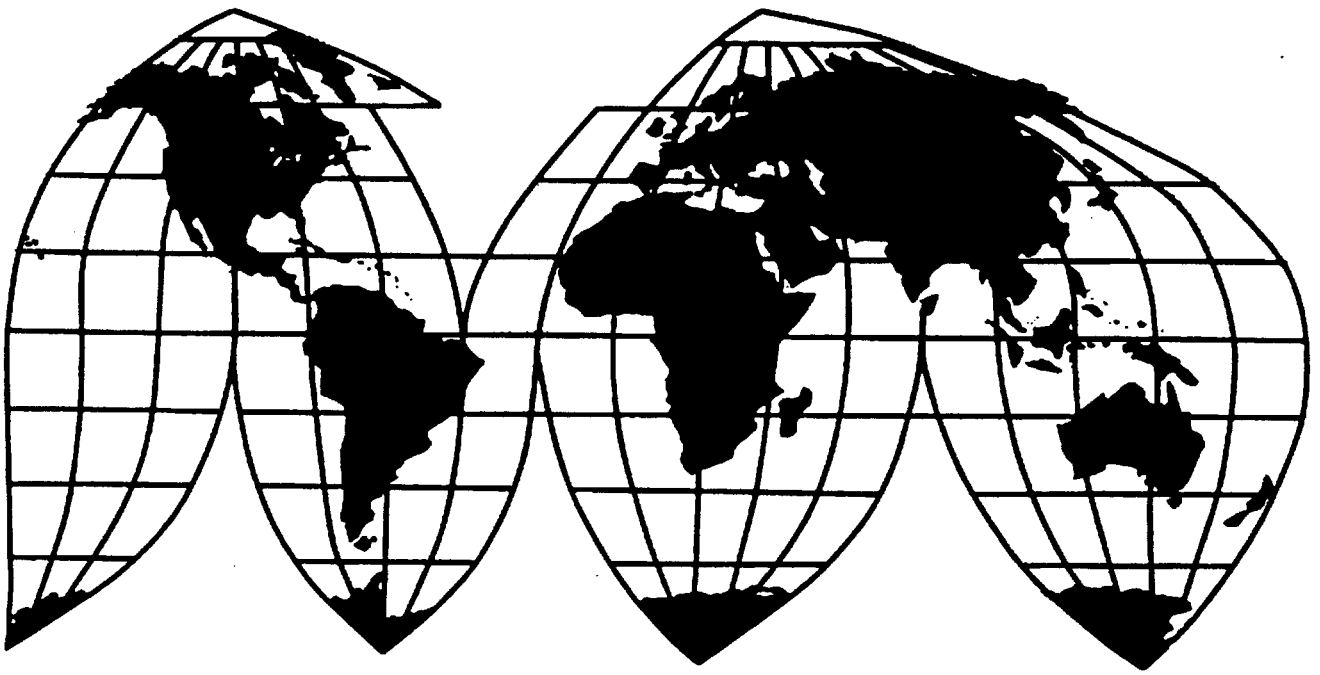
Non-Malleable Cast Iron Pipe Fittings From China

Investigation No. 731-TA-990 (Final)

Publication 3586 **March 2003**

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Note.--Information that would reveal confidential operations of individual concerns may not be published and therefore has been deleted from this report.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

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 731-TA-990 (Final)

NON-MALLEABLE CAST IRON PIPE FITTINGS FROM CHINA

DETERMINATION

On the basis of the record[1] developed in the subject investigation, the United States International Trade Commission (Commission) determines, pursuant to section 735(b) of the Tariff Act of 1930 (19 U.S.C. § 1673d(b)) (the Act), that an industry in the United States is threatened with material injury by reason of imports from China of non-malleable cast iron pipe fittings, provided for in subheadings 7307.11.00 and 7307.19.30 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). The Commission further determines that it would not have found material injury but for the suspension of liquidation.

BACKGROUND

The Commission instituted this investigation effective February 21, 2002, following receipt of a petition filed with the Commission and Commerce by Anvil International, Inc., Portsmouth, NH, and Ward Manufacturing, Inc., Blossburg, PA. The final phase of the investigation was scheduled by the Commission following notification of a preliminary determination by Commerce that imports of non-malleable cast iron pipe fittings from China were being sold at LTFV within the meaning of section 733(b) of the Act (19 U.S.C. § 1673b(b)). Notice of the scheduling of the final phase of the Commission's investigation 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* of October 24, 2002 (67 FR 65360). The hearing was held in Washington, DC, on February 11, 2003, and all persons who requested the opportunity were permitted to appear in person or by counsel.

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

VIEWS OF THE COMMISSION

Based on the record in this investigation, we determine that an industry in the United States is threatened with material injury by reason of imports of non-malleable and certain ductile cast iron pipe fittings from China that are sold in the United States at less than fair value.

I. 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 the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[1] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Act"), defines the relevant domestic 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."[2] In turn, the 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 . . . ."[3]

The decision regarding the appropriate domestic like product(s) 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.[4] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[5] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[6] Although the Commission must accept the determination of the Department of Commerce ("Commerce") as to the scope of the imported merchandise that has been found to be subsidized or sold at LTFV, the Commission determines what domestic product is like the imported articles Commerce has identified.[7]

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[1] 19 U.S.C. § 1677(4)(A).

[2] 19 U.S.C. § 1677(4)(A).

[3] 19 U.S.C. § 1677(10).

[4] See, e.g., 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: (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).

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

[6] Nippon Steel, 19 CIT at 455; Torrington, 747 F. Supp. at 748-49. See also S. Rep. No. 96-249 at 90-91 (1979) (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.").

[7] Hosiden Corp. v. Advanced Display Mfrs., 85 F.3d 1561, 1568 (Fed. Cir. 1996) (Commission may find single

(continued...)

B. Product Description

Commerce's final determination defined the imported merchandise within the scope of this investigation as:

> finished and unfinished non-malleable cast iron pipe fittings with an inside diameter ranging from 1/4 inch to 6 inches, whether threaded or unthreaded, regardless of industry or proprietary specifications. The subject fittings include elbows, ells, tees, crosses, and reducers as well as flanged fittings. These pipe fittings are also known as "cast iron pipe fittings" or "gray iron pipe fittings." These cast iron pipe fittings are normally produced to American Standards of Testings and Materials (ASTM) A-126 and American Society of Mechanical Engineers (ASME) B.16.4 specifications and are threaded to ASME B1.20.1 specifications. Most building codes require that these products are Underwriters Laboratories (UL) certified. The scope does not include cast iron soil pipe fittings or grooved fittings or grooved couplings.
>
> Fittings that are made out of ductile iron that have the same physical characteristics as the gray or cast iron fittings subject to the scope above or which have the same physical characteristics and are produced to ASME B.16.3, ASME B.16.4, or ASTM A-395 specifications, threaded to ASME B1.20.1 specifications and UL certified, regardless of metallurgical differences between gray and ductile iron, are also included in the scope of this petition. These ductile fittings do not include grooved fittings or grooved couplings. Ductile cast iron fittings with mechanical joint ends (MJ), or Push On ends (PO), or flanged end and produced to the American Water Works Association (AWWA) specifications - AWWA C110 or AWWA C153 are not included.[8]

Accordingly, the subject imports include non-malleable cast iron pipe fittings as well as certain ductile cast iron pipe fittings, such as those that can be used in traditionally non-malleable pipe fitting applications. Pipe fittings generally are used to connect the bores of two or more pipes or tubes, connect a pipe to another apparatus, change the direction of fluid flow, or close a pipe. Cast iron, the material from which the subject fittings are made, is a general term for alloys which are primarily composed of iron, carbon (more than two percent), and silicon.[9]

Non-malleable iron (also referred to as gray iron) is defined by the ASTM as cast iron in which fine graphite flakes are formed during cooling.[10] Non-malleable irons have tensile strengths ranging

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[7] (...continued)
like product corresponding to several different classes or kinds defined by Commerce); Torrington, 747 F. Supp. at 748-752 (affirming Commission determination of six like products in investigations where Commerce found five classes or kinds).

[8] See 68 Fed. Reg. 7765, 7766 (Feb. 18, 2003) (full names of ASTM, ASME, and AWWA, and conforming changes, added). Imports of covered merchandise are classifiable under statistical reporting numbers 7307.11.0030, 7307.11.0060, 7307.19.3060, and 7307.19.3085 of the Harmonized Tariff Schedule of the United States (HTS) with normal trade relations tariff rates applicable to imports from China in 2003 of 4.8 percent ad valorem for non-malleable (gray) fittings and 5.6 percent ad valorem for ductile fittings. Id.

[9] Confidential Report (CR) at I-7, Public Report (PR) at I-5.

[10] CR at I-7, PR at I-5.

from 20,000 to 58,000 psi.[11] Pipe fittings produced from non-malleable cast iron are used primarily in fire protection/sprinkler systems, accounting for approximately 90 to 95 percent of shipments, but also are used in the steam conveyance heating systems in older buildings and other applications.[12] Non-malleable cast iron pipe fittings primarily are produced to ASTM A-126 and ASME B16.4 specifications.[13]

Ductile iron fittings are cast from iron to which a very small amount of magnesium has been added in the liquid state to induce the formation of graphites as spheroids or nodules.[14] The tensile strength of ductile iron exceeds that of non-malleable cast iron and ranges from 60,000 to 100,000 psi.[15] Ductile fittings corresponding to the dimensions of the subject merchandise generally are used in fire protection/sprinkler applications.

C. Domestic Like Product

In the preliminary phase of this investigation, the Commission considered a request to define non-malleable and ductile cast iron fittings as separate domestic like products, and another request to define the like product more broadly than the scope to include grooved fittings, ductile flanged fittings, and fittings with an inside diameter greater than six inches. The Commission found there was no indication on the preliminary record of domestic production of ductile cast iron fittings and that non-malleable cast iron pipe fittings are the domestic product most similar in physical characteristics and uses with the subject imported ductile fittings. The Commission also declined to broaden the domestic like product beyond articles coterminous with the scope. The Commission, therefore, concluded that there was a single domestic like product, non-malleable fittings, coextensive with the scope of the investigation.[16]

Petitioners support the Commission's finding in the preliminary determination of one domestic like product consisting of pipe fittings corresponding to the scope. No respondent parties have objected to the Commission's like product definition in the preliminary determination.[17]

Ductile Cast Iron Pipe Fittings. In the preliminary phase of this investigation there was no indication of domestic production of ductile fittings corresponding to the scope. The Commission learned in the final phase that Frazier and Frazier, a job shop foundry in Coolidge, Texas, produces such fittings.[18] Therefore, we have considered whether, under the Commission's traditional six-factor test, ductile fittings are a separate like product.

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[11] CR at I-8, PR at I-6.

[12] Id. The steam conveyance market represents 5 percent of shipments, while other applications constitute less than 5 percent of shipments. Id. Other applications include use in piping systems for the conveyance of such materials as paint and molasses and use as floor flanges. CR at I-8, n.28, II-6, PR at I-6, n.28, II-4.

[13] CR at I-8, PR at I-6.

[14] CR at I-8 - I-9, PR at I-6.

[15] CR at I-9, PR at I-6 - I-7.

[16] Non-Malleable Cast Iron Pipe Fittings, Inv. No. 731-TA-990 (Preliminary), USITC Pub. 3500 (April 2002) at 6.

[17] The importers that raised like product issues in the preliminary phase of this investigation did not submit briefs or appear at the hearing in the final phase of the investigation.

[18] CR at III-4, PR at III-3. Frazier's production of ductile fittings accounted for *** percent of combined non-malleable and ductile fitting production in the United States in 2001. CR and PR at Table III-1.

Ductile fittings are comparable to non-malleable fittings in castability, surface hardenability, and corrosion resistance. Ductile fittings are inferior to non-malleable fittings in ease of machining and vibration damping, and are superior in elastic properties, impact resistance, yield strength/weight, and wear resistance.[19] Notwithstanding similarities and differences in the types of iron, both non-malleable cast iron fittings and ductile cast iron fittings are used primarily in fire protection/sprinkler applications.[20] Both ductile and non-malleable pipe fittings are produced using the sand casting method, and can be produced in the same facilities using the same processes and employees.[21] The principal differences between the two articles lie in the type of molten cast iron used in the process and the thickness of the walls of the fitting.[22] While certain perceived differences were reported relating to physical properties and individual users' preferences, ductile and non-malleable fittings generally are interchangeable in their dominant application, fire protection/sprinkler systems.[23] In addition, ductile fittings are sold through the same channels of distribution as the non-malleable fittings.[24] [25]

In conclusion, while there are physical differences between the two articles and an individual contractor or end user may have a preference for one or the other, both can be produced in the same facilities using the same production methods and workers, they generally are interchangeable, and have similar channels of distribution. In light of those factors, we find that ductile fittings are part of the single domestic like product coextensive with the scope.

Grooved Fittings. Grooved fittings and couplings, which are produced from ductile or malleable cast iron, are different forms of fittings in which a split coupling attaches to a circumferential groove near the end of each piece to be joined.[26] This contrasts with fittings within the scope, which typically are threaded. Although grooved fittings can be produced on the same equipment and machinery used to

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[19] CR at I-9, PR at I-7.

[20] Id.

[21] CR at I-13 - I-15, I-19, PR at I-9 - I-10, I-13.

[22] CR at I-14, I-19, PR at I-10, I-13. To produce ductile iron, molten, low-sulfur iron is poured into a pressure ladle where it is treated, or "inoculated," with magnesium. CR at I-14, I-15, PR at I-10. Production of ductile iron fittings involves a longer and more closely controlled process. Although the cost of producing a ductile product is greater than the cost of producing a comparable non-malleable product, the greater tensile strength of ductile iron allows specifications to be met with a thinner-walled cast iron fitting, and therefore with less iron material input, than is needed when producing a non-malleable cast iron with the same inside diameter. Thus, the size and configuration of the mold cavity in which the fitting is cast may depend not only upon the configuration and inside diameter of the fitting being produced, but also upon whether the fitting is of non-malleable or ductile iron. CR at I-14, PR at I-10.

[23] CR at I-17 - I-19, PR at I-12 - I-13. One ***, although ***, argues that interchangeability between non-malleable fittings and ductile fittings is limited by the existing experience of the users, ***. CR at I-18, PR at I-12. In that regard, differences perceived by customers relate to the products' differing physical properties and individual users' preferences rather than to a lack of interchangeability. CR at I-18 - I-19, PR at I-12 - I-13.

[24] CR at I-18, PR at I-12. One *** maintained that, although some distributors carry both non-malleable and ductile fittings, most deal with one type of fitting. It contends that users in the mid-west and north-east markets prefer ductile fittings while those in the west coast and south prefer non-malleable fittings. Id.

[25] The record does not include information on prices of individual models of domestic ductile fittings to permit comparison of prices of non-malleable and ductile fittings. Frazier did not report sales of any of the four ductile products (products 2, 4, 6, and 8) for which pricing information was requested in the questionnaire. See CR and PR at Tables V-1 - V-8.

[26] CR at I-12, PR at I-8.

produce the merchandise like the subject merchandise, and Anvil produces ductile grooved fittings in the same facilities with the same workers as used to produce merchandise corresponding to the scope,[27] the company believed to account for the vast majority of domestic grooved fitting production, Victaulic, does not manufacture merchandise corresponding to the scope.[28] Grooved fittings are sold through the same channels as the products corresponding to the scope, with the possible exception that gooved products may not be sold through manufacturers' representatives.[29] However, grooved fittings are perceived as a different product by customers and producers and are a higher priced product.[30] For these reasons, on balance, we find that the record does not support broadening the domestic like product to include grooved fittings.

Fittings over six inches. Non-malleable fittings, whether larger or smaller than six inches in inside diameter, share the same chemical composition. Unlike the smaller fittings, fittings larger than six inches in inside diameter generally are not threaded, but more often are flanged, grooved, or welded.[31] Fittings larger than six inches in inside diameter typically are made to specifications of the AWWA and often are used in waterworks applications.[32] This is in contrast to the smaller fittings within the scope, which typically are made to ASTM specifications and are used primarily in fire prevention/sprinkler applications.[33] Anvil produces the larger fittings using the same equipment and employees as smaller fittings, although ***.[34] Views on similarities in distribution channels and price were mixed.[35] On balance, we do not find that the domestic like product should be broadened to include fittings greater than six inches in inside diameter.

Ductile flanged fittings. Domestic producers did not report domestic production of ductile flanged fittings that would otherwise correspond to merchandise within the scope.[36] Accordingly, there is no data on domestic ductile flanged fittings that could be included in any broadened like product

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[27] CR at III-2 - III-3, PR at III-1 - III-2.

[28] Id., Conference Transcript at 9.

[29] CR and PR at Appendix D, D-10.

[30] CR and PR at Appendix D, D-10. *** stated in its questionnaire response that a grooved fitting is perceived to be a more "engineered," labor saving product over threaded, and can be used on pipes of a broad range of materials, whereas subject fittings are limited to use in iron and steel pipe applications. Id. Concerning perceptions, *** stated that subject fittings generally are used in 2 inch and below sizes, whereas grooved fittings are generally used in 2 inch and higher sizes. Id. Regarding the higher price of grooved fittings, responses indicate that the grooved fittings are, nonetheless, easier to install and one *** stated that ease of installation outweighs the price differences. CR and PR at Appendix D, D-11.

[31] CR and PR at Appendix D, D-6; see also Conference Transcript at 81-84, 106, and 154.

[32] CR and PR at Appendix D, D-7.

[33] Id.

[34] See final phase questionnaire responses of Anvil, Ward, and Frazier.

[35] CR and PR at Appendix D, D-7 - D-8. Regarding prices, there appeared to be agreement that price on a per pound basis is the same for fittings up to six inches and those above six inches, although *** stated that the waterworks market allows for higher margins, and *** stated that the price per pound may increase for dimensions greater than 12 inches. Id. at D-8.

[36] CR and PR at Table C-6. U.S. Pipe indicated during the final phase of the investigation that it produces ***. CR at I-15, n.65, PR at I-11, n.65. However, U.S. Pipe did not provide a questionnaire response, and no other responses indicated U.S. production of the product.

analysis. Any issue regarding possible broadening of the domestic like product to include ductile flanged fittings is therefore moot.

For the reasons stated above, we find the domestic like product to be non-malleable and ductile cast iron pipe fittings corresponding to the scope.

