyi did not provide questionnaire responses to the Commission for this final phase.

[11] ***, email correspondence with USITC staff, November 30, 2016.

[12] Tensar China's production capacity in 2015 was *** square yards, beginning-of-period inventories was *** square yards, production was *** square yards, internal consumption/transfers was *** square

(*continued*...)

Table VII-1
Biaxial geogrid: Data on industry in China, 2013-15, January to September 2015, and January to September 2016 and projections 2016 and 2017

* * * * * * *

U.S. INVENTORIES OF IMPORTED MERCHANDISE

Table VII-2 presents data on U.S. importers' reported inventories of biaxial geogrid.[13]

Table VII-2
Biaxial geogrid: U.S. importers' inventories, 2013-15, January to September 2015, and January to September 2016

* * * * * * *

U.S. IMPORTERS' OUTSTANDING ORDERS

The Commission requested importers to indicate whether they imported or arranged for the importation of geogrid from China after September 30, 2016. Importers *** reported that they arranged such shipments. Table VII-3 presents data reported by U.S. importers concerning their arranged imports of geogrids.

Table VII-3
Biaxial geogrid: Arranged imports, October 2016 – September 2017

* * * * * * *

ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

There are no known antidumping or countervailing duty investigations on biaxial geogrid in third country markets.

INFORMATION ON NONSUBJECT COUNTRIES

In assessing whether the domestic industry is materially injured or threatened with material injury "by reason of subject imports," the legislative history of the Act states "that the Commission must examine all relevant evidence, including any known factors, other than the

(…*continued*)
yards, commercial shipments was *** square yards, export shipments to the United States was *** square yards, export shipments to non-United States markets was *** square yards, total shipments was *** square yards, and end-of-period inventories was *** square yards. ***, email correspondence with USITC staff, December 6, 2016.

[13] As discussed in part IV, U.S. importers did not import triaxial geogrid during the period for which data were collected.

dumped or subsidized imports, that may be injuring the domestic industry, and that the Commission must examine those other factors (including non-subject imports) 'to insure that it is not attributing injury from other sources to the subject imports.'"[14]

Tensar ***. In addition, there is known production in Greece (Thrace Group), Italy (Tenax S.p.A.), and Poland (Peitrucha Group).[15] As noted in part IV, Greece was the only reported source of nonsubject imports during the period of investigation.

[14] *Mittal Steel Point Lisas Ltd. v. United States,* Slip Op. 2007-1552 at 17 (Fed. Cir. Sept 18, 2008), quoting from Statement of Administrative Action on Uruguay Round Agreements Act, H.R. Rep. 103-316, Vol. I at 851-52; *see also Bratsk Aluminum Smelter v. United States,* 444 F. 3d 1369 (Fed. Cir. 2006).

[15] U.S. importers' questionnaire responses.

APPENDIX A

FEDERAL REGISTER NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, *Federal Register* notices issued by the Commission and Commerce during the current proceeding.

Citation	Title	Link
81 FR 3157 January 20, 2016	*Certain Biaxial Integral Geogrid Products from China; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.gpo.gov/fdsys/pkg/FR-2016-01-20/pdf/2016-00931.pdf
81 FR 7745 February 16, 2016	*Certain Biaxial Integral Geogrid Products from the People's Republic of China: Initiation of Countervailing Duty Investigation*	https://www.gpo.gov/fdsys/pkg/FR-2016-02-16/pdf/2016-03071.pdf
81 FR 7755 February 16, 2016	*Certain Biaxial Integral Geogrid Products from the People's Republic of China: Initiation of Less-Than-Fair-Value Investigation*	https://www.gpo.gov/fdsys/pkg/FR-2016-02-16/pdf/2016-03086.pdf
81 FR 11591 March 04, 2016	*Certain Biaxial Integral Geogrid Products from China*	https://www.gpo.gov/fdsys/pkg/FR-2016-03-04/pdf/2016-04701.pdf
81 FR 19954 April 06, 2016	*Certain Biaxial Integral Geogrid Products from the People's Republic of China: Notice of Postponement of Preliminary Determination in the Countervailing Duty Investigation*	https://www.gpo.gov/fdsys/pkg/FR-2016-04-06/pdf/2016-07901.pdf
81 FR 38131 June 13, 2016	*Certain Biaxial Integral Geogrid Products from the People's Republic of China: Postponement of Preliminary Determination of Antidumping Duty Investigation*	https://www.gpo.gov/fdsys/pkg/FR-2016-06-13/pdf/2016-13953.pdf