II. DOMESTIC INDUSTRY

The domestic industry is defined as "the producers as a [w]hole of a domestic like product ...."[37] In defining the domestic industry, the Commission's general practice has been to include in the industry all domestic production of the domestic like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.[38]

Based on our domestic like product finding, we find that the domestic industry consists of all producers of non-malleable and ductile cast iron pipe fittings corresponding to the scope.[39]

III. MATERIAL INJURY BY REASON OF LESS THAN FAIR VALUE IMPORTS

In the final phase of antidumping duty investigations, the Commission determines whether an industry in the United States is materially injured by reason of the imports under investigation.[40] In making this determination, the Commission must consider the volume of 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.[41] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[42] In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on

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[37] 19 U.S.C. § 1677(4)(A).

[38] See United States Steel Group v. United States, 873 F. Supp. 673, 681-84 (Ct. Int'l Trade 1994), aff'd, 96 F. 3d 1352 (Fed. Cir. 1996).

[39] *** imported *** short tons of subject merchandise, valued at $***. CR at III-3 - III-4, PR at III-2 - III-3. Accordingly, *** is a related party under the statute. 19 U.S.C. § 1677(4)(B) (allowing the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers). Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each case. Sandvik AB v. United States, 721 F. Supp. 1322, 1331-32 (Ct. Int'l Trade 1989), aff'd without opinion, 904 F.2d 46 (Fed. Cir. 1990); Empire Plow Co. v. United States, 675 F. Supp. 1348, 1352 (Ct. Int'l Trade 1987). However, we conclude that appropriate circumstances do not exist to exclude *** from the domestic industry. *** production, reflecting *** percent of total domestic production in 2001 (CR and PR at Table III-1), indicates that *** is focused primarily on domestic production, particularly given that *** importation of subject merchandise from China *** was equivalent to *** percent of *** production in that period. CR and PR at IV-1, n.1. *** does not appear to have obtained any special advantage from its related party status, as ***. CR and PR at Tables VI-1, VI-2. For these reasons, we do not find appropriate circumstances to exclude *** from the domestic industry under the related parties provision of the statute.

[40] 19 U.S.C. § 1673d(b).

[41] 19 U.S.C. § 1677(7)(B)(i). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each [such] factor . . . [a]nd explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B). See also, Angus Chemical Co. v. United States, 140 F.3d 1478 (Fed. Cir. 1998).

[42] 19 U.S.C. § 1677(7)(A).

the state of the industry in the United States.[43] 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."[44]

For the reasons discussed below, we determine that the domestic industry is not materially injured by reason of subject imports from China found to be sold in the United States at LTFV.

A. Conditions of Competition

The following conditions of competition are pertinent to our analysis in this investigation. Subject cast iron pipe fittings are sold in a variety of configurations, dimensions, and compositions, and the decision to use a particular fitting depends upon the system into which the fittings will be integrated. Approximately 90 to 95 percent of non-malleable/ductile cast iron pipe fitting shipments are used in fire protection/sprinkler systems.[45] Demand for subject cast iron fittings and the domestic like product is ultimately derived from demand for end uses in which they are employed.[46] Apparent U.S. consumption of non-malleable/ductile cast iron fittings, by weight, declined from *** short tons in 1999 to *** short tons in 2001, a decrease of *** percent. Apparent U.S. consumption was only *** short tons in the first nine months of 2002, *** percent lower than the *** short tons in the same period in 2001.[47] [48]

The petitioners, Anvil and Ward, accounted for *** percent of production of the domestic like product in 2001, and Frazier accounted for *** percent of production.[49] Anvil and Ward also identified various jobbing facilities and vendors from which they purchased small amounts of non-malleable castings, amounting to *** percent of Anvil's production and *** percent of Ward's production in

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[43] 19 U.S.C. § 1677(7)(C)(iii).

[44] Id.

[45] CR at I-8, PR at I-6.

[46] CR at II-6, PR at II-4.

[47] CR and PR at Tables IV-3, C-1. A range of perceptions were expressed by individual producers, importers, and purchasers concerning demand changes over the period considered. CR at II-6, PR at II-4. Data provided by parties, however, confirm the decline in demand suggested by trends in apparent U.S. consumption. Nonresidential building construction decreased by 4 percent between 2000 and 2001. Star Pipe Postconference Brief, Exhibit 2 at 3. Petitioners argued that new commercial construction indices omit demand derived from retro-fitting commercial buildings with sprinkler systems and that data on domestic shipments of sprinkler heads, collected by the National Fire Sprinkler Association (NFSA), would provide a better indication of demand than the data on total apparent consumption gathered by the Commission. Petitioners' Posthearing Brief at 6-7 and Exhibit 2. The data submitted by petitioners show a decline between 1999 and 2001, albeit a *** one, *** percent. Petitioner's Posthearing Brief at 6, Appendix 2. Petitioners' sprinkler head shipment data shows a *** decline in 2002, *** percent, than occurred between 1999 and 2001, *** percent. Id.

[48] We note that the weight of a ductile fitting for use in a particular application is less than the weight of the comparable non-malleable fitting owing to the thinner walls of the equivalent ductile fitting. For the period as a whole, there was no significant shift toward lighter ductile fittings that would explain the decline in apparent U.S. consumption observed over the period examined. CR and PR at Tables C-2, C-3. Compare CR and PR at Tables C-1 and C-3: by quantity, ductile fittings accounted for *** percent of apparent U.S. consumption of ductile and non-malleable fittings in 1999 and *** percent in interim 2002; by value, they accounted for *** percent of apparent U.S. consumption in 1999 and *** percent in interim 2002.

[49] CR and PR at Table III-1.

2001.[50]

In 2001, Anvil closed its non-malleable cast iron pipe fitting facilities in Statesboro, Georgia. The company moved the casting equipment to its Columbia, Pennsylvania facility, and invested significantly in that facility, at which it did not previously produce non-malleable cast iron pipe fittings. Anvil now produces non-malleable, malleable, and ductile grooved fittings at the Columbia facility, sharing production equipment and employees across product lines.[51]

Purchasers focus on quality, supply, and price considerations.[52] A majority of purchasers view U.S. and Chinese non-malleable and ductile fittings as comparable in terms of supply and quality issues, while every purchaser but one ranked the Chinese product as superior in terms of lower price (U.S. producers had advantages in terms of delivery and product range).[53] Nine of 11 purchasers report that U.S. and Chinese non-malleable and ductile fittings are used in the same applications.[54] Use of the domestic like product, however, may be required in government projects to which "buy American" provisions apply, estimated to account for 5 to 20 percent of all projects.[55] Further, separate from such legal requirements, there may be a strong preference for the domestic product in certain projects, particularly ones in which the workers are members of trade unions.[56] Otherwise, the record suggests a high degree of substitutability among subject imports, nonsubject imports, and domestically produced non-malleable/ductile cast iron pipe fittings.

The record indicates that there is no market for the subject merchandise in China, that all Chinese production during 1999 - 2001 was exported, that *** exports from China of the merchandise

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[50] CR at III-3, PR at III-2. Those purchases are included in the data supplied by Anvil and Ward. Id., CR at III-4, n.9, VI-1, n.2; PR at III-3, n.9, VI-1, n.2.

[51] CR at III-2 - III-3, PR at III-1 - III-2.

[52] See CR and PR at Table II-1 (quality ranks first as "most important factor considered when selecting a supplier," followed by price/cost and availability) and CR and PR at Table II-2 (consistency and meeting specifications "very important" to 12 purchasers, supply reliability and availability "very important" to 10-11 purchasers, lowest price "very important" to 8 purchasers).

[53] CR and PR at Table II-2. These perceptions are consistent with other elements of the record, such as the fact that virtually all purchasers certified or prequalified product (CR at II-11, PR at II-7) and inventories of the subject merchandise from China in the United States are substantial and growing (CR and PR at Table VII-2).

[54] CR at II-12, PR at II-8. See also CR at II-6 - II-8, PR at II-4 - II-5. All domestic producers and seven of nine importers reported that U.S. and subject Chinese non-malleable/ductile cast iron pipe fittings are used interchangeably. CR at II-13, PR at II-8. While four of the seven importers that answered the question reported no differences in product characteristics or sales conditions between domestic and Chinese product, differences reported by the other five importers included that some projects require U.S.-produced fittings, that ductile fittings are better, and that sales conditions (in terms of price, rebates, advertisement, FM/UL approval, and inventories and distribution networks) differ. CR at II-15, PR at II-10. All importers, except for one that was unfamiliar with nonsubject imports, reported that nonsubject imports are interchangeable with both the domestic like product and subject imports. CR at II-15, PR at II-10.

[55] CR at II-9, PR at II-6.

[56] CR at II-9, PR at II-6. Contractors in the South were described by witnesses at the hearing as largely non-unionized; contractors in the North and Midwest, however, appear to be largely unionized. For instance union jobs are estimated to account for two thirds of the market in the metropolitan New York area and 80 percent of construction jobs in St. Louis; unionized contractors are described as having a significantly lower presence in Dallas. Hearing Transcript at 93-95. Subject imports were described as currently used only to some degree by some of the union contractors. Id. at 95.

were to the United States, and that Canada is the only, ***, alternative export market.[57]

Nonsubject cast iron pipe fittings were imported during the period examined.[58] Shipments of nonsubject imports declined slightly from *** short tons in 1999 to *** short tons in 2000, then declined to *** short tons in 2001.[59] Shipments of nonsubject imports were *** short tons in the interim 2002 period, compared with *** short tons in interim 2001.[60]

B. Volume

Section 771(7)(C)(i) of the 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."[61]

Subject import volume increased *** overall between 1999 and 2001. After rising from *** short tons in 1999 to *** short tons in 2000, subject imports fell to *** short tons in 2001, a net increase of only *** percent between 1999 and 2001.[62] [63] In interim 2002, however, imports of subject fittings from China were more than *** short tons (*** percent) higher than in interim 2001.[64] Specifically, in interim 2002, subject imports increased to *** short tons, compared with *** short tons in interim 2001.[65] This increase took place despite the fact that apparent U.S. consumption was *** percent lower in interim 2002 than in interim 2001.[66]

Shipments of subject imports as a share of apparent U.S. consumption increased from *** percent in 1999 to *** percent in 2000, and to *** percent in 2001. In interim 2002, subject imports' share of U.S. consumption reached *** percent, compared with *** percent in interim 2001. Accordingly, subject import market share grew by *** in 2000, *** in 2001, and *** in interim 2002 compared with interim 2001. Domestic producers' market share decreased from *** percent in 1999 to *** percent in 2000, a decline of ***, and decreased to *** percent in 2001, a decline of ***. In interim 2002, domestic producers' share decreased to *** percent, *** below the interim 2001 share of *** percent. Nonsubject imports' share of the market decreased slightly from *** percent in 1999 to *** percent in 2001, then increased in the interim 2002 period to *** percent compared with *** percent in

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[57] CR at VII-3 - VII-4, PR at VII-2. Chinese producers in the preliminary phase of the investigation projected some home market sales in 2002 and 2003. Id. and CR and PR at Table VII-1.

[58] CR and PR at Table IV-2.

[59] CR and PR at Table IV-3

[60] Id.

[61] 19 U.S.C. § 1677(7)(C)(i).

[62] CR and PR at Table IV-2.

[63] Reflecting inventory adjustments, however, U.S. shipments of non-malleable/ductile fittings from China rose from *** short tons in 1999 to *** short tons in 2000, and to *** short tons in 2001, a net increase of *** percent. CR and PR at Table C-1 (measuring U.S. shipments of imports).

[64] CR and PR at Table IV-2.

[65] CR and PR at Table IV-2.

[66] CR and PR at Table IV-3. In interim 2002, shipments of subject imports were *** short tons, compared with *** short tons in interim 2001. Chinese inventories in the United States were *** percent higher in September 2002 than in September 2001 (*** percent higher for non-malleable fittings, *** percent higher for ductile fittings). CR and PR at Tables C-1, C-2, and C-3.

interim 2001.[67]

We find that the increase in the volume of subject imports, most notably during January - September 2002, is significant. We note that this recent significant increase followed steady growth in subject import market share at the expense of the domestic industry and was accompanied by a significant increase in the volume of inventories held by U.S. importers.

C. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the 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.[68]

The record in this investigation indicates that the domestic like product and subject imports are largely substitutable and that price is an important factor in purchasing decisions.[69] During the investigation, we obtained price data on four non-malleable and four ductile cast iron pipe fitting products. The price of each of the four domestic non-malleable products was compared to the price, to distributors and to end users, of the comparable non-malleable as well as the comparable ductile products from China.[70] The price comparison data indicate underselling by the subject non-malleable/ductile product in every comparison in each of the fifteen quarters of the period examined for sales to distributors and to end users, with margins of underselling ranging from 1.6 percent to 44.4 percent.[71] The margins of underselling increased markedly toward the end of the 15-quarter period.[72]

Although underselling by the subject imports reached significant levels late in the period examined,[73] the pricing data and other record information do not show depression or suppression of

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[67] CR and PR at Table C-1.

[68] 19 U.S.C. § 1677(7)(C)(ii).

[69] CR at II-10 - II-16, PR at II-7 - II-10. Asked to list the three most important factors considered when choosing a supplier, purchasers ranked price/cost second most frequently. CR at II-10, PR II-7, CR and PR at Table II-1. Eleven of twelve purchasers reported that they usually or sometimes purchase from the least expensive source. CR at II-12, PR at II-8.

[70] CR at V-3 - V-5, PR at V-2 - V-4. Frazier, the sole domestic producer of ductile fittings, did not report sales of the articles for which price comparison data were obtained.

[71] CR and PR at Tables V-1 - V-8.

[72] Id.

[73] The price trends and margins of underselling for the *** volume product (designated product 5 in the Commission's price data) sold to distributors are instructive. For product 5 (elbows with an inside diameter of one inch), margins of underselling fluctuated *** between the first quarter of 1999 and the second quarter of 2001. In the second half of 2001, prices for the domestic product increased while prices for the subject product decreased, with the *combined* effect of increasing the margin of underselling by ***. Through the third quarter of 2002, however, prices for the domestic product were *** while prices for the subject product fell by $*** per fitting,

(continued...)

prices for the domestic like product. Rather, the pricing data show that prices for the domestic products increased over the period examined by as much as *** percent, rising in both 2000 and 2001, notwithstanding declining apparent U.S. consumption.[74] Moreover, given the prevailing weak market conditions, it does not appear that the domestic industry would have been able to raise prices further, regardless of the effects of subject imports from China. Accordingly, we do not find significant price depression or suppression.[75] On balance, we do not find the price effects of the subject imports to be significant.

D. Impact

In examining the impact of the subject imports on the domestic industry, we consider all relevant economic factors that bear on the state of the industry in the United States.[76] These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, profits, cash flow, return on investment, ability to raise capital, and research and development. 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."[77] [78]

We find that the subject imports did not have a significant adverse impact on the domestic industry's performance. Although the volume of subject imports increased significantly late in the period examined, the impact of that volume was not significantly adverse in the absence of negative effects on domestic prices.

The domestic industry's production capacity, output (production), capacity utilization, sales (U.S. shipments), and market share generally were stable or decreased modestly between 1999 and 2000, then declined more noticeably in 2001 and in January-September 2002 (relative to January-September

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[73] (...continued)
leading to an increase in the margin of underselling of ***. CR and PR at Table V-5. These data suggest that the *** increase in margins of underselling took place in interim 2002, a period for which there was not an increase in the price for the domestic product. Id.

[74] CR and PR at Tables V-1 - V-8. The greatest increase was for domestic product ***. Id.

[75] While we were able to confirm some of the lost sales allegations of the petitioners (CR at V-17 - V-20, PR at V-7), the confirmed instances are not sufficient to affect our conclusion of a lack of present significant price effects. There were no allegations of lost revenues, consistent with petitioners' own statement that the effects of subject imports were experienced primarily through lost volume because they had made a decision not to compete with the subject imports from China on the basis of price. Petitioners' Postconference Brief at 14-16.

[76] 19 U.S.C. § 1677(7)(C)(iii). See also SAA at 851, 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." Id. at 885.).

[77] 19 U.S.C. § 1677(7)(C)(iii). See also SAA at 851, 885; Live Cattle from Canada and Mexico, Inv. Nos. 701-TA-386, 731-TA-812-813 (Preliminary), USITC Pub. 3155 (Feb. 1999) at 25 n.148.

[78] 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 the following dumping margins: Commerce determined final weighted-average less-than-fair-value margins of 7.08 percent for Jinan Meide Casting Co., Ltd., 6.34 percent for Shanghai Foreign Trade Enterprices Co. Ltd., and 75.50 percent for all others. Notice of Final Determination of Sales at Less Than Fair Value, Non-Malleable Cast Iron Pipe Fittings From the People's Republic of China, 68 Fed. Reg. 7765, 7768 (Feb. 18, 2003).

2001).[79] Broad employment indicia declined as well,[80] although wages and productivity in the domestic industry generally were mixed.[81] Domestic producers' inventories increased between 1999 and 2000, then declined in 2001 and in interim 2002 compared with interim 2001.[82] We observe that the domestic industry's non-financial performance closely follows the trends in apparent U.S. consumption[83] and additionally in 2001 reflects in some respects the impact of Anvil's relocation of its non-malleable operations.[84]

The domestic industry's operating income also declined over the period.[85] As a percentage of total net sales, operating income *** in 1999 and 2000, and then declined to *** percent in 2001. In

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[79] The domestic industry's production capacity was *** short tons between 1999 and 2000, while its production, capacity utilization, U.S. shipments, and market share decreased ***. Production declined from *** short tons in 1999 to *** short tons in 2000, while capacity utilization declined from *** percent in 1999 to *** percent. CR and PR at Table III-2. U.S. shipments declined from *** short tons in 1999 to *** short tons in 2000, although the average unit value of such shipments increased. CR and PR at Table III-3. The domestic industry's share of the U.S. market, *** percent in 1999, was *** percent in 2000. CR and PR at Table IV-3. Between 2000 and 2001, however, the domestic industry's production capacity, output, capacity utilization, and sales decreased noticeably, while its market share decreased moderately. Domestic producers' capacity declined from *** short tons in 2000 to *** short tons in 2001; production declined from *** short tons in 2000 to *** short tons in 2001, while capacity utilization declined from *** percent in 1999 to *** percent in 2001. CR and PR at Table III-2. U.S. shipments declined from *** short tons in 2000 to *** short tons in 2001, although the average unit value of such shipments continued to increase. CR and PR at Table III-3. The domestic industry's share of the U.S. market was *** percent in 2000 and *** percent through September of 2001, but declined to *** percent for 2001 as a whole. CR and PR at Table IV-3. During the interim period of January-September 2002, the general decline in the performance of the domestic industry continued or accelerated. The domestic industry's production capacity was *** short tons, *** percent lower than during interim 2001; production was *** short tons, *** percent lower than during interim 2001; capacity utilization was *** percent, *** lower than during interim 2001; U.S. shipments were *** short tons, *** percent lower than during interim 2001, although the average unit value of such shipments was higher; and in interim 2002, the domestic industry's share of the U.S. market was *** percent, *** lower than during interim 2001.

[80] The number of production workers in the industry declined from *** workers in 1999 to *** in 2000 and *** in 2001. The number of workers decreased in interim 2002 to ***, compared with *** in interim 2001. Hours worked declined from *** hours in 1999 to *** in 2000, and *** in 2001, and were *** hours in interim 2002, compared with *** in interim 2001. CR and PR at Table III-5.

[81] Wages paid by the domestic industry were $*** in 1999 and $*** in 2000 (essentially ***), and were *** percent higher on an hourly basis. Productivity increased by *** percent in 2000. In 2001, wages fell by *** percent to $*** million, but were *** percent higher on an hourly basis. Productivity increased in 2001 by *** percent. In interim 2002, wages were *** percent lower in the aggregate than during interim 2001, while hourly wages were *** percent higher. Productivity was *** percent lower in interim 2002 than during interim 2001. CR and PR at Table III-5.

[82] CR and PR at Table C-1. Inventories rose from *** short tons in 1999 to *** short tons in 2000, but declined thereafter to *** short tons in 2001 and to *** short tons in interim 2002. The record suggests that the increase in domestic inventories were in anticipation of Anvil's consolidation of its non-malleable operations with other operations in Columbia, Pennsylvania. Hearing Transcript at 85; Commission Staff Notes (John Fry), April 8, 2002.

[83] Apparent U.S. consumption decreased by *** percent in 2000, by *** percent in 2001, and was *** percent lower in interim 2002 than in interim 2001. CR and PR at Table IV-3.

[84] See, e.g., Hearing Transcript at 86 (none of Anvil's workers from Statesboro relocated to Columbia).

[85] Operating income decreased from $*** in 1999 to $*** in 2000 and $*** in 2001. Operating income increased in interim 2002 to $*** compared with operating income of $*** in interim 2001. CR and PR at Table VI-1.

interim 2002, operating income remained barely above the break-even point, as reflected by an operating income margin of *** percent, compared with *** percent in interim 2001.[86]

Declining operating income over the period is due largely to increased unit costs beginning in 2001.[87] Increases in unit cost of goods sold (COGS) over the period were caused in part by Anvil's large capital expenditures associated with the transfer of its non-malleable operations from Statesboro to Columbia in 2001,[88] and increases in environmental protection measures.[89]

As stated above, we find that subject imports did not prevent domestic producers' prices from rising so as to offset increasing costs. It is true that a portion of the increased unit costs was the result of reduced net sales quantities. While sales lost to imports from China were a factor, we find that a large majority of the decline in domestic producers' production and shipments resulted from a reduction in total consumption.[90] We also find that declines in the industry's other performance indicators, as described above, were also mainly due to the falling market consumption.[91]

For these reasons, we determine that the domestic industry producing non-malleable and ductile cast iron pipe fittings is not materially injured by reason of imports of non-malleable/ductile cast iron pipe fittings from China that are sold in the United States at less than fair value. We find, however, that the industry is vulnerable to the effects of subject imports in the imminent future in light of its currently weakened state.

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[86] CR and PR at Table C-1.

[87] CR and PR at Table VI-6. Unit COGS were $*** in 1999 and $*** in 2000, then increased to $*** in 2001. Unit COGS increased in the interim 2002 period to $***, compared with $*** in interim 2001. CR and PR at Table C-1.

[88] When asked about the effect of Anvil's relocation on its costs, witnesses testified that "the major cost for us (Anvil) was to relocate all the patterns and fixtures, retest them, get them operational on our Columbia machines." (Testimony of Mr. Fish, Hearing Transcript at 86-87). Capital expenditures associated with Anvil's moving its non-malleable operations to Columbia, Pennsylvania were estimated at $*** in the staff report (CR at III-2, PR at III-1) and $20 million at the hearing (Hearing Transcript at 82-84). Both of those figures *** from Anvil's reported total capital expenditures in 2001 of $***. CR and PR at Table VI-7.

Petitioners seek to attribute Anvil's move of its non-malleable operations from Statesboro, Georgia to Columbia, Pennsylvania to volume taken by subject imports. Petitioners' Prehearing Brief at 22, Petitioners' Posthearing Brief at 9-10 (alleging that the Statesboro plant was closed because Anvil, in the face of imports from China, could not maintain the level of capacity utilization necessary given the high fixed costs of operating a foundry and increasing environmental costs); see also CR at VI-9, PR at VI-3. The record does not indicate that consolidation of the Statesboro facilities with Anvil's other operations in Columbia, Pennsylvania, and the increased costs associated with that consolidation, can be attributed to subject imports. We note that the performance of Anvil ***; e.g., Anvil's operating income as a share of net sales was *** percent in 1999 and *** percent in 2000. CR and PR at Table VI-2.

[89] Anvil reported that total environmental costs at its Columbia plant ***. CR at VI-7, PR at VI-2.

[90] Between 1999 and 2001, apparent U.S. consumption fell by approximately *** short tons, as compared to an increase in shipments of subject imports of approximately *** short tons. Between interim periods, apparent U.S. consumption declined by *** short tons, as compared to a *** volume of shipments of subject imports. CR and PR at Table IV-3.

[91] For example, domestic consumption of non-malleable/ductile cast iron pipe fittings declined by *** percent between 1999 and 2001, and domestic producers' U.S. shipments declined by *** percent. At the end of the period, in interim 2002 compared with interim 2001, domestic consumption declined by *** percent while domestic producers' U.S. shipments decreased by *** percent. CR and PR at Table C-1.

IV. THREAT OF MATERIAL INJURY BY REASON OF LESS THAN FAIR VALUE IMPORTS

Section 771(7)(F) of the Act directs the Commission to determine whether the U.S. industry is threatened with material injury by reason of the subject imports by analyzing 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."[92] The Commission may not make such a determination "on the basis of mere conjecture or supposition," and considers the threat factors "as a whole" in making its determination whether dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued.[93] In making our determination, we have considered all statutory factors that are relevant to this investigation,[94] including the rate of the increase in the volume and market penetration of subject imports, unused production capacity, and the substantial inventories of subject merchandise.

For the reasons discussed below, we determine that the domestic industry is threatened with material injury by reason of subject imports. As stated in our discussion of material injury, supra, we find that record data reflect a significant rate of increase in subject import volume at the end of the period examined. When combined with the steady growth in subject imports' market share at the expense of the domestic industry, these data strongly indicate the likelihood of substantially increased imports. Specifically, in interim 2002, imports of subject fittings from China increased to *** short tons, compared with subject imports of *** short tons in the same nine-month period of 2001.[95] This reflects an increase of more than *** short tons, or *** percent, compared with interim 2001. Moreover, inventories of the Chinese merchandise in the United States reached *** short tons in interim 2002, compared with inventories of *** short tons in interim 2001.[96] These inventories are *** percent higher than at the end of interim 2001, and are equivalent to *** percent of annualized U.S. shipments of imports from China in the interim 2002 period.[97] [98] These import inventories alone were equivalent to *** percent of annualized 2002 apparent U.S. consumption of non-malleable/ductile cast iron pipe

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[92] 19 U.S.C. § 1673d(b) and 1677(7)(F)(ii).

[93] 19 U.S.C. § 1677(7)(F)(ii).

[94] 19 U.S.C. § 1677(7)(F)(i). Factor I is inapplicable in this investigation because no countervailable subsidy is involved. Factor VII is inapplicable in this investigation because it does not involve imports of a raw agricultural product.

[95] CR and PR at Table IV-2.

[96] CR and PR at Table VII-2.

[97] CR and PR at Tables VII-2 and C-1. In interim 2002, shipments of subject imports declined *** to *** short tons, compared with *** short tons in interim 2001. CR and PR at Table C-1. Contrasted with end-of-period inventories of subject merchandise in the United States at the end of interim 2002, those inventories were *** short tons in 1999, *** short tons in 2000, and *** short tons in 2001. CR and PR at Table VII-2. Ending inventories as a ratio to U.S. shipments of the subject imports were *** percent at the end of 1999, *** percent at the end of 2000, and *** percent at the end of 2001. CR and PR at Table VII-2.

[98] In the same interim 2002 period in which inventories as a ratio to shipments of subject imports increased by *** than in any prior, full-year, period, shipments of subject imports as a ratio to domestic production increased to *** percent, compared with *** percent in interim 2001. CR and PR at Table C-1. The percentage point increase in shipments of subject imports as a share of U.S. consumption was *** in the interim 2002 period, ***(from *** percent in interim 2001 to *** percent in interim 2002) than in any of the prior, full-year periods: *** in 2000 (from *** percent in 1999 to *** percent in 2000) and *** in 2001 (from *** percent in 2000 to *** percent in 2001). Id.

fittings.[99] This indicates that the volume of subject fittings from China already in the United States is likely to produce a substantial increase in the market share of those fittings.

We also find that producers in China have available inventories in China and existing excess capacity that will permit them to increase exports to the United States significantly in the imminent future. Based on data for full year 2001, the most recent period for which the Chinese producers furnished actual production data, the Chinese producers were operating at a low aggregate capacity utilization rate, 55.3 percent, and had excess production capacity of 4,818 short tons, equivalent to *** percent of apparent U.S. consumption in 2001.[100] This available capacity *** total shipments of subject imports in the first nine months of 2002.[101] Moreover, the United States is the only significant market for the subject merchandise.[102] Inventories in China increased from *** short tons in 1999 to *** short tons in 2001, and were projected to continue to increase in 2002 to *** short tons. Declining projected inventory levels in China in 2003 appear to be highly dependent on increasing total shipments of the subject merchandise by more than *** percent from the levels reported for 2001.[103] [104]

As we discussed previously, domestically produced and imported non-malleable/ductile cast iron fittings are substantially interchangeable, and price is a significant factor in purchasing decisions. The record indicates that the subject imports undersold the domestic product in all comparisons over the period examined, with the margins of underselling increasing in the latter part of the period, especially in late 2001 and 2002, and with respect to higher volume products.[105] The record indicates that the disparity between prices for the domestic like product and the subject merchandise has increased so significantly that the preference of certain purchasers for the domestic like product is likely to erode. The growing price disparity will likely heighten demand for subject imports and accelerate penetration of the market by subject imports as distributors, contractors and end-users increasingly switch from the domestic product to the subject imports to take advantage of the price difference.

In sum, the convergence of the accelerating rate of subject imports toward the end of the period examined, the presence of large volumes of subject import inventories in the United States, the substantial and growing available capacity in China to produce subject merchandise, the reliance of the Chinese industry almost exclusively on the U.S. market for sales of subject fittings, declining subject import prices, and increasing margins of underselling, indicate that a significant increase in the volume and market share of subject imports from China is likely in the imminent future.

We found above that subject imports did not have significant depressing or suppressing effects

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[99] Compare CR and PR Tables IV-3, VII-2.

[100] CR and PR at Tables VII-1, C-1.

[101] CR and PR at Table C-1. The Chinese producers also projected significant excess capacity for 2002 and 2003, although, in the absence of significant participation by the Chinese producers in the final phase of this investigation, and their failure to furnish data for the interim 2002 period, we place greater reliance upon the actual, 2001 data than upon projections made in the preliminary phase of the investigation.

[102] CR and PR at Table VII-1. There was no Chinese home market for the merchandise during 1999 - 2001, and *** percent of the subject merchandise was exported to the United States in 2001. Id. , CR at VII-3, PR at VII-2.

[103] CR and PR at Table VII-1.

[104] We also have considered 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. Three of the five responding producers of the subject merchandise in China reported producing malleable cast iron pipe fittings and one reported producing fire hydrant bodies using shared production equipment and employees. CR at VII-2, PR at VII-1.

[105] CR and PR at Tables V-1 - V-8 (regarding increased margins on high volume products, see CR and PR at Tables V-3 (China product 3), V-5 (China product 5), and V-7 (China products 7 and 8)).

during the period examined. It appears that the domestic industry's current strategy is not to set prices in relation to Chinese prices. Accordingly, we have not relied upon a finding of likely price depression or suppression in finding a threat of material injury. However, the growing volume and underselling margins of subject fittings from China could cause the domestic industry to alter its approach and lower its prices, or refrain from raising its prices, to seek to limit its loss of additional sales.[106] In such an event, the domestic industry would also experience negative effects in the form of lower revenues and reduced profits. Regardless of the approach followed, the domestic industry would be materially injured.

We have considered 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. All three producers reported actual and potential negative effects.[107] The domestic industry's production, capacity, and capacity utilization levels all reached their lowest points over the period examined in 2002.[108] The domestic industry reported no R&D expenditures, and increasing levels of capital expenditures between 1999 and 2001, largely associated with ***.[109]

As discussed above, the volume of subject imports from China have already had some negative impact, albeit not significant, on the domestic industry over the period examined. The significantly increased volume and market share of imports in the imminent future will have a significant negative impact on the domestic industry's production, capacity utilization, employment, revenues, and profitability. Given the already weakened condition of the domestic industry, described above, this negative impact is such that the industry will be materially injured.

CONCLUSION

For the reasons stated above, we determine that the domestic industry producing non-malleable/ductile cast iron pipe fittings is threatened with material injury by reason of subject imports of non-malleable/ductile cast iron pipe fittings from China that are sold in the United States at less than fair value.[110]

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[106] CR and PR at Table V-12 (purchaser *** reporting that "the U.S. producers have not yet lost sales to *** but they are going to because the Chinese product is 25 percent cheaper"); Hearing Transcript at 37 ("unless the U.S. Government acts to impose antidumping duties on these products from China, Davis & Warshow will have to buy Chinese fittings in order to stay in business and be competitive"); Hearing Transcript at 34-35, testimony of Robert Clark, President of purchaser Clark Sprinkler Supply Company ("[W]e have a huge investment in our 12 stocking locations nationwide, and we cannot afford to be uncompetitive with the distributors who handle Chinese products. . Without relief for the domestic producers, I'm going to have to abandon my domestic suppliers so that I can save my family business and our employees").

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[107] CR at VI-9, VI-11, PR at VI-3.

[108] CR and PR at Table III-2.

[109] CR and PR at Table VI-7; CR at VI-9, PR at VI-3.

[110] Based on the record of this investigation, we do not find that material injury by reason of subject merchandise that is sold at less than fair value would have been found but for the suspension of liquidation of entries of such merchandise. 19 U.S.C. § 1673d(b)(4)(B).

PART I: INTRODUCTION

BACKGROUND

This investigation results from a petition filed by Anvil International, Inc. (Anvil), Portsmouth, NH, and Ward Manufacturing, Inc. (Ward), Blossburg, PA, on February 21, 2002, alleging that an industry in the United States is materially injured and threatened with material injury by reason of imports of non-malleable and ductile cast iron pipe fittings[1] from China that are sold in the United States at less than fair value (LTFV). Information relating to the chronology of the investigation is provided in table I-1.

Table I-1
Non-malleable/ductile cast iron pipe fittings: Chronology of events in the subject investigation

Date	Action
February 21, 2002	Petition filed with Commerce and the Commission; institution of Commission investigation (67 FR 9004, February 27, 2002)
March 20, 2002	Commerce's notice of initiation (67 FR 12966)
April 16, 2002	Commission's preliminary determination published in the *Federal Register* (67 FR 18635)
September 25, 2002	Commerce's preliminary LTFV determination (67 FR 60214); scheduling of the final phase of the Commission's investigation (67 FR 65360, October 24, 2002)[1]
February 18, 2003	Commerce's final LTFV determination (68 FR 7765)[2]
February 11, 2003	Commission's hearing[3]
March 12, 2003	Commission's vote
March 24, 2003	Commission's determination sent to Commerce

[1] The Commission's notice of scheduling is presented in app. A.
[2] Commerce's notice is presented in app. A. Commerce calculated the final LTFV margins to be as follows: 7.08 percent for Jinan Meide Casting Co., Ltd.; 6.34 percent for Shanghai Foreign Trade Enterprises Co., Ltd.; and 75.50 percent for all others.
[3] App. B presents a list of witnesses at the hearing.

Source: Notices of the Commission and Commerce.

[1] For purposes of this investigation, the subject merchandise is finished and unfinished non-malleable and ductile cast iron pipe fittings with an inside diameter ranging from 1/4 inch to 6 inches (about 6.35 to 152.40 millimeters), whether threaded or unthreaded, regardless of industry or proprietary specifications. The subject fittings include non-malleable and ductile elbows, ells, tees, crosses, and reducers as well as non-malleable flanged fittings. See the section of this report titled "The Subject Product" for a more complete description of subject merchandise.

SUMMARY DATA

A summary of data collected in the investigation is presented in appendix C, tables C-1-C-6. Except as noted, U.S. industry data are based on questionnaire responses of three firms, Anvil, Ward, and Frazier and Frazier Industries, Inc. (Frazier), that accounted for almost all U.S. production of non-malleable/ductile cast iron pipe fittings during 2001.[2] Data presented on U.S. imports are based on questionnaire responses of 11 firms estimated to account for *** percent of the subject imports during 2001. The Chinese industry data are based on the preliminary phase questionnaire responses of five firms whose exports of the subject merchandise to the United States are estimated to account for *** percent of the reported U.S. imports of the subject Chinese merchandise during 2001.[3]

PREVIOUS AND RELATED COMMISSION INVESTIGATIONS

The Commission has conducted several investigations on various cast iron pipe fittings, including non-malleable cast iron pipe fittings. The Commission's determinations in previous and related investigations are discussed below.