Table continued on the next page

Citation	Title	Link
81 FR 41292 June 24, 2016	*Countervailing Duty Investigation of Certain Biaxial Integral Geogrid Products from the People's Republic of China: Preliminary Determination and Alignment of Final Determination with Final Antidumping Duty Determination*	https://www.gpo.gov/fdsys/pkg/FR-2016-06-24/pdf/2016-15007.pdf
81 FR 48384 July 25, 2016	*Certain Biaxial Integral Geogrid Products from the People's Republic of China: Amended Preliminary Results of Countervailing Duty Investigation*	https://www.gpo.gov/fdsys/pkg/FR-2016-07-25/pdf/2016-17565.pdf
81 FR 56584 August 22, 2016	*Certain Biaxial Integral Geogrid Products from the People's Republic of China: Affirmative Preliminary Determination of Sales at Less Than Fair Value, Affirmative Determination of Critical Circumstances, in Part, and Postponement of Final Determination.*	https://www.gpo.gov/fdsys/pkg/FR-2016-08-22/pdf/2016-20024.pdf
81 FR 63495 September 15, 2016	*Biaxial Integral Geogrid Products from China; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations*	https://www.gpo.gov/fdsys/pkg/FR-2016-09-15/pdf/2016-22143.pdf
81 FR 65672 September 23, 2016	*Biaxial Integral Geogrid Products from China; Revised Schedule for Hearing in Final Investigations*	https://www.gpo.gov/fdsys/pkg/FR-2016-09-23/pdf/2016-22940.pdf
81 FR 91136 December 16, 2016	*Certain Biaxial Integral Geogrid Products from the People's Republic of China: Extension of Final Determination of Antidumping Duty Investigation*	https://www.gpo.gov/fdsys/pkg/FR-2016-12-16/pdf/2016-30311.pdf

Table continued on the next page

Citation	Title	Link
82 FR 3282 January 11, 2016	*Countervailing Duty Investigation of Certain Biaxial Integral Geogrid Products from the People's Republic of China: Final Affirmative Determination and Final Determination of Critical Circumstances, in Part*	https://www.gpo.gov/fdsys/pkg/FR-2017-01-11/pdf/2017-00429.pdf
82 FR 3284 January 11, 2016	*Certain Biaxial Integral Geogrid Products from the People's Republic of China: Final Determination of Sales at Less Than Fair Value*	https://www.gpo.gov/fdsys/pkg/FR-2017-01-11/pdf/2017-00428.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

Those listed below are scheduled to appear as witnesses at the United States International Trade Commission's hearing:

Subject: Biaxial Integral Geogrid Products from China

Inv. Nos.: 701-TA-554 and 731-TA-1309 (Final)

Date and Time: December 21, 2016 - 9:30 am

Sessions will be held in connection with these investigations in the Main Hearing Room (room 101), 500 E Street, S.W., Washington, DC.

OPENING REMARKS:	**TIME ALLOCATION:**
Petitioner (**Jeffrey D. Gerrish**, Skadden, Arps, Slate, Meagher and Flom LLP)	5 minutes
Respondents (**Yohai Baisburd**, Dentons US LLP)	5 minutes

In Support of the Imposition of Antidumping and Countervailing Duty Orders:	**TIME ALLOCATION:**
Skadden, Arps, Slate, Meagher and Flom LLP Washington, DC on behalf of	60 minutes

Tensar Corporation

Mike Lawrence, President and CEO, Tensar Corporation

Scott Edgecombs, Executive Vice President and General Manager, Grid Western Hemisphere, Tensar Corporation

Robert F. Briggs, Executive Vice President, General Counsel, and Secretary, Tensar Corporation

William Shelton, Vice President, Materials Technology, Tensar Corporation

In Support of the Imposition of
Antidumping and Countervailing Duty Orders (continued):

Bryan C. Gee, Director of Marketing, Tensar Corporation

Ann Shockley, Director of Materials and SIOP, Tensar Corporation

Carey Witt, President, GeoSolutions, Inc.

Michael Coleman, Vice President, Coleman-Moore Company

Dave Brooks, President, ACF Environmental

Jeffrey D. Gerrish)
Nathaniel B. Bolin) – OF COUNSEL
Luke A. Meisner)

In Opposition to the Imposition of **TIME**
Antidumping and Countervailing Duty Orders: **ALLOCATION:**

Dentons US LLP 60 minutes
Washington, DC
on behalf of

Hanes Companies, Inc.
Hill Country Site Supply

John Dowdell, President, Hanes Companies, Inc.