On April 13, 1977, the Commission instituted investigation No. TA-201-26 under section 201 of the Trade Act of 1974 concerning malleable cast iron pipe and tube fittings in response to a petition filed by the American Pipe Fittings Association (APFA). On September 19, 1977, the Commission reported to the President its unanimous finding that malleable cast iron pipe and tube fittings were not being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing like or directly competitive articles.[4]

On January 7, 1980, Commerce advised the Commission that a countervailing duty investigation had resulted in a preliminary determination that the Government of Japan was providing benefits that might constitute bounties or grants on the manufacture, production, or exportation of certain malleable cast iron pipe fittings. Accordingly, the Commission instituted investigation No. 701-TA-9 (Final) under section 703(a) of the Tariff Act of 1930 to determine whether an industry in the United States was materially injured or threatened with material injury by reason of the importation of these pipe fittings into the United States. On March 20, 1980, the Commission terminated the investigation upon written request by petitioners, the APFA.

On September 18, 1984, the Cast Iron Pipe Fittings Committee (CIPFC) filed petitions with the Commission and Commerce alleging that an industry in the United States was materially injured or threatened with material injury by reason of imports from Brazil and India of certain cast-iron pipe fittings, other than for cast iron soil pipe, which were allegedly subsidized by the Governments of Brazil and India. On October 9, 1984, following receipt of a letter from counsel for the petitioners withdrawing the petition relating to imports of the subject merchandise from India, the Commission discontinued the subsidy investigation concerning India. In the remaining investigation concerning Brazil, the

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[2] Anvil and Ward indicated that a small portion of their production of non-malleable cast iron pipe fittings is cast at outside jobber facilities in the United States, but that the production, shipment, and inventory data for such products are included in their questionnaire responses in this investigation. Only one domestic job shop foundry, Frazier, provided the Commission with a response to its producers' questionnaire in this final phase of the investigation. The data reported by Frazier are *** of ductile pipe fittings.

[3] Only one Chinese producer/exporter provided a response to the Commission's questionnaire in the final phase of the investigation. In response to the Commission's telegram requesting data from the U.S. Embassy, some information but no data were provided. Therefore, data received in the preliminary phase of the investigation are presented in this report.

[4] *Malleable Cast-Iron Pipe and Tube Fittings*, Inv. No. TA-201-26, USITC Pub. 835 (September 1977).

Commission made final determinations that there were two domestic like products, malleable cast iron pipe fittings and non-malleable cast iron pipe fittings, other than for cast iron soil pipe, and that there was no material injury or threat thereof to domestic industries by reason of imports of malleable or non-malleable cast iron pipe fittings which were subsidized by the Government of Brazil.[5]

Effective July 31, 1985, the Commission instituted investigations Nos. 731-TA-278-281 (Preliminary) following receipt of antidumping complaints from the CIPFC alleging that malleable cast iron pipe fittings from Brazil, Korea, and Taiwan were being sold in the United States at LTFV and that non-malleable cast iron pipe fittings, other than for cast iron soil pipe, from Taiwan were being sold in the United States at LTFV.[6] On January 14, 1986, Commerce published notice of its preliminary determinations that malleable cast iron pipe fittings from Brazil, Korea, and Taiwan were being, or were likely to be, sold in the United States at LTFV and that non-malleable cast iron pipe fittings from Taiwan were not being, nor likely to be, sold in the United States at LTFV.[7] Accordingly, effective January 13, 1986, the Commission instituted investigations Nos. 731-TA-278-280 (Final) concerning malleable pipe fittings from Brazil, Korea, and Taiwan. In its final investigations, the Commission found that an industry in the United States was materially injured by reason of LTFV imports from Brazil, Korea, and Taiwan of malleable cast iron pipe fittings, excluding "groove-lock" pipe fittings, whether or not advanced in condition by operations or processes (such as threading) subsequent to the casting process. No information was presented nor arguments made during the investigations which indicated that the Commission should adopt definitions of the domestic like products different from those made in the previous subsidy investigation concerning Brazil.[8]

On August 29, 1986, antidumping petitions were filed on behalf of the CIPFC alleging that malleable cast iron pipe fittings from Japan and Thailand were being sold at LTFV. In June 1987, the Commission determined that an industry in the United States was materially injured by reason of LTFV imports of malleable cast iron pipe fittings from Japan, and in August 1987, the Commission determined that an industry in the United States was materially injured by reason of LTFV imports of malleable cast iron pipe fittings from Thailand.[9]

On January 4, 1999, the Commission instituted reviews to determine whether revocation of the antidumping duty orders on malleable cast iron pipe fittings from Brazil, Japan, Korea, Taiwan, and Thailand would likely lead to the continuation or recurrence of material injury to a domestic industry. After conducting full reviews pursuant to section 751(c)(5) of the Act, the Commission determined that revocation of the antidumping duty orders covering malleable cast iron pipe fittings from Brazil, Taiwan, and Thailand would not be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time and that revocation of the antidumping duty

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[5] *Certain Cast-Iron Pipe Fittings from Brazil*, Inv. No. 701-TA-221 (Final), USITC Pub. 1681 (April 1985).

[6] On August 7, 1985, the Commission received a letter from counsel for the petitioner amending the petitions to exclude "groove-lock" pipe fittings.

[7] Subsequently, the petition with respect to non-malleable cast iron pipe fittings was withdrawn and the investigation terminated (51 FR 10648, March 28, 1986).

[8] *Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-281 (Preliminary), USITC Pub. 1753 (September 1985) and *Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986).

[9] The Commission rejected arguments presented in the Japan/Thailand investigations that the domestic like product should be defined to include grooved and/or non-malleable pipe fittings, as well as malleable cast iron pipe fittings. *Certain Malleable Cast-Iron Pipe Fittings from Japan*, Inv. No. 731-TA-347 (Final), USITC Pub. 1987 (June 1987) and *Certain Malleable Cast-Iron Pipe Fittings from Thailand*, Inv. No. 731-TA-348 (Final), USITC Pub. 2004 (August 1987).

orders concerning malleable cast iron pipe fittings from Japan and Korea would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. In each of the original investigations, the Commission had defined the domestic like product as all malleable cast iron pipe fittings other than grooved.[10] In the reviews, no party argued for a different like product definition. The Commission found no need to revisit its original determinations concerning domestic like product and adopted the same definition as was used in the original determinations.[11]

On October 30, 2002, Anvil and Ward filed a petition alleging that an industry in the United States was being materially injured or threatened with material injury by reason of imports from China of malleable cast iron pipe fittings that are allegedly sold at LTFV. In its affirmative determination in the preliminary phase of the investigation, the Commission found, consistent with prior Commission determinations, that the domestic like product was all malleable cast iron pipe fittings other than grooved fittings coextensive with Commerce's scope.[12]

THE PRODUCT/DOMESTIC LIKE PRODUCT ISSUES

The Subject Product

For purposes of this investigation, Commerce defined the scope of the subject merchandise as:

> finished and unfinished non-malleable cast iron pipe fittings with an inside diameter ranging from 1/4 inch to 6 inches,[13] whether threaded or unthreaded, regardless of industry or proprietary specifications. The subject fittings include elbows, ells, tees, crosses, and reducers as well as flanged fittings. These pipe fittings are also known as cast iron pipe fittings or gray iron pipe fittings. These cast iron pipe fittings are normally produced to ASTM[14] A-126 and ASME[15] B.16.4 specifications and are threaded to ASME B1.20.1 specifications. Most building codes require that these products are Underwriters Laboratories (UL) certified. The scope does not include cast iron soil pipe fittings or grooved fittings or grooved couplings.
>
> Fittings that are made out of ductile iron that have the same physical characteristics as the gray or cast iron fittings subject to the scope above or which have

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[10] *Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986); *Certain Malleable Cast-Iron Pipe Fittings from Japan*, Inv. No. 731-TA-347 (Final), USITC Pub. 1987 (June 1987); and *Certain Malleable Cast-Iron Pipe Fittings from Thailand*, Inv. No. 731-TA-348 (Final), USITC Pub. 2004 (August 1987).

[11] *Malleable Cast-Iron Pipe Fittings from Brazil, Japan, Korea, Taiwan, and Thailand*, Inv. Nos. 731-TA-278-280 and 731-TA-347-348 (Review), USITC Pub. 3274 (February 2000).

[12] *Malleable Iron Pipe Fittings from China*, Inv. No. 731-TA-1021 (Preliminary), USITC Pub. 3568 (December 2002).

[13] About 6.35 to 152.40 millimeters.

[14] ASTM International (formerly known as the American Society for Testing and Materials) provides standards "that are accepted and used in research and development, product testing, quality systems, and commercial transactions around the globe." (From "About ASTM International" obtained online at ASTM's website at www.astm.org on January 21, 2003.)

[15] ASME stands for the American Society of Mechanical Engineers which sets many industrial and manufacturing standards.

the same physical characteristics and are produced to ASME B.16.3, ASME B.16.4, or ASTM A-395 specifications, threaded to ASME B1.20.1 specifications and UL certified, regardless of metallurgical differences between gray and ductile iron, are also included in the scope of this petition. These ductile fittings do not include grooved fittings or grooved couplings. Ductile cast iron fittings with mechanical joint ends (MJ), or push on ends (PO), or flanged ends and produced to the American Water Works Association (AWWA) specifications AWWA C110 or AWWA C153 are not included.[16]

Physical Characteristics and Uses

Pipe fittings are generally used for connecting the bores of two or more pipes or tubes, connecting a pipe to some other apparatus, changing the direction of fluid flow, or closing the pipe. The material from which the subject fittings are made, cast iron, is a general term for alloys which are primarily composed of iron, carbon (more than two percent), and silicon.[17] Made to ASTM/ASME specifications, iron castings exhibit mechanical properties which are determined by the cooling rate during and after solidification, by chemical composition, by heat treatment, by design, and by the nature of the molding technique. During the cooling and solidification processes, carbon is segregated within the crystalline structure of the iron in the form of iron carbide or graphite, resulting in different types of cast irons with different physical properties.[18] In practice, iron castings are best identified by their micro-structures rather than by their chemical compositions.[19]

There are three basic metallurgical types of cast iron pipe fittings namely, non-malleable (or gray) fittings, ductile fittings, and malleable fittings.[20] These types of fittings and the cast iron from which they are made are discussed below.

Gray iron[21] is defined by the ASTM as cast iron that has fine graphite[22] flakes which are formed during cooling.[23] Gray iron has excellent machinability, wear resistance, and high hardness value. Yield

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[16] 67 FR 60214, September 25, 2002. Covered merchandise is imported under statistical reporting numbers 7307.11.0030, 7307.11.0060, 7307.19.3060, and 7307.19.3085 of the Harmonized Tariff Schedule of the United States (HTS) with normal trade relations tariff rates in 2003 of 4.8 percent *ad valorem* (for non-malleable fittings) and 5.6 percent *ad valorem* (for ductile fittings), applicable to imports from China.

[17] *Gray and Ductile Iron Castings Handbook*, Charles F. Walton (Ed.) Gray and Ductile Iron Founder's Society, 1971, pp. 94 and 114.

[18] Metallurgists record the relationship between chemical compositions, temperatures, and micro-structures in a phase diagram which can be multi-dimensional.

[19] In normal iron casting, the ASTM/ASME standard specifications and the desirable mechanical properties of the castings, but not their chemical analyses, are specified to the manufacturer (or foundry) because the chemical compositions of these cast irons overlap.

[20] Ironically, the class of goods known as non-malleable fittings, as used throughout this report and in the HTS, does not include of all fittings that are other than malleable. "Ductile fittings" is a third type of fitting which is neither non-malleable nor malleable. Although the terms "malleable" and "ductile" imply approximately the same mechanical properties, their uses with respect to cast iron are different.

[21] The term "gray" is given because of the gray color of the fractured surface of the cast iron.

[22] Graphite can also be called graphitic carbon.

[23] See Designation: A 644-98, in *American Standards of Testings and Materials* 2000, Volume 01.02: Ferrous Casting; Ferro Alloys, p. 346.

strength, however, is not a significant property of gray iron.[24] Gray irons exhibit no elastic behavior and are comparatively weak, with a tensile strength[25] ranging from 20,000 to 58,000 psi.[26] It is the graphite flakes that dominate the properties of this material, weakening the metallic matrix, causing fractures under stress.[27]

Fittings produced from gray iron, also referred to as non-malleable cast iron pipe fittings or simply cast iron fittings, are used primarily in fire protection/sprinkler systems, but are also used in the steam conveyance systems installed in older buildings in inner cities. The fire protection/sprinkler system market is by far the dominant use for these fittings in the United States, believed to account for approximately 90 to 95 percent of shipments. The steam conveyance market represents another 5 percent of shipments, with other uses constituting less than 5 percent of shipments.[28] [29] These non-malleable cast iron pipe fittings are primarily produced to ASTM A-126 and ASME B.16.4 specifications.

Ductile iron, dating from 1940, is the latest addition to the family of cast irons.[30] It is sometimes referred to as nodular iron or spheroid iron because, as defined by the ASTM, it is a cast iron that has a very small but definite amount of magnesium added in the liquid state so as to induce the formation of graphites as spheroids or nodules which remain in the as-cast condition.[31] The characteristics of the particular ductile fittings are derived from the metallurgical differences imparted during the production process.[32] With the free graphite in nodular form, the continuity of the metal matrix is at a maximum, accounting for the formation of a ductile iron fitting with exceptional tensile strength, good machinability, high impact resistance,[33] and corrosion resistance. Ductile iron has the ductility of malleable iron and the corrosion resistance of alloy cast iron.[34] It compares in strength and elastic properties with cast steel and can be stronger than malleable iron, with a tensile strength ranging from

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[24] Any time a piece of iron is pulled apart along its length by force, the iron piece in tension will be elongated. The stress (or force per unit, measured in pounds per square inch (psi) of the cross section of the iron piece) that results in a specified limit of permanent strain (or the change per unit of length measured in percent) is called the yield strength. Yield strength is the maximum load that induces a permanent strain in a material, usually at 0.2 percent above the limit. *Gray and Ductile Iron Castings Handbook*, pp. 205 and 668.

[25] The maximum load a piece of metal will withstand prior to fracture.

[26] Conference transcript, p. 119, and postconference brief of JDH Pacific, Inc. (JDH), p. 2.

[27] Postconference brief of JDH, p. 3.

[28] Some of these other uses include use in industrial plants. Non-malleable flanged fittings, e.g., are primarily used in such applications as in piping systems for the conveyance of paint or molasses, whereas a smaller amount of such flanges are used in fire protection/sprinkler systems. Staff telephone call with ***, February 27, 2003. Another use for these non-malleable flanged fittings is as so-called floor flanges to affix pipes as hand (or other) railings to floors or other surfaces.

[29] Respondents testified in the preliminary phase of the investigation that over 95 percent of imported subject merchandise is used in fire protection/sprinkler systems. Conference transcript, p. 144. .

[30] *Gray and Ductile Iron Castings Handbook*, p. 98.

[31] See Designation A 644-98 in *American Standards of Testings and Materials 2000*, Volume 01.02: Ferrous Casting; Ferro Alloys, p. 346.

[32] Postconference brief of JDH, p. 3.

[33] A measure of the ability of the material to withstand and absorb energy at high velocity without failure.

[34] Utilityman Basic, Vol. 1, NAVEDTRA 14265, United States Navy, NAVSUP Number 0504-LP-026-8970, p. 3-50, June 1998.

60,000 to 100,000 psi.[35] Ductile iron fittings are superior to gray iron fittings in elastic properties, impact resistance, yield strength/weight,[36] and wear resistance; ductile fittings are comparable to gray fittings in castability, surface hardenability, and corrosion resistance; and ductile fittings are inferior to gray fittings in ease of machining, vibration damping, and cost of manufacture.[37]

Although ductile iron is superior in several respects to gray iron, the subject ductile cast iron pipe fittings marketed in the United States today are used in the same primary applications as gray cast iron pipe fittings, i.e., fire protection/sprinkler systems, and are typically produced to ASME B.16.3 specifications.[38] [39] Other nonsubject ductile cast iron pipe fittings are used in the United States for soil pipe and waterworks applications, such as fittings for underground water mains and main water supply fittings for buildings.[40] The ductile fittings used in the waterworks applications are typically very large and are reportedly produced in the United States primarily by a handful of foundries, none of which produces non-malleable cast iron pipe fittings.[41]

Malleable iron is characterized by the existence of graphite as irregularly shaped nodules in its microscopic structure.[42] Malleable iron is initially cast as white iron[43] which, after casting, is subject to a lengthy annealing process which strengthens the cast iron. The annealing process consists of rapidly heating the casting to approximately 1,750°F (about 954°C), followed by a lengthy, controlled cooling process,[44] which improves the machinability, ductility, and durability of the metal by reducing its brittleness. The overall production and heat treatment process performed on malleable cast iron pipe

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[35] *Gray and Ductile Iron Castings Handbook*, pp. 205 and 248, and postconference brief of JDH, p. 2.

[36] Ductile fittings are thinner and lighter than gray fittings.

[37] Postconference brief of JDH, pp. 2-5.

[38] Commission importer questionnaire responses of ***, and conference transcript, pp. 62-63. *** reported in its preliminary phase questionnaire response that ductile fittings cannot be used in steam conveyance systems because repair work on fittings in these systems requires that the fittings be "cracked" by the engineer for removal. Gray iron fittings are brittle and more prone to crack under stress. Respondent JDH states that the production processes unique to the manufacture of ductile iron cause the flake graphite to deposit in a nodular form and the graphite nodules act as "crack-arresters," eliminating the crack effect that dominates gray iron's mechanical properties. Postconference brief of JDH, p. 3.

[39] Respondent JDH argues that installation specialists working in the fire protection industry familiar with gray fittings effectively ignore the substitutability of the ductile fittings and are reluctant to start using such fittings because of inexperience and sensory differences associated with threading a pipe on a ductile fitting resulting in costly mistakes. Postconference brief of JDH, pp. 8-9.

[40] Fittings for use with soil pipe and ductile fittings for use in waterworks applications meeting AWWA C110 and AWWA C153 specifications are excluded from the scope of this investigation.

[41] Conference transcript, pp. 45-46.

[42] *Mechanical Properties of Malleable* at http://castingsource.com/tech_artmalleable.asp, retrieved February 22, 2002, and *Cast Iron* by Dave Wright Welding at http://pw1.netcom.com/~dwelding/castiron.htm, retrieved March 6, 2002.

[43] White iron (so called because of the color of the fractured surface of the cast iron) is sometimes called chilled iron because it is produced by a rapid solidification process. During this process, carbon and iron elements remain chemically combined in colonies of iron carbide (Fe_3C), which contains 6.67 percent of carbon and is formed more readily than graphite because iron and carbon atoms are not completely separated in the structure. This results in a hard and brittle cast, which has superior abrasion resistance but is normally unmachinable. *Gray and Ductile Iron Castings Handbook*, pp. 55, 94 and 114-115.

[44] The overall cooling process takes from 24 to 40 hours to complete.

fittings distinguishes the product from non-malleable cast iron pipe fittings in chemical composition, microstructure, material strength, size, and weight.

Malleable cast iron pipe fittings are lighter, thinner, stronger, and less brittle than non-malleable cast iron fittings and are used where shock and vibration resistance is required and where fittings are subject to quick temperature changes. The principal uses of malleable cast iron pipe fittings are in gas lines, piping systems of oil refineries, and building gas and water systems.[45] In some applications, malleable cast iron pipe fittings may be substituted for non-malleable cast iron pipe fittings, but due to the higher cost of the product, such substitution is uneconomical.[46] Malleable fittings are not included in the products subject to this investigation.

Products specifically excluded from the scope of this investigation include soil pipe and grooved fittings and couplings. Also excluded from the scope are flanged ductile cast iron fittings and ductile fittings produced to AWWA C110 or AWWA C153 specifications.[47] These excluded items are discussed below.

Cast iron soil pipe and fittings, which are typically produced from gray iron, are used primarily in building construction for sanitary and storm drain, waste, and vent piping applications. The product is installed in residential construction, hospitals, schools, and commercial and industrial structures. Cast iron soil pipe and fittings are typically produced in accordance with ASTM A-888, ASTM A-74, or Cast Iron Soil Pipe Institute (CISPI) 301 specifications and are available in sizes ranging from 2 to 15 inches.

Grooved fittings and couplings, which are produced from ductile or malleable cast iron,[48] are different forms of fittings in which a split coupling attaches to a circumferential groove near the end of each piece to be joined. A gasket inside the coupling serves as a seal for the pipe and the coupling. Respondent Smith-Cooper, International argued in the preliminary phase of the investigation that ductile grooved fittings are used for the same purpose for which non-malleable threaded or flanged fittings are used (i.e., for fire protection/sprinkler systems),[49] and that the growth in the use of grooved fittings and couplings has taken market share from non-malleable cast iron pipe fittings in the United States.[50] Although petitioners concede that grooved fittings took market share from threaded non-malleable

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[45] *Malleable Cast-Iron Pipe Fittings from Brazil, Japan, Korea, Taiwan, and Thailand*, Inv. Nos. 731-TA-278-280 and 731-TA-347-348 (Review), USITC Pub. 3274 (February 2000). Approximately two percent or less of malleable fittings are used in the fire protection/sprinkler and steam heat conveyance applications. Conference transcript, p. 163. In any given system, non-malleable and malleable pipe fittings are not used interchangeably.

[46] *Certain Cast-Iron Pipe Fittings from Brazil*, Inv. Nos. 701-TA-221 (Preliminary), USITC Pub. 1597 (November 1984), and conference transcript, p. 61. Petitioners stated in the preliminary phase of the investigation that malleable fittings sell at 50-70 percent higher prices than non-malleable fittings; petitioners' postconference brief, p. 11.

[47] Also excluded are ductile fittings with mechanical joint ends and push-on ends. These fittings are produced for waterworks applications and must meet AWWA C110 and AWWA C153 specifications. *Tyler/Union Sample Specifications*, November 29, 2001, pp. 11 and 22. No arguments were raised by parties in the preliminary or final phases of the investigation specific to these ductile fittings.

[48] Evidence on the record in the preliminary phase of the investigation suggests that grooved fittings are not made from gray iron. Conference transcript, p. 84.

[49] Conference transcript, p. 106.

[50] Smith-Cooper testified in the preliminary phase of the investigation that the use of grooved fittings is one method by which a fire sprinkler system installer could reduce his installation cost, saving both installation time and the cost of the fittings since grooved fittings are thinner and less expensive. Conference transcript, p. 107. ***.

fittings, they contend that the change took place many years ago and now the situation is fairly stable.[51] Petitioners also testified that the use of ductile grooved fittings is reportedly more prominent than the use of threaded fittings in fire protection/sprinkler systems requiring fitting sizes ranging from 2 to 6 inches. For such systems requiring fitting sizes of 2 inches and less, threaded fittings are typically used.[52]

Flanged fittings are different from threaded fittings in that the flanged fittings are cast with an integral rim, or flange, at the end of the fitting.[53] The flanged connection is made by inserting a gasket in between the flanged ends of two separate pieces and securing the ends with several bolts. Respondent Smith-Cooper testified in the preliminary phase of the investigation that approximately 5 percent of the flanged ductile fittings are currently used in fire protection/sprinkler systems in the United States and argued that these fittings compete directly with flanged non-malleable fittings.[54]

As discussed earlier in this report, ductile fittings which are manufactured to the physical specifications for waterworks systems are distinguishable in physical characteristics from the domestic like product in that they are typically very large fittings which must meet different technical specifications. These fittings are used underground in the water distribution and transmission systems, above ground in water treatment plants, or for main water supply to buildings, and are meant for drinking water and waste water. These fittings are typically made to the American Water Works Association specifications and their end uses include water companies, municipal water systems, and water/waste water treatment plants.[55]

Manufacturing Process

Cast iron pipe fittings are manufactured using a technologically mature process.[56] It begins with the making of molten iron in a foundry with fuel provided by foundry coke or an electric furnace. The raw materials are scrap steel, iron scrap, and other materials such as silicon carbide and carbon. The

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[51] Conference transcript, p. 171.

[52] Conference transcript, pp. 83-84.

[53] Because of the ease of dismantling, flanged fittings are used in places where maintenance is often required.

[54] Conference transcript, pp. 158-159. As previously mentioned, most non-malleable flanged fittings are likewise used for applications other than fire protection/sprinkler systems. However, whereas most flanged ductile fittings are made to American Waterworks Association specifications, none of the non-malleable fittings are. Staff conversation with ***, February 27, 2003. See also conference transcript, p. 10. As previously mentioned, although flanged ductile fittings are excluded from the scope of the investigation, flanged non-malleable fittings are within the scope.

[55] Conference transcript, pp. 45-46, and Commission e-mail correspondence, ***, February 27, 2002.

[56] Manufacturing processes and technologies for iron castings are well-established, even for a relatively new product like ductile iron (ductile iron has been extensively used since the 1960s), and are similar throughout the world, although respondents argue that the production process used in China to produce the subject merchandise is not as technologically advanced as that used in the United States. U.S. producers operate highly automated, state-of-the-art, high-volume plants, whereas the Chinese producers apparently use a variety of production methods, some of which are reportedly not as technologically advanced nor environmentally friendly as those used in the United States (e.g., "floor molding") and which were abandoned by U.S. producers decades ago. In addition, the U.S. foundry industry is heavily regulated and continued investment in pollution abatement is required of domestic producers as a condition of operations as new, more stringent standards are issued by the Environmental Protection Agency (EPA). The Chinese producers, on the other hand, are not required to comply with these strict environmental regulations. Conference transcript, pp. 21, 140, and 141 and postconference brief of petitioners, pp. 5 and 21-24.

molten iron for cast iron fittings contains approximately 3.5 percent carbon, 2.5 percent silicon, and 0.5 percent manganese by weight, but may vary.

The casting process begins with the making of a pattern, which has the same external form and shape as the designed fitting. Sand casting is the predominant method used in the making of cast iron fittings. Molding sand, after being mixed with a binder, is spread around the pattern in a mold, and then rammed by a machine to compact the sand. The pattern is then withdrawn, leaving a mold cavity in the sand. Solid molded sand cores are inserted to form the internal shape of the fitting. Two mold halves are put together with the core in the center. A system of gates, risers, and vents is provided in the casting cavity to ensure a smooth flow of the molten iron into the mold cavity under gravity.[57]

To form the shape of the fittings, molten iron is poured into the mold cavity. After the iron solidifies, the red-hot fittings are shaken out of the sand on a shaker table or belt and allowed to cool for four to five hours.[58]

Ductile iron fittings are produced by pouring molten low-sulfur-based iron into a pressure ladle, where it is treated with magnesium. This process requires closely controlled conditions for the ductile iron to maintain its superior characteristics.[59] Many malleable, non-malleable, and ductile cast iron pipe fittings are available in similar configurations and all are produced using sand casting; however, the specific molds for the individual castings are reportedly not interchangeable. After casting, the production of non-malleable and ductile cast iron pipe fittings is essentially complete, except for cooling, cleaning, and, if necessary, machining, threading, or finishing.[60] In contrast, malleable fittings are subjected to an additional process of annealing and controlled cooling after casting.

A ductile cast iron fitting, because of its superior physical yield strength, is lighter and has thinner walls than a non-malleable cast iron fitting of the same inside diameter. Therefore, on the basis of weight, ductile iron is more expensive to produce than non-malleable iron because of the inoculation of magnesium during the production process, more tightly controlled production conditions requiring a longer production process, and the relative difficulties in finishing compared with non-malleable iron.[61] Malleable iron castings are more expensive to produce per pound than both the ductile iron and non-malleable iron castings because of the additional heat treatment process described above.[62] On the basis of pieces, however, the stronger ductile fittings have been described as a cost effective alternative to malleable fittings in that the ductile fittings cost less than the malleable fittings to manufacture, but are sold at prices similar to those of non-malleable.[63]

Domestic Like Product Issues

The petitioners argued in the preliminary and final phases of the investigation that the Commission should find one domestic like product consisting of non-malleable (and ductile) cast iron pipe fittings defined in the scope of the investigation. They argued that all items within the definition of

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[57] For small fittings, one cast can be made for many pieces.

[58] Staff telephone conversation with ***, March 6, 2002.

[59] Conference transcript, p. 129.

[60] The cast iron can also be galvanized or tin-plated, if so specified.

[61] Conference transcript, pp. 77-78.

[62] *Gray and Ductile Iron Castings Handbook*, p. 96.

[63] Conference transcript, p. 147; postconference brief of JDH, exh. 5, pp. 2-9 through 2-11 and exh. 1, p. 14; and postconference brief of petitioners, p. 8.

the scope of the investigation have similar physical characteristics, are completely interchangeable in end use, and are sold through identical channels of distribution.[64]

The only specific alternative domestic like product argument raised by respondents in the preliminary phase of the investigation was that of JDH, an importer of ductile cast iron pipe fittings from China.[65] JDH argued that all ductile pipe fittings and non-malleable cast iron pipe fittings should be considered two separate domestic like products.[66] In its final phase questionnaires, the Commission requested extensive like product information from questionnaire recipients. The six factors typically considered by the Commission[67] in defining the domestic like product are discussed below with respect to non-malleable and ductile cast iron pipe fittings.[68]

Physical Characteristics and Uses

In this regard, all parties[69] agree with *** that ductile pipe fittings are typically stronger but lighter than non-malleable pipe fittings because ductile pipe fittings have thinner walls than non-malleable pipe fittings. To a certain extent, the two products can be used in the same way. Whereas both are used in fire protection systems, ductile pipe fittings are used in higher pressure ratings as compared to non-malleable cast iron pipe fittings.

***[70] maintains that the physical characteristics of both ductile and non-malleable pipe fittings are the same except that ductile pipe fittings have higher tensile strength and more corrosion resistance.[71] Ductile fittings typically have thinner wall sections and stronger material requirements than non-

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[64] Conference transcript, p. 20, petitioners' postconference brief, pp. 5-8, and prehearing brief, pp. 4-13.

[65] Although respondent Smith-Cooper in the preliminary phase of the investigation did not provide a specific like product alternative, it stated that petitioners have defined the scope to create an "industry definition that will not withstand scrutiny." It questioned exclusion of the following from the scope: ductile flanged fittings, which it stated are made by four firms other than petitioners (American Cast Iron Pipe, U.S. Pipe, Tyler Pipe, and Union Pipe); grooved fittings, which are currently made by Anvil and Victaulic; and fittings greater than 6 inches. Postconference brief of Smith-Cooper, pp. 1-4. During the final phase of the investigation, American Cast Iron Pipe and Tyler Pipe responded that they do not produce non-malleable/ductile pipe fittings, U.S. Pipe responded that it produces ***, and Union Pipe and Victaulic ***.

[66] JDH adds that, in this regard, the like product definition for ductile fittings should not be restricted to threaded fittings, but should be expanded to cover all methods by which pipes and fittings are joined. Postconference brief of JDH, pp. 1-4 and 13-14.

[67] The Commission's decision regarding the appropriate domestic products that are "like" the subject imported products is based on a number of factors including (1) physical characteristics and uses; (2) common manufacturing facilities and production employees; (3) interchangeability; (4) customer and producer perceptions; (5) channels of distribution; and, where appropriate, (6) price.

[68] Comments by producers and importers regarding similarities and differences with respect to the six like-product criteria typically considered by the Commission for the following product combinations are presented in app. D: (1) flanged ductile fittings compared with flanged non-malleable fittings, (2) fittings 6 inches and under in inside diameter compared with fittings over 6 inches in inside diameter, and (3) non-malleable/ductile grooved fittings compared with subject non-malleable/ductile fittings. Comments by purchasers to similar questions are discussed in part II of this report.

[69] This includes ***.

[70] ***. *** says that the prices of Taiwanese pipe fittings are higher than those from China but Taiwanese products are of higher quality.

[71] *** questionnaire response.

malleable fittings. *** contends that within the fire protection industry, ductile and non-malleable pipe fittings are used in the same manner but that most sprinkler contractors prefer non-malleable or gray cast iron pipe fittings.

*** states that ductile and gray iron are similar and readily substitutable. *** concedes that ductile pipe fittings have thinner walls and weigh less than non-malleable pipe fittings but that there is no difference in the uses of the two products.

***[72] maintains that ductile and gray cast iron pipe fittings are all made to the same set of engineering specifications, the only difference is the specific strength of each type of fitting. *** contends that both products are used in the same way in fire protection applications.[73]

*** maintains that ductile pipe fittings are less porous and less expensive than non-malleable fittings and demonstrate tensile strength that non-malleable pipe fittings do not. Ductile pipe fitting dimensions are also much smaller, making them lighter and easier to handle by installers than non-malleable pipe fittings. Ductile pipe fittings also offer better corrosion resistance which reduces material failure. *** also states that ductile pipe fittings are typically used in high pressure systems while non-malleable can only be used in low pressure applications.[74]

Interchangeability of the Products

In their questionnaire responses, ***[75] state that ductile and non-malleable cast iron pipe fittings are used interchangeably in fire protection systems.

In its postconference brief, JDH stated that, in theory, the two types of fittings may be interchangeable in certain applications, but because of the end users' existing experience with non-malleable cast iron pipe fittings, they are, in reality, not interchangeable. ***.

Channels of Distribution

*** contend that ductile and non-malleable pipe fittings are distributed through the same channels. They state that non-malleable cast iron pipe fittings are sold on a nationwide basis by the domestic manufacturers and importers to distributors,[76] which in turn sell to contractors of fire protection/sprinkler and steam heat conveyance systems.

*** maintains that some distributors carry both ductile and non-malleable pipe fittings but most distributors only deal with one type of fitting. *** observes that the mid-west and north-east markets prefer ductile fittings while those in the west coast and south prefer non-malleable cast iron pipe fittings.

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[72] ***.

[73] Questionnaire response.

[74] Ductile fittings are designed for 300 psi pressure while non-malleable fittings are for 175 psi pressure. *** questionnaire response.

[75] *** qualifies its response that both are interchangeable up to 300 psi system pressure.

[76] The distributors may also fabricate certain systems at their distribution outlets in order for the contractors to be able to purchase units for installation. Conference transcript, p. 172. Respondent Star Pipe reports that sales of small quantities of products with short lead times typically are made from the U.S. producers' and importers' satellite distribution centers, while sales of large quantities of particular products with longer lead times are shipped directly to the customer without entering into the distribution centers. Postconference brief of Star Pipe, p. 25.

Customer and Producer Perceptions of the Products

*** reports that there are no discernable differences between ductile fittings and non-malleable pipe fittings[77] and *** maintains that both products are sold to the same fire-protection market. *** reports that customers and producers recognize that ductile iron pipe fittings are typically stronger and thinner than non-malleable pipe fittings.

JDH, on the other hand, argued in the preliminary phase of the investigation that the specific ductile fittings it imports for fire protection/sprinkler systems have been recognized by the fire protection industry as having proven qualities different from those associated with non-malleable fittings (ASME B.16.4) and equal to those of malleable fittings (ASME B.16.3).[78] *** states that customers consider ductile to be a new technology product. Consequently, ductile users would not like to use non-malleable iron, just like non-malleable iron users do not like to switch to ductile fittings.[79]

The Use of Common Manufacturing Facilities and Production Employees

*** state that, except for the difference in chemical compositions, ductile and non-malleable pipe fittings can be made in the same facility using the same processes and employees.[80] *** agrees that both products can be made in the same foundry but states that ductile iron workers typically require more technical skills than non-malleable iron workers. *** also agrees that both products can be made on the same equipment and using the same employees but stresses that the manufacturing processes of the two products are basically different because the making of ductile iron requires the addition of magnesium as well as a different technology.[81]

Price

At the hearing there was testimony that ductile iron pipe fittings may cost more per ton than the non-malleable pipe fittings but in terms of the selling price per fitting the ductile fittings could be equal to or less than the non-malleable cast iron pipe fittings because the ductile fittings have thinner walls and thus are noticeably lighter.[82]

*** states that prices are virtually the same for both products.[83] *** contends that imported subject ductile and non-malleable pipe fittings are sold at approximately the same price but at a substantial discount to domestic subject fittings. *** maintains that importers from China sell ductile iron threaded fittings at the same or lower prices than Chinese non-malleable cast iron pipe fittings.

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[77] *** maintains that non-malleable fittings can either be imported or domestically produced while all ductile fittings are imported.

[78] Although the National Fire Protection Association (NFPA) does not list a specific standard for fittings made from ductile iron, the ductile fittings imported by JDH meet the standards imposed for malleable iron. Conference transcript, p. 133, and postconference brief of JDH, p. 4.

[79] *** made this point in the response to the issue of interchangeability.

[80] Questionnaire responses. Ductile iron contains a small amount of magnesium which is added to the molten iron.

[81] Questionnaire response.

[82] Hearing transcript, p. 123.

[83] Questionnaire response.