Bobby Starling, Jr., Vice President, Hanes Companies, Inc.

Clay Cashatt, Vice President, Hill Country Site Supply, an operating branch of Hanes Companies, Inc.

Yohai Baisburd)
Mark P. Lunn) – OF COUNSEL
Daniel Morris)

REBUTTAL/CLOSING REMARKS:

Petitioner (**Jeffrey D. Gerrish**, Skadden, Arps, Slate, Meagher and Flom LLP)
Respondents (**Yohai Baisburd**, Dentons US LLP)

-END-

APPENDIX C

SUMMARY DATA

Table C-1
Geogrids: Summary data concerning the U.S. market, 2013-15, January to September 2015, and January to September 2016
(Quantity=1,000 square yards; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per square yard; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to September		Calendar year			Jan-Sept
	2013	2014	2015	2015	2016	2013-15	2013-14	2014-15	2015-16
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. importers' U.S. shipments of imports from:									
Subject sources (China biaxial):									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Nonsubject sources (fn3):									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
U.S. producers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***
Hourly wages (dollars)	***	***	***	***	***	***	***	***	***
Productivity (square yards per hour)	***	***	***	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***	***	***	***
Net sales:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***	***
Net income or (loss)	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	***	***	***	***	***	***	***	***	***
Unit net income or (loss)	***	***	***	***	***	***	***	***	***
COGS/sales (fn1)	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***
Net income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.
fn3.--Nonsubject sources includes triaxial geogrids from any source including China as well as and biaxial geogrids from sources other than China. ***.

Source: Compiled from data submitted in response to Commission questionnaires.

Table C-2
Biaxial geogrids: Summary data concerning the U.S. market, 2013-15, January to September 2015, and January to September 2016
(Quantity=1,000 square yards; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per square yard; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to September		Calendar year			Jan-Sept
	2013	2014	2015	2015	2016	2013-15	2013-14	2014-15	2015-16
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
China	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
China	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. importers' U.S. shipments of imports from:									
China:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Nonsubject sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
U.S. producers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***
Hourly wages (dollars)	***	***	***	***	***	***	***	***	***
Productivity (square yards per hour)	***	***	***	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***	***	***	***
Net sales:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***	***
Net income or (loss)	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	***	***	***	***	***	***	***	***	***
Unit net income or (loss)	***	***	***	***	***	***	***	***	***
COGS/sales (fn1)	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***
Net income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.

Source: Compiled from data submitted in response to Commission questionnaires.

Table C-3
Triaxial geogrids: Summary data on U.S. producers 2013-15, January to September 2015, and January to September 2016
(Quantity=1,000 square yards; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per square yard; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to September		Calendar year			Jan-Sept
	2013	2014	2015	2015	2016	2013-15	2013-14	2014-15	2015-16
U.S. producers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***
Hourly wages (dollars)	***	***	***	***	***	***	***	***	***
Productivity (square yards per hour)	***	***	***	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***	***	***	***
Net sales:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***	***
Net income or (loss)	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	***	***	***	***	***	***	***	***	***
Unit net income or (loss)	***	***	***	***	***	***	***	***	***
COGS/sales (fn1)	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***
Net income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.

Source: Compiled from data submitted in response to Commission questionnaires.

APPENDIX D

U.S. IMPORTERS' RESPONSES TO SIX DOMESTIC LIKE PRODUCT FACTORS QUESTIONS

Table D-1
Geogrid: U.S. importers' comparison of biaxial geogrid with triaxial geogrid based on six domestic like product factors

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APPENDIX E

STATE AND FEDERAL GOVERNMENT SPECIFICATIONS AND APPROVAL LIST

Table E-1
Geogrid: State and federal government specifications, approved product lists and special provisions for biaxial geogrid and triaxial geogrid

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APPENDIX F

FINANCIAL RESULTS ON BIAXIAL GEOGRID AND TRIAXIAL GEOGRID

Table F-1
Biaxial geogrid: Results of operations of U.S. producer, 2013-15, January-September 2015, and January-September 2016

* * * * * * *

Table F-2
Biaxial geogrid: Changes in average per square yard values, between fiscal years and partial periods

* * * * * * *

Table F-3
Triaxial geogrid: Results of operations of U.S. producer, 2013-15, January-September 2015, and January-September 2016

* * * * * * *

Table F-4
Triaxial geogrid: Changes in average per square yard values, between fiscal years and partial periods

* * * * * * *