*** contends that the prices of fittings on a weight basis are higher for ductile fittings. However, in terms of unit item price, the selling price is very close, although ductile fittings may command higher prices.

***, on the other hand, maintains that ductile fittings are usually less expensive than non-malleable fittings because ductile fittings are lighter and thus benefit from lower raw material and transportation costs.

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

U.S. MARKET SEGMENTS/CHANNELS OF DISTRIBUTION

Non-malleable cast iron pipe fittings are primarily used in fire sprinkler systems with some use in steam heat systems; some ductile fittings are also used for these applications.[1] In the U.S. market, producers' and importers' sales of such non-malleable/ductile cast iron pipe fittings are made primarily to distributors[2] and fabricators.[3] Fabricators purchase fittings and pipe, put threading on the pipe, and combine pipe and fittings to create semi-complete fire sprinkler systems. In order for fittings to be used in a fire sprinkler system they must have certification and must be 1 inch or more in diameter. Certification may not be needed in steam heating systems and smaller diameter fittings may be used.

There are two major types of cast iron pipe fittings used in fire sprinkler and steam heat systems: non-malleable and ductile.[4] The petitioners produce a variety of fittings including the subject non-malleable cast iron pipe fittings; U.S. jobber Frazier produces ductile cast iron pipe fittings, and Chinese imports include both non-malleable and ductile cast iron pipe fittings. According to the petitioners, non-malleable and ductile fittings are used in the same way and compete with each other. However, both non-malleable and ductile fittings seldom, if ever, are used within a single sprinkler system.[5] Four of the five responding importers reported that non-malleable and ductile fittings can be used in the same application in fire sprinkler systems. One of these reported the two products were 100 percent interchangeable; two reported they were interchangeable in fire sprinkler systems; and one reported their interchangeability depended on the water pressure. The importer that reported they were not interchangeable reported that they can be used in the same applications; however, end users typically prefer one or the other and do not like to switch between the two. Ten of the eleven responding purchasers reported that non-malleable and ductile fittings were used in the same applications. Eight of the ten responding purchasers reported that they were both used in fire protection systems, with one reporting use in branch lines, and one reporting use in pressure applications. Six of the nine responding purchasers reported physical differences between ductile and non-malleable, including that ductile was lighter, stronger, better, softer, less brittle, and handled a higher water pressure. Ten of 13 responding purchasers reported differences in price with two reporting U.S. non-malleable was more expensive than imported ductile and non-malleable, three reporting ductile was less expensive than non-malleable, two reporting non-malleable was less expensive than ductile, the other three did not report which was less expensive.

Purchasers were asked if they were end users or distributors. Only one of the twelve responding firms reported that it was an end user, with seven reporting that they were distributors, two reporting that they were fabricators of fire protection systems, and two reporting they were both distributors and

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[1] Most ductile cast iron pipe fittings, however, are made to grades or physical configurations that have been excluded from the scope of the investigation.

[2] In some cases the importers act as the distributors, ***.

[3] Importers report that fabricators are end users while the petitioners report that fabricators are a type of distributor. Mr. Roger Schagrin, counsel for petitioners, conference transcript, p. 172; and Mr. Bill Hurley, Marketing Manager, JDH, conference transcript, p. 151.

[4] It is unclear whether or not ductile fittings are currently used in steam heating systems. In its importer questionnaire response during the preliminary phase of the investigation, *** reported that ductile fittings could not be used in steam heating systems because they do not crack. Fittings that crack when hit with a hammer can be easily replaced.

[5] Mr. Robert Clark, President, Clark Sprinkler Supply, hearing transcript, p. 97.

fabricators. Some firms reporting that they were distributors may have been fabricators of fire protection systems and distributors of these systems rather than distributors of just fittings per se.

Captive Shipments

U.S. producers sold *** short tons of non-malleable cast iron pipe fittings, i.e., *** percent of U.S. shipments, to related parties in 1999; this fell to *** in 2000, 2001, and 2002. U.S. producers had *** internal consumption of non-malleable/ductile cast iron pipe fittings.

SUPPLY AND DEMAND CONSIDERATIONS

U.S. Supply

Domestic Production

Based on available information, U.S. producers of non-malleable/ductile cast iron pipe fittings are likely to respond to changes in price with significant changes in the quantity shipped to the U.S. market. Supply responsiveness is somewhat constrained by the small share of shipments which are exported. However, *** levels of excess capacity, *** levels of inventories, and the ability to switch between production of non-malleable/ductile cast iron pipe fittings and other products suggest greater supply responsiveness.

Industry capacity

U.S. producers' capacity to produce non-malleable/ductile cast iron pipe fittings was *** short tons in 1999 and 2000, then fell to *** short tons in 2001. Production of non-malleable/ductile cast iron pipe fittings fell from *** short tons in 1999 to *** short tons in 2001, and *** short tons in interim (January-September) 2002, down from *** short tons in interim 2001. Capacity utilization for non-malleable/ductile cast iron pipe fittings fell between 1999 and 2002, falling from *** percent in 1999 to *** percent in 2001 and falling again to *** percent in interim 2002.

Export markets

U.S. producers' export shipments of non-malleable cast iron pipe fittings were *** during the period examined and ***. The percentage of U.S. producers' export shipments relative to their total shipments of non-malleable/ductile fittings was *** percent throughout the period examined.

Inventory levels

U.S. producers' inventories of non-malleable cast iron pipe fittings were *** during the period examined. ***. The ratio of such inventories to total shipments of non-malleable/ductile cast iron pipe fittings increased from *** percent in 1999 to *** percent in 2001 and was *** percent in interim 2002 compared with *** percent in interim 2001.

Production alternatives

*** reported that they produced other products on the same equipment and machinery used to produce subject cast iron pipe fittings. For ***, these products include malleable pipe fittings, ***. ***.

Chinese Imports

Industry capacity

The petitioners report that thousands of foundries exist in China, and petitioners estimate that 50 of these foundries produce non-malleable/ductile cast iron pipe fittings.[6] However, the petitioners only provided the names of three Chinese producers in the petition. The respondents report that they know of only *** Chinese producers that have the UL or Factory Mutual (FM) certification essential for sales into the fire sprinkler market.[7] The importers report that certification is a difficult process which is done in the United States.[8]

In the preliminary phase of the investigation, foreign producer data were reported by five Chinese producers that sold to U.S. importers; three of these produced only non-malleable fittings, one produced only ductile fittings, and one produced both non-malleable and ductile fittings. To date there has been only one response to the final phase questionnaires so the data from the preliminary phase questionnaires are used here. These producers' capacity to produce subject fittings rose from 8,294 short tons in 1999 to 10,767 short tons in 2001. Production of subject fittings increased from 5,442 short tons in 1999 to 5,949 short tons in 2001. Capacity utilization for subject fittings decreased from 65.6 percent in 1999 to 55.3 percent in 2001.

Alternative markets

The petitioners report that there is no alternative market for subject Chinese cast iron pipe fittings except Canada. The five Chinese producers' export shipments to the United States, as a share of all shipments of subject fittings, were *** percent in 1999, *** percent in 2000, and *** percent in 2001. None of the product produced by these firms was sold in China between 1999 and 2001.

Inventory levels

The five responding Chinese producers' inventories of subject fittings grew irregularly during 1999-2001. The ratio of such inventories to total shipments, however fell irregularly from *** percent in 1999 to *** percent in 2001.

Production alternatives

The responding Chinese producers reported that other products produced on the same equipment as subject fittings include malleable fittings and fire hydrant bodies.

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[6] Mr. Roger Schagrin, counsel for petitioners, conference transcript, p. 50.

[7] Postconference brief of Smith-Cooper, p. 12 and exh. 3; see also testimony of Mr. Mark Martelle, Project Engineer, Smith-Cooper, conference transcript, pp. 156-157.

[8] Mr. Mark Martelle, Project Engineer, Smith-Cooper, conference transcript, pp. 156-157.

U.S. Demand

Demand for non-malleable/ductile cast iron pipe fittings, as measured by weight of apparent consumption, fell between 1999 and 2001 and continued to fall between interim 2001 and interim 2002.[9] Demand for non-malleable/ductile cast iron pipe fittings is ultimately derived from the demand for end uses in which they are employed. The petitioners state that non-malleable/ductile cast iron pipe fittings are used mostly in the fire protection/sprinkler market and to a much lesser extent in steam heat conveyance systems. The importers essentially agree; four of the five importers that answered the question reported that non-malleable/ductile cast iron pipe fittings are used in the fire protection market. One of these also reported use in steam heating systems, and one reported use in floor flanges. Purchasers that were distributors were asked to report their customers' use of their product. Ten of the eleven responding firms reported that the non-malleable/ductile cast iron pipe fittings they distributed were used in the fire protection market; the other reported selling to other distributors.

Producers, importers, and purchasers were asked how the demand for non-malleable/ductile cast iron pipe fittings had changed since 1999. *** reported that demand was down due to a slowdown in the general economy and imports. *** reported that demand depended on demand for fire sprinklers, *** reported that demand had been hurt by imports, while *** reported that demand remained strong.[10] Five importers responded to the questions on demand; one reported that demand had fallen because of competition from other products, one reported demand had fallen because of the economy, and three reported that demand was unchanged. The respondents reported that the demand for non-malleable/ductile cast iron pipe fittings has been falling because of the increased use of other types of products/techniques for producing fire control systems. At the staff conference, respondents argued that demand for non-malleable/ductile cast iron pipe fittings has been falling for a relatively long time because newer technologies have replaced some non-malleable/ductile cast iron pipe fittings.[11] In addition, they argued that demand has fallen in 2001 due to the recession.[12] Only three purchasers responded to the question on demand, one reporting that demand was unchanged and two reporting that demand had changed (but only one of these reported how demand had changed, reporting that it had increased).

Demand Characteristics

Substitute products

*** reported that substitutes for non-malleable/ductile cast iron pipe fittings do not exist. Five of the eight responding importers reported substitutes including malleable iron fittings, post-chlorinated

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[9] Weight, however, may overstate the decline in units consumed since ductile fittings weigh less per fitting than non-malleable fittings. The weight of both ductile and non-malleable fittings fell between 1999 and 2001. Ductile fittings weight, however, fell slightly less on a percentage basis, and as a result, ductile fittings' share of the weight of all subject fittings increased slightly between 1999 and 2001. Between the interim periods, the overstatement of the decline in consumption may be larger because while non-malleable fittings and non-malleable/ductile fittings declined, there was an increase of nearly *** percent in ductile fittings consumption.

[10] Mr. Tom Gleason, Vice President, Marketing and Sales, Ward, reported that demand for construction that requires a fire sprinkler system had fallen fairly substantially in the past year or so. Hearing transcript, p. 73.

[11] Mr. Mark Martelle, Project Engineer, Smith-Cooper, conference transcript, pp. 106-108, 154. Also see Smith-Cooper's postconference brief, exh. 2.

[12] Star Pipe's postconference brief, p. 12.

polyvinyl chloride, copper, stainless flex tube, groove fittings, welded fittings, and couplings with mechanical push-on ends. The respondents reported that grooved fittings allow the use of thinner less expensive pipe and reduce the labor cost of installation. Thus, while grooved fittings themselves may be more expensive, the use of grooved fittings may reduce the overall cost of the fire sprinkler system.[13] Twelve purchasers responded to the question of whether there were substitutes for non-malleable/ductile cast iron pipe fittings, with four reporting no substitutes and eight reporting one or more substitutes. Substitutes included malleable fittings, grooved end fittings, plastic, copper, stainless, and CPVC. Two of the responding firms reported that mechanical/grooved fittings were possible substitutes but expensive.

Purchasers were asked if flanged ductile fittings and flanged non-malleable fittings were used in the same applications. Eight of the ten responding purchasers reported that they were used in the same applications. Four reported applications in which they were interchangeable; two of these reported in fire protection systems, one reported with pipe, and one reported in pumping stations, reservoir, metering, and flow control. Three reported differences between these two types of fittings; one reported price was the biggest difference, one reported differences in the hardness of the metal, and one reported that ductile was stronger. When asked if there were differences in price, three reported no difference, three reported non-malleable was less expensive.

Purchasers were asked if fittings with diameters less than 6 inches were used in the same applications as those over 6 inches. Six of the ten responding purchasers reported use in the same applications, with three of these reporting use in fire protection. Four of six responding purchasers reported no difference in price between fittings below and above 6 inches in diameter. Two purchasers reported that the larger the fittings, the higher the price.

Purchasers were asked if grooved fittings were used in the same applications as subject fittings; Ten of the eleven responding purchasers reported that they were used in the same applications, with five of these reporting both were used in fire protection systems and one firm reporting that both were used to connect pipe together. One of the firms reporting that they were used in the same applications also reported that threaded tended to be used in applications of 2 ½ inches or less and grooved tended to be used for larger pipes. The differences reported were in installation or joining, the labor required for installation, difference in quality, and that threaded and grooved fittings tended to be used with different sizes of pipe. Five of the eight responding purchasers reported differences in price with four reporting that grooved fittings are more expensive, and one reporting that prices differed by 10 percent.

Cost share

At the staff conference, both petitioners and respondents agreed that the cost of fittings was about 5 percent of the cost of an installed fire sprinkler system or steam heating system.[14] However, a fire protection system is typically part of a new building, thus the relevant cost share may be the share of the cost of the building rather than the share of the cost of the fire protection system. The cost share of the fittings of a new building thus would be much less. Nine purchasers reported the percentage cost of

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[13] Mr. Mark Martelle, Project Engineer, Smith-Cooper, conference transcript, p. 107.

[14] Mr. Robert Clark, President, Clark Sprinkler Supply; and Mr. Frank Finkel, President, Davis and Warshow, conference transcript, pp. 65-66; and Mr. Mark Martelle, Project Engineer, Smith-Cooper, conference transcript, p. 156. At the hearing, Robert Clark reported that fittings represent 10 percent of the component costs of the sprinkler system. Hearing transcript, p. 59.

the end use product; of these, five reported it fell in a range from less than 1 percent to 12 percent of the cost of end use products.[15]

SUBSTITUTABILITY ISSUES

One factor limiting substitutability is the "Buy American" requirement. Petitioners estimate that 5 to 10 percent of jobs are government jobs which require domestically-produced parts.[16] However, in their questionnaires, all three responding producers reported that "Buy American" covered *** percent of their sales. Five of the nine responding purchasers reported selling under "Buy American" programs. The four that reported the percentage which they sold under "Buy American" programs sold between 5 and 20 percent of their fittings under these programs. Mr. Finkel reported that in the New York metropolitan area there were two markets, the union market and the non-union market, and that his firm sold domestically produced non-malleable cast iron fittings to the union market but did not sell to the non-union market that typically used imported fittings.[17] However, union contractors are not obligated to use domestic product; this is a matter of choice, as competition for building contracts become more competitive, union contractors are expected to increase use of imported fittings.[18] Mr. Finkel reported that New York State does not have a Buy American requirement but there is a strong preference for American product in New York City.[19]

At the conference the U.S. producers stated that certification is required for fire sprinkler systems and this would limit substitutability to those Chinese manufacturers which are certified, although they stated that it is easy for Chinese firms to become certified.[20]

Purchase Factors

Purchasers varied on how frequently they purchased non-malleable/ductile cast iron fittings with three reporting purchasing daily, five weekly, one several times per month, and three monthly. Before making a purchase, seven of the fourteen responding purchasers contacted no or one supplier, three contacted one to two suppliers, three contacted three suppliers, and one reported working with four to five suppliers but selecting one as the primary supplier. Purchasers were asked how frequently they changed suppliers. Seven of the ten responding purchasers stated that they seldom changed suppliers; one reported changing suppliers every 3 to 5 years or longer; one reported it did not have a lot of choices left as the industry gets smaller every year; and one reported that how frequently it changes suppliers depends on how often its suppliers were bought by the purchaser's competitors. Of the five purchasers reporting changes in suppliers in the past 3 years, one reported adding an import source to complement its domestic line, one reported dropping *** because it was not competitive with big importers like ***, and three reported shifting between various import sources.

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[15] One firm reported that fittings were 25 percent of the cost of the material used in fire protection systems, one firm reported that the cost of fittings was from 12 to 25 percent of the cost of a sprinkler system, and two firms reported shares for various types of fittings, apparently reporting the share of these types of fittings in their total fittings purchases.

[16] Mr. Tom Gleason, Vice President Sales and Marketing, Ward Manufacturing, conference transcript, p. 67.

[17] Mr. Frank Finkel, President, Davis Warshow, hearing transcript, pp. 56, 93.

[18] Mr. Tom Gleason, Vice President Sales and Marketing, Ward, conference transcript, p. 95.

[19] Mr. Frank Finkel, President, Davis Warshow, hearing transcript, pp. 59-61.

[20] Mr. Kim, Vice President, Manufacturing, Anvil, conference transcript, p. 66.

Purchasers were asked if they knew of any product that did not meet specifications which was for sale in the U.S. market. Six of the seven responding purchasers reported there were none. The one firm reporting that it received material which did not meet specifications stated that it did not know the country of origin of the product and that it had been returned to the supplier. When asked to list the three most important factors considered when choosing a supplier (once specifications had been met), quality was ranked first most frequently, price was ranked second most frequently,[21] and availability was ranked third most frequently. The only other factor mentioned by more than one purchaser was range of products (table II-1).

Table II-1
Non-malleable/ductile cast iron pipe fittings: Most important factors considered when selecting a supplier

Factor	First	Second	Third
Quality	6	3	0
Price/cost	3	5	2
Availability	0	1	6
Range of product	0	1	1
Other [1]	2	1	2

[1] Other includes seller standing behind its product and domestic supply for most important factors, inventories for second factor, and speeds of shipment and service for third factors.

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

Only three of the twelve responding purchasers did not require some form of certification or prequalification; however two of these three reported that all product was certified anyway. Eight of the nine purchasers that require prequalification require it for all their purchases, with the other requiring it for 95 percent of its purchases. Five firms reported the time required to qualify a new supplier, with times ranging from one week to 6 months. Only one of the ten responding purchasers reported a supplier, ***, that had failed to qualify; however one reported that it did not purchase Chinese product because of its poor quality perception.[22]

Purchasers were asked what factors determined the selection of a supplier of non-malleable/ ductile cast iron fittings once the fittings had met minimum specifications. Ten purchasers reported factors used to determine a supplier, with a number of these reporting more than one factor. Five purchasers reported price/cost; three reported availability; two each quality, service, and meeting standards; one each reported packaging, product experience, customer feedback, product testing and consistent quality.

[21] However, more purchasers (10) ranked price among their top three factors, compared with nine reporting quality and seven reporting availability.

[22] In addition, one firm reported that both Ward and Anvil had told it that they did not need additional distributors. This purchaser reported that it sold imports because it had difficulty getting domestic product.

Factors Affecting Purchasing Decisions

Purchasers were asked to report if non-malleable/ductile cast iron fittings from different countries were used in the same applications and if there were any differences in product characteristics or sales conditions. Nine of the eleven responding purchasers reported that U.S. and Chinese products were used in the same applications. Of the two reporting that they were not used in the same application, one explained that only U.S. product could be used in jobs specifying U.S. content. In addition, one purchaser also reported that U.S. and Taiwan products, and Chinese and Taiwan products were used in the same applications, and one purchaser reported that while U.S. and Indian products could not be used in the same applications because of "Buy American" provisions, Indian and Chinese products could be used in the same applications. Six of eleven responding purchasers reported that some of their customers preferred product from specific countries with five of these reporting preferences for U.S. product or U.S./Canadian product and the other reporting that at times the firms purchasing from it will request the lowest priced product. Four of ten responding purchasers reported differences in availability by sources, with two reporting that Anvil provided a greater product range, one reporting that sizes over 2 inches were hard to come by outside the United States, and one reporting that ductile fittings were only available from imports. All twelve responding purchasers agreed that U.S. prices were higher than the prices of Chinese product.

Purchasers that bought from one source when a less expensive product was available from another source were asked to explain why. None of twelve responding firms reported that they always bought the least expensive product; five reported usually, six reported sometimes, and one reported never buying the least expensive product. Reasons for not buying from the least expensive source included preferences by the purchaser or its customers for domestic product (reported by seven purchasers; two of these, however, reported that although they try to sell domestic they sometimes sell foreign); availability (reported by three); relationship (reported by three purchasers); and service (reported by one). In addition, one purchaser reported that, although it seldom purchased higher priced product, it might pay more for superior product.

Purchasers were asked to report the importance of 15 factors in their purchase decision and to make country-by-country comparisons on the same 15 purchase factors (table II-2). All twelve responding purchasers agreed that product consistency and product meeting specifications were very important, with eleven of twelve reporting that availability was also very important. Nine of ten purchasers comparing U.S. and Chinese product reported that the Chinese product was lower priced.

Comparisons of Domestic Products with Subject and Nonsubject Imports

Ward and Anvil reported average lead times of ***, while Frazier reported an average lead time of ***. Eight of the ten responding importers reported average lead times of from 2 to 8 days, while two reported lead times of 30 to 65 days. Producers and importers were asked to report whether or not the domestic and imported products were used interchangeably or differed in product characteristics or sales conditions. *** reported that U.S.-produced, imported Chinese, and imported nonsubject non-malleable/ductile cast iron pipe fittings are used interchangeably. *** reported that there are no differences in product characteristics or sales conditions between U.S.-produced, imported Chinese, and nonsubject imported non-malleable/ductile cast iron pipe fittings. *** reported differences in product characteristics or sales conditions between U.S.-produced, imported Chinese, and nonsubject imported non-malleable/ductile cast iron pipe fittings. According to ***, the U.S. product has better quality, delivery times, and technical support.

Seven of the nine responding U.S. importers reported that U.S. product and imports from China are interchangeable. One firm reported "yes and no" and stated that in the New York area, the major

Table II-2
Non-malleable/ductile cast iron fittings: Importance of purchase factors as reported by purchasers and comparisons of U.S. product with Chinese product and Chinese product with nonsubject country product as reported by purchasers

Factor	Importance			U.S. v China			China v nonsubject		
	V	S	N	S	C	I	S	C	I
	Number of firms responding								
Availability	11	1	0	3	6	1	0	1	0
Delivery terms	6	5	1	5	3	2	0	1	0
Delivery time	7	5	0	5	4	1	0	1	0
Discounts offered	7	5	0	0	8	2	0	1	0
Lowest price	8	4	0	0	1	9	0	1	0
Minimum quantity requirements	3	6	3	3	6	1	0	1	0
Packaging	5	4	3	2	6	2	0	1	0
Product consistency	12	0	0	2	7	1	0	1	0
Product meets specifications	12	0	0	2	8	0	0	1	0
Product quality above specifications	7	4	1	3	5	2	0	1	0
Product range	7	4	1	5	4	1	0	1	0
Reliability of supply	10	2	0	3	6	1	0	1	0
Technical support/service	4	7	1	4	6	0	0	1	0
Transportation network	5	7	0	3	6	1	0	1	0
Lowest U.S. transportation costs[1]	4	6	2	2	7	0	0	1	0

[1] One firm that compared the other factors for U.S. vs China did not give an answer for lowest transportation cost.

Note.–For importance V=very important, S=somewhat important, N=not important. For the country comparisons, S=U.S.'s product is superior, C=both countries' products are comparable, I=U.S.'s product is inferior.

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

supply houses purchased only domestic products which were typically used by union contractors for government work, and in new construction. It further stated that imports were sold mainly by independent distributors and hardware stores, and typically used in repairs, whereas the large distributors did not want to purchase imports because they did not want to mix their inventories. The remaining firm reported that U.S. and imported non-malleable cast iron pipe fittings were not interchangeable because the United States did not produce ductile fittings. This firm reported that while ductile fittings could be used in the same applications as non-malleable, non-malleable could not be used in many of the applications in which ductile could be used. Ductile was better because it was thinner, lighter, stronger, less likely to crack or leak, more corrosion resistant, and able to withstand higher water pressures. Eight of nine responding importers reported that U.S. and nonsubject products are interchangeable, the other reported that they were not interchangeable because nonsubject product was not available. Six of the seven responding importers reported that Chinese and nonsubject imported products are interchangeable, the other reported it did not know of any available nonsubject product. Importers were asked if there are any differences in product characteristics or sales conditions between U.S.-produced, imported Chinese, and imported nonsubject non-malleable/ductile cast iron pipe fittings. Four of the seven importers that answered the question reported there were differences between U.S. and Chinese products. One of these reported they were different because of "Buy American" provisions, one reported that it was different because it maintained inventories and a distribution network throughout the United States, one reported ductile was better because it was thinner, lighter, stronger, less likely to crack or leak, more corrosion resistant, and able to withstand higher water pressures, and one reported that distributors will pay list price for domestic product and domestic producers have volume rebates, can spend money on advertisements, and are FM/UL approved while typically imports were not approved because this was expensive. Two of the seven importers that answered the question reported that U.S. and nonsubject imported products have different product characteristics or sales conditions. One firm reported that only domestic can be used in projects requiring it (*i.e.*, Buy American) and one firm reported that it supplied only a limited range of sizes and styles. Five of the six responding importers reported that Chinese and nonsubject imported products do not have differences in product characteristics or sales conditions, the other firm reported U.S. and China were the only sources for product.

ELASTICITY ESTIMATES

This section discusses elasticity estimates. Parties were requested to provide comments in their prehearing briefs; no parties commented on these estimates.

U.S. Supply Elasticity[23]

The domestic supply elasticity for non-malleable/ductile cast iron fittings measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of non-malleable/ductile cast iron fittings. 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 non-malleable/ductile cast iron fittings. Analysis of these factors earlier indicates that the U.S. industry is likely to be able to somewhat increase or decrease shipments to the U.S. market; an estimate in the range of 3 to 6 is suggested.

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

U.S. Demand Elasticity

The U.S. demand elasticity for non-malleable/ductile cast iron fittings measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of non-malleable/ductile cast iron fittings. This estimate depends on factors discussed earlier such as the existence, availability, and commercial viability of substitute products, as well as the component share of the non-malleable/ductile cast iron fittings in the production of any downstream products. Based on the available information, the aggregate demand for non-malleable/ductile cast iron fittings is likely to be in a range of -0.5 to -2.

Substitution Elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[24] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced non-malleable/ductile cast iron fittings and Chinese non-malleable/ductile cast iron fittings is likely to be in the range of 3 to 6.

[24] 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 can switch from the U.S. product to the subject products (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 final dumping margins was presented in Part I in this report and information on the volume and pricing of imports of the subject merchandise is presented in Parts IV and 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 responses of the two petitioning firms and a job shop foundry that together accounted for almost all U.S. production of non-malleable/ductile cast iron pipe fittings during 2001.[1]

U.S. PRODUCERS

Petitioners Anvil and Ward accounted for *** U.S. production of non-malleable cast iron pipe fittings during 2001.[2] Domestic jobbing facility, Frazier, provided the Commission with a response to its producers' questionnaire in the final phase of the investigation. Frazier indicated in its questionnaire response that it was in support of the petition filed by Anvil and Ward. None of the reporting U.S. producers indicated any corporate relationship with firms that are engaged in importing, exporting, or producing the subject merchandise in China. The identities of those U.S. producers that supplied the Commission with questionnaire information, the locations of their manufacturing operations, their reported shares of non-malleable/ductile cast iron pipe fittings production in 2001, their positions on the petitions, and their parent firms are presented in table III-1.

Anvil, headquartered in Portsmouth, NH, is wholly owned by Mueller Group, Inc., Decatur, IL.[3] Prior to August 2001, Anvil manufactured non-malleable cast iron threaded pipe fittings in Statesboro, GA, and malleable threaded pipe fittings in Columbia, PA. In August 2001, Anvil completed the transition of its non-malleable fitting production into the Columbia foundry and sold the Statesboro plant to an unrelated party. The Statesboro casting equipment for non-malleable production was moved to Columbia and currently *** of Anvil's non-malleable pipe fittings are produced at this location.[4] Anvil invested approximately *** in new equipment and infrastructure in Columbia. In addition to non-malleable cast iron pipe fittings, Anvil produces malleable pipe fittings and grooved ductile pipe fittings

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[1] In addition to the two petitioning companies, the Commission mailed questionnaires to 16 other firms believed to possibly be producing the subject product. Frazier responded that it produced subject ductile cast iron pipe fittings primarily for ***; telephone conversation, ***, December 10, 2002. Buck responded in a telephone conversation that it ***; e-mail, January 17, 2003. In addition, six firms indicated that they did not produce the subject product, one firm reported that it produced very small amounts of flanged fittings, and seven firms did not respond to the Commission's questionnaire.

[2] The petitioners reported in the preliminary phase of the investigation, however, that a small portion (approximately *** percent) of their production of non-malleable cast iron pipe fittings is cast at outside jobber facilities in the United States. Anvil and Ward named the following *** firms as jobbing facilities for their non-malleable castings: Buck, Quarryville, PA; ***. Petitioners do not produce subject ductile fittings. See conference transcript, pp. 9 and 46-47.

[3] In August 1999, certain assets of Grinnell Supply Sales and Manufacturing Co. were sold by its parent, Tyco International, Inc., to Mueller Group, Inc. Supply Sales Company, formerly Grinnell Supply Sales and Manufacturing, is now Anvil.

[4] Anvil's non-malleable flanged fitting production was moved to its parent company's Albertville, AL, foundry in January 2002. Anvil moved the flanged fitting production to Albertville because ***.

Table III-1
Non-malleable/ductile cast iron pipe fittings: U.S. producers and the locations of their manufacturing operations, their shares of U.S. production in 2001, their positions on the petition, and parent firms

Firm	Location of manufacturing facility	Share (*percent*) of reported non-malleable/ductile production in 2001	Position on the petition	Parent firm
Anvil	Columbia, PA, and Albertville, AL	***	Support[1]	Mueller Group, Inc., Decatur, IL
Buck	Quarryville, PA	(2)	Support[3]	DVCC, Chestertown, MD
Frazier	Coolidge, TX	***	Support[3]	None
Ward	Blossburg, PA	***	Support[1]	Hitachi Metals of America, Purchase, NY

[1] Petitioner.
[2] Buck's production of the subject fittings for Ward accounted for *** percent of total reported domestic production in 2001.
[3] Permission was given in the producer questionnaire to make public the firm's position.

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

at the Columbia facility with sharing of production equipment and employees across product lines. Anvil's capacity data are based on the ***. Anvil reported ***.[5] Anvil purchases small amounts of domestic non-malleable fitting castings from ***. These purchases totaled *** short tons valued at $*** and amounted to *** percent of Anvil's production during 2001. Anvil purchased *** short tons of fitting castings valued at $*** in January-September 2002.

Ward, located in Blossburg, PA, is a wholly owned subsidiary of Hitachi Metals of America, Purchase, NY, which is wholly owned by Hitachi, Inc., a Japanese company. The producer reported ***. In addition to the subject non-malleable pipe fittings, Ward produces malleable iron pipe fittings ***. Ward *** reported small amounts of domestic purchases of non-malleable castings from *** and Buck,[6] during the period examined. These purchases of *** short tons, valued at $***, amounted to *** percent of Ward's production during 2001.

The jobbing foundries, or jobbers, from which both Anvil and Ward purchase, often specialize in the small lot casting business. These firms are utilized by petitioners when the product quantity requested is too small to be economically run on their automated production lines. A few different jobbing foundries are used by Anvil and Ward because each jobbing foundry may have distinct tools required for a specific casting.[7] Ward and Anvil provide the molds and patterns to the jobbers and the jobbers provide Ward and Anvil with the unfinished casting. Ward and Anvil then perform the finishing work on the casting (*i.e.*, shock blasting, threading, testing, and packaging) in preparation for the marketplace. Petitioners report that although these jobbing facilities are set up to produce castings, they

[5] ***.

[6] Questionnaire response in the final phase of the investigation and conference transcript, pp. 47-48.

[7] Conference transcript, pp. 47-48 and 88-89.

do not own the casting molds and patterns and cannot run them for their own use.[8] Because of this, they lack the capability to market the product they produce and only produce the castings as a jobber under contract with Anvil or Ward.

Buck, a jobbing facility for Ward, located in Quarryville, PA, is owned by DVCC, Chestertown, MD. During the preliminary phase of the investigation, Buck reported ***.[9]

Frazier, a job shop foundry located in Coolidge, TX, reported that it produces subject ductile fittings ***.

The domestic production of certain items that have been specifically excluded from the scope of the investigation are discussed below. Ductile fittings used in waterworks applications and ductile flanged fittings are produced in the United States primarily by a handful of U.S. producers,[10] none of which produce non-malleable cast iron pipe fittings.[11] Likewise, cast iron soil pipe fittings are not produced by the domestic producers of non-malleable cast iron pipe fittings that are the subject of this investigation.[12] Domestic grooved ductile fittings producers include Anvil, Victaulic, ***, and Central Sprinkler.[13]

U.S. CAPACITY, PRODUCTION, AND CAPACITY UTILIZATION

Data on U.S. producers' production capacity, production, and capacity utilization are shown in table III-2. Domestic production declined from 1999 to 2001, falling by *** short tons or *** percent. Domestic production declined by *** percent between the interim periods. Similarly, U.S. producers' capacity utilization declined by *** between 1999 and 2001 and decreased by *** between the interim periods. Petitioners report that Anvil's Statesboro plant closure is the cause of the reduced domestic production capacity in 2001.[14]

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[8] Conference transcript, pp. 47-49 and 88.

[9] ***.

[10] Domestic producers of ductile cast iron pipe fittings for waterworks applications and ductile flanged fittings were identified as Tyler Pipe, American Cast Iron Pipe, Union Pipe, and U.S. Pipe in the preliminary phase of the investigation. Conference transcript, p. 105. Postconference brief of Smith-Cooper, p. 3. In the final phase of the investigation, Tyler Pipe and American Cast Iron Pipe responded that ***, Union Pipe did not respond to the questionnaire, and U.S. Pipe responded that it produces ***.

[11] Conference testimony suggests that it would be uneconomical to convert U.S. facilities from the production of ductile cast iron pipe fittings intended for use in waterworks applications to the production of such fittings for use in fire protection/sprinkler systems. Conference transcript, pp. 45-46.

[12] Conference transcript, pp. 8-9.

[13] Conference transcript, pp. 82 and 106; staff telephone conversations with ***, March 29, 2002, and ***, March 29, 2002. One U.S. producer of the grooved fittings, Victaulic, is believed to account for the vast majority of production of these products. Postconference brief of petitioners, p. 11. In the final phase of the investigation, Ward responded that it ***, Anvil provided data on its production of grooved fittings, and Victaulic *** did not respond to the Commission's questionnaire. Central Sprinkler (Tyco Fire Products) responded that it ***.

[14] Postconference brief of petitioners, p. 19 and Anvil's questionnaire response in the final phase of the investigation.

Table III-2
Non-malleable/ductile cast iron pipe fittings: U.S. production capacity, production, and capacity utilization, 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

U.S. PRODUCERS' SHIPMENTS

Data on U.S. producers' shipments of non-malleable/ductile cast iron pipe fittings are shown in table III-3. The data show that the quantity of U.S. producers' total domestic shipments fell by *** short tons, or *** percent, from 1999 to 2001, and declined by *** percent between the interim periods. The value of such shipments also fell from 1999 to 2001 and between the interim periods, while unit values increased by *** percent from 1999 to 2001 and by *** percent between the interim periods. Anvil reported *** during the period.

Table III-3
Non-malleable/ductile cast iron pipe fittings: U.S. producers' shipments, by types, 1999-2001, January-September 2001, and January-September 2001

* * * * * * *

U.S. PRODUCERS' INVENTORIES

U.S. producers' end-of-period inventories of non-malleable/ductile cast iron pipe fittings are shown in table III-4. The volume of such inventories fluctuated upward from 1999 to 2001, increasing by *** percent from yearend 1999 to yearend 2000 and falling by *** percent from yearend 2000 to yearend 2001.[15] End-of-period inventories declined by *** percent between the interim periods. The ratios of inventories to production and shipments continually increased from 1999 to 2001 and between the interim periods.

Table III-4
Non-malleable/ductile cast iron pipe fittings: U.S. producers' end-of-period inventories, 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

[15] At the hearing, Thomas Fish, President, Anvil, testified that the firm built up additional inventories, from December 2000 to April 2001, to prepare for the move from Stateboro, GA; hearing transcript, pp. 83-85. Information supplied by Anvil in its producer questionnaire, shows that beginning inventories increased by *** percent between 1999 and 2001 and then declined by *** percent in interim 2002. Anvil's end-of-period inventories increased by *** percent between 1999 and 2000, declined by *** percent between 2000 and 2001, and declined by *** percent between the interim periods.

U.S. EMPLOYMENT, COMPENSATION, AND PRODUCTIVITY

U.S. producers' employment data are shown in table III-5. The average number of production and related workers (PRWs) declined during 1999-2001. Over the 1999-2001 period, PRWs fell by *** percent, hours worked declined by *** percent, and wages declined by *** percent. During the same period, worker productivity, unit labor costs, and hourly wages increased. Between the interim periods PRWs, hours worked, and wages paid continued to decline while unit labor costs and hourly wages increased and productivity dropped.

Table III-5
Non-malleable/ductile cast iron pipe fittings: U.S. producers' employment-related indicators, 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

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

U.S. IMPORTERS

The Commission sent importers' questionnaires to 54 firms believed to possibly be importers of non-malleable/ductile cast iron pipe fittings, based on information provided in the petition, information received during the preliminary phase of the investigation, and information provided by the U.S. Customs Service. In addition, importer questionnaires were sent to the 18 firms that received producer questionnaires. Eleven firms supplied the Commission with usable information on their operations involving the importation of non-malleable/ductile cast iron pipe fittings from China and other countries;[1] two firms provided unusable questionnaire responses;[2] 31 firms indicated that they did not import the subject non-malleable/ductile cast iron pipe fittings;[3] and 28 firms did not respond to the Commission's request for information.[4] The data presented on U.S. imports are based on questionnaire responses of 11 firms that are estimated to account for greater than 90 percent of the subject imports during 2001.[5]

The identity of the 11 U.S. importers that supplied the Commission with usable questionnaire information, the locations of their importing operations, their shares of total reported subject imports from China during 2001, and the types of subject merchandise imported are presented in table IV-1. As the table shows, Star Pipe (which stated at the Commission's conference that it is, by far, the largest responding importer of the subject merchandise) accounted for *** percent of the imports of subject merchandise from China. Star Pipe reported in its questionnaire that it has ***. Smith-Cooper, ***, accounting for *** percent of subject imports in 2001, reported importing non-malleable pipe fittings, ductile pipe fittings (***), and ***. ***. JDH, an importer of subject pipe fittings from China, representing *** percent of total subject imports in 2001, identified ***. ***. ***, companies that responded in the preliminary phase of the investigation, did not respond to the Commission's questionnaire in the final phase of the investigation.

Table IV-1
Non-malleable/ductile cast iron pipe fittings: U.S. importers, the locations of their importing operations, and their shares of reported subject U.S. imports in 2001

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[1] ***.

[2] One firm mistakenly provided data on its importation of malleable cast iron pipe fittings and *** provided its trade data in pieces and could not convert the number of pieces it imported to short tons. Additionally, ***.

[3] Some of these firms responded by telephone. One firm responded that it only imports fire hydrant fittings over 6 inches, another firm reported that it was out of business, and another reported that it was sold to a firm that also received an importer questionnaire but did not respond.

[4] A few of these firms were the same company with different names located in different areas.

[5] See conference transcript, p. 143. The levels of the quantity of imports of subject product from China reported in the final phase of the investigation are slightly different from those reported in the preliminary phase of the investigation but the trends are the same.

U.S. IMPORTS

U.S. imports of non-malleable/ductile cast iron pipe fittings are primarily from China, which accounted for *** of total imports during the period examined. Most nonsubject imports are from Taiwan[6] and another minor source of the imported merchandise is India.[7] Data submitted in response to the Commission importers' questionnaires on U.S. imports of subject non-malleable/ductile cast iron pipe fittings are shown in table IV-2. The quantity of subject imports increased irregularly by *** percent between 1999 and 2001, and continued to increase, by *** percent, between the interim periods. The value of subject imports decreased irregularly by *** percent between 1999 and 2001, and increased by *** percent between the interim periods. In the Commission's questionnaire, the importers were asked if they had imported or arranged for the importation of non-malleable/ductile cast iron pipe fittings from China for delivery after September 30, 2002. Two importers indicated such import arrangements. *** reported that imports of the subject product from China would total *** tons between November 2002 and February 2003. *** reported a total of *** tons to be imported from China in the "next three months."[8] The responding importers of subject product from China reported that over 95 percent of their shipments of imported product were to distributors.

Table IV-2
Non-malleable/ductile cast iron pipe fittings: U.S. imports, by sources, 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

APPARENT U.S. CONSUMPTION

The United States is the primary market for non-malleable cast iron pipe fittings worldwide, although Canada reportedly utilizes a minor amount of the product.[9] Petitioners testified that, in the United States, the fire protection/sprinkler industry has grown over the past decade as codes have changed to require more sprinkler systems in a wider variety of buildings.[10] Questionnaire data indicate, however, that apparent U.S. consumption (by quantity) of non-malleable/ductile cast iron pipe fittings fell by *** percent from 1999 to 2001, and continued to decline by *** percent in the interim periods

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[6] *** is the largest reporting importer of subject ductile pipe fittings from Taiwan.

[7] India was identified as a source of subject non-malleable pipe fittings, flanged ductile pipe fittings, pipe fittings with I.D. over 6 inches, and grooved pipe fittings by ***.

[8] ***'s questionnaire response was dated December 16, 2002.

[9] It is estimated that the United States accounts for approximately 95 percent of the world market for the subject fittings. Most other countries use malleable cast iron pipe fittings for fire protection/sprinkler and steam heat conveyance systems. Conference transcript, pp. 19 and 90. In response to questions at the hearing, it was explained that wrought iron and then cast iron were two of the first foundry products produced and then threaded. The fire sprinkler industry in the United States has been around for a long time and the only threaded fittings available for some time were cast iron threaded fittings. When other countries developed their fitting industries, malleable iron fittings were available and were used in those countries' fire protection systems; hearing transcript, pp. 70-71.

[10] Conference transcript, p. 16.

(table IV-3).[11] Non-malleable/ductile cast iron pipe fittings are used primarily in fire protection/sprinkler systems, which are typically installed in commercial buildings, and since these fittings are largely sold for new installations,[12] this decline in U.S. consumption is believed to be associated with the U.S. recession and the decline in the domestic non-residential construction industry in 2001.[13]

Table IV-3
Non-malleable/ductile cast iron pipe fittings: U.S. producers' U.S. shipments, U.S. shipments of imports, by sources, apparent U.S. consumption, and market shares, 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

U.S. MARKET SHARES

As shown in the data presented in table IV-3, U.S. producers' market share based on volume fell by *** between 1999 and 2001. U.S. producers' market share continued to decline by *** in the interim periods. The subject imports from China gained *** in market share between 1999 and 2001. China continued to increase market share by *** in the interim periods. The market share held by imports from other sources (mainly Taiwan) decreased by *** between 1999 and 2001 and increased by *** between the interim periods.

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[11] As noted earlier in the report, the measurement of the quantity by the weight of the fittings may overstate the decline in units since ductile fittings weigh less per fitting than non-malleable fittings and although consumption of non-malleable and ductile cast iron pipe fittings each declined between 1999 and 2001, the decrease for non-malleable ***. Between the interim periods, ductile fittings consumption, on the quantity basis of weight, increased by *** percent while consumption of non-malleable fittings decreased by *** percent and non-malleable/ductile fittings, combined, decreased by *** percent.

[12] Mr. Clark, Clark Sprinkler Supply, estimated that 99 percent of shipments of subject fittings for fire protection/sprinkler systems are for new installations. Conference transcript, p. 70.

[13] After a relatively strong 2000 in non-residential construction in the United States, a decline of 4 percent was reported in 2001. Postconference brief of Star Pipe, pp. 9, 12, and 19, and exh. 2. For a more detailed explanation of the decline in demand for non-malleable cast iron pipe fittings in the various markets see the hearing transcript, pp. 73-78.

PART V: PRICING AND RELATED INFORMATION

FACTORS AFFECTING PRICES

Raw Material Costs

Raw materials represent a relatively minor portion of total costs of goods sold for producers. Raw material costs for Anvil averaged *** percent during 1999-2001, while for Ward it was *** percent and for Frazier it was *** percent.

Transportation Costs to the U.S. Market

Transportation costs for subject fittings from China to the United States (excluding U.S. inland costs) are estimated to be approximately 15.0 percent of the total cost of subject fittings in 2001.[1]

U.S. Inland Transportation Costs

*** report serving the national market and arranging U.S. inland transportation to customers' locations. Average transportation costs for producers ranged from *** to *** percent of the delivered total cost of non-malleable cast iron pipe fittings for Ward and Anvil and *** percent for Frazier's ductile fittings. Anvil reports selling *** within 100 miles of its facilities, *** from 101 to 1,000 miles from its facilities, and *** over 1,000 miles from its facility. Ward reports selling *** within 100 miles of its facilities, *** from 101 to 1,000 miles from its facilities, and *** over 1,000 miles from its facility. Frazier sells *** within 100 miles of its facilities, *** between 101 and 1,000 miles from its facilities, and *** over 1,000 miles from its facilities.

Three of the eight responding importers report serving the continental or the whole United States; other importers report serving one or more regions including the Northeast, the Northwest, the Midwest, the New York metropolitan area, and the West Coast. Seven of the eight responding importers arrange transportation to their customers' locations. Importers' transportation costs range from 0 to 16 percent of the total delivered value. Eight importers reported the distances to which they typically ship. Two sold all product within 100 miles of their facilities or ports of entry; four sold the majority of their product between 100 and 1,000 miles from their facilities, one sold the majority of its product over 1,000 miles from its facility, and the remaining firm sold 40 percent within 100 miles of its facility or port of entry, 40 percent 100 to 1,000 miles, and 20 percent beyond 1,000 miles.

Tariff Rates

Imports of non-malleable/ductile cast iron pipe fittings into the United States are provided for in HTS statistical reporting numbers 7307.11.00.30, and 7307.11.00.60. The column-1 general (normal trade relations) rate of duty applicable to imports from China under subheading 7307.11.00 is 4.8 percent ad valorem in 2003.

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[1] This estimate is derived from 2001 import data for HTSUS statistical reporting numbers 7307.11.0030 and 7307.11.0060, and represents the transport and other charges on imports on a c.i.f. basis as compared with customs value.

Exchange Rates

No graph is presented for the nominal exchange rate data for China because the Chinese yuan has been pegged to the U.S. dollar since January 1, 1994, and thus, has remained virtually constant relative to the dollar since that time.[2]

PRICING PRACTICES

Typically the prices for U.S.-produced non-malleable cast iron pipe fittings are set using a price list. Firms typically increase prices by a fixed percent across the board.[3] However, in addition to a list price, the U.S. producers offer volume rebates, cash discounts, and freight terms based on the weight of the loads sold. Discounts may change when prices increase and different firms have different freight terms.[4]

Ward and Anvil report using *** to determine prices for non-malleable cast iron pipe fittings. ***. Frazier reports prices for its ductile fittings are determined by ***. Seven of the ten responding importers reported using price lists; three of these reported price lists with multipliers. The other three importers reported cost plus pricing, transaction by transaction pricing, and pricing according to local competition. Of the nine responding importers, two report quantity discounts, one reported freight allowance based on volume, one reported no set discounts, one reported that the discounts depended on the customer, and four reported no discounts.

*** report that prices are quoted ***. ***, Anvil reports selling on a 2,500-pound freight allowance.[5] Under a full freight allowance, the producer pays the freight if the purchaser purchases the number of pounds specified or more; if the purchaser buys less than this amount, the purchaser pays for the freight. Four of the nine responding importers report quoting prices on a delivered basis, three importers quote on an f.o.b. basis, and two quote on a delivered or customer pick up basis. The most typical sales term for all three U.S. producers and seven of the nine responding importers is net 30 days.[6] *** and seven of the eight responding importers sell all their product on a spot basis.[7]

PRICE DATA

The Commission requested quarterly pricing data from U.S. producers and importers for the period January 1999 through September 2002 for the eight products listed below.

Product 1–Non-malleable, gray, cast iron pipe fittings meeting ASME specification, black, threaded-end, one and 1/4 inch nominal inside diameter, 90 degree elbow.

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[2] Producer price data for China are not available, therefore real exchange rates could not be calculated. International Monetary Fund, *International Financial Statistics*, December 2002.

[3] Mr. Tom Gleason, Vice President, Marketing and Sales, Ward, hearing transcript, p. 98.

[4] Mr. Thomas E. Fish, President, Anvil, hearing transcript, pp. 100-101.

[5] Mr. Fish, President, Anvil, hearing transcript, p. 100.

[6] The other importers reported net 10 days, and net 30 or 60 days.

[7] *** reported selling only a contract basis.

Product 2–Ductile cast iron pipe fittings for the same use as non-malleable cast iron pipe fittings meeting ASME specification, black, threaded-end, one and 1/4 inch nominal inside diameter, 90 degree elbow.

Product 3–Non-malleable cast iron pipe fittings meeting ASTM specification, black, threaded-end, one inch nominal inside diameter, straight tee.

Product 4–Ductile cast iron pipe fittings for the same use as non-malleable cast iron pipe fittings meeting ASTM specification, black, threaded-end, one inch nominal inside diameter, straight tee.

Product 5–Non-malleable, gray, cast iron pipe fittings meeting ASME specification, black, threaded-end, one inch nominal inside diameter, iron elbow.

Product 6–Ductile cast iron pipe fittings for the same use as non-malleable cast iron pipe fittings meeting ASME specification, black, threaded-end, one inch nominal inside diameter, iron elbow.

Product 7–Non-malleable cast iron pipe fittings meeting ASTM specification, black, threaded-end, one inch by one half inch nominal inside diameter, iron reducer.

Product 8–Ductile cast iron pipe fittings for the same use as non-malleable cast iron pipe fittings meeting ASTM specification, black, threaded-end, one inch by one half inch nominal inside diameter, iron reducer.

Eight importers and two U.S. producers provided usable pricing data. Data reported indicate that U.S. producers only sold non-malleable cast iron pipe fittings (*i.e.*, products 1, 3, 5, and 7) while importers sold both non-malleable and ductile cast iron pipe fittings. Petitioners reported that non-malleable and ductile fittings were used in the same ways and competed directly with each other. For this reason, products 1 and 2 are presented in one table and margins of underselling/overselling for product 2 are calculated relative to U.S. product 1. Products 3 and 4 are in one table and margins of underselling/overselling for product 4 are calculated relative to U.S. product 3. Products 5 and 6 are in one table and margins of underselling/overselling for product 6 are calculated relative to U.S. product 5. Products 7 and 8 are in one table and margins of underselling/overselling for product 8 are calculated relative to U.S. product 7. The respondents report that the price of ductile fittings should be lower than the price of non-malleable fittings because the material inputs and transportation costs are lower since ductile fittings have thinner walls and thus weigh less.

The pricing data reported by U.S. producers represent *** percent of the value of U.S. shipments during the time for which data were gathered.[8] Chinese coverage represents *** percent of the value of U.S. shipments of subject Chinese fittings reported by importers.[9] The respondents reported at the conference that non-malleable/ductile cast iron pipe fittings tended to be sold through two distinct

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[8] Price data were gathered by the piece rather than by weight because a fitting made of non-malleable cast iron would weigh a different amount than the same type of fitting made of ductile iron. As a result, the quantity data for the prices are not comparable to the quantity data collected elsewhere in this investigation. For this reason the coverage is based on the share of the value of the sales rather than its quantity.

[9] Pricing data include Chinese product imported by ***. The value of *** imports are included for this ratio; *** data are not included in the overall quantities because they were not available by weight.

channels of distribution: smaller volumes of higher priced sales are sold through affiliated distribution centers and sales resulting from "future orders" of large volumes are sold directly to customers at lower prices.[10] Respondents stated that price data which do not distinguish between these channels would be biased; therefore the data were collected separately for sales to distributors and sales to end users during the final phase of the investigation. However, *** provided U.S. data for end users. Three of the five importers that gave price data gave it for both end users and distributors; the other two gave price data for sales to distributors only.

Price Trends

Weighted-average prices for U.S.-produced and imported non-malleable/ductile cast iron pipe fittings and margins of underselling/overselling on a quarterly basis for January 1999-September 2002 are shown in tables V-1 through V-8 and in figure V-1. In most cases, U.S. product prices rose over the period for which data were collected while Chinese prices for product sold to distributors typically fell. Table V-9 summarizes pricing trends.

Table V-1
Non-malleable/ductile cast iron pipe fittings: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and imported product 2 sold to distributors and margins of underselling compared to domestic product 1, by quarters, January 1999-September 2002

* * * * * * *

Table V-2
Non-malleable/ductile cast iron pipe fittings: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and imported product 2 sold to end users and margins of underselling compared to domestic product 1, by quarters, January 1999-September 2002

* * * * * * *

Table V-3
Non-malleable/ductile cast iron pipe fittings: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and imported product 4 sold to distributors and margins of underselling compared to domestic product 3, by quarters, January 1999-September 2002

* * * * * * *

[10] Mr. Dan McCutcheon, Sales Manager, Star Pipe Products, conference transcript, pp. 115-116, and Mr. Bill Hurley, Marketing Manager, JDH Pacific, p. 124.

Table V-4
Non-malleable/ductile cast iron pipe fittings: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and imported product 4 sold to end users and margins of underselling compared to domestic product 3, by quarters, January 1999-September 2002

* * * * * * *

Table V-5
Non-malleable/ductile cast iron pipe fittings: Weighted-average f.o.b. prices and quantities of domestic and imported product 5 and imported product 6 sold to distributors and margins of underselling compared to domestic product 5, by quarters, January 1999-September 2002

* * * * * * *

Table V-6
Non-malleable/ductile cast iron pipe fittings: Weighted-average f.o.b. prices and quantities of domestic and imported product 5 and imported product 6 sold to end users and margins of underselling compared to domestic product 5, by quarters, January 1999-September 2002

* * * * * * *

Table V-7
Non-malleable/ductile cast iron pipe fittings: Weighted-average f.o.b. prices and quantities of domestic and imported product 7 and imported product 8 sold to distributors and margins of underselling compared to domestic product 7, by quarters, January 1999-September 2002

* * * * * * *

Table V-8
Non-malleable/ductile cast iron pipe fittings: Weighted-average f.o.b. prices and quantities of domestic product 7 and imported product 8 sold to end users and margins of underselling compared to domestic product 7, by quarters, January 1999-September 2002

* * * * * * *

Figure V-1
Weighted-average f.o.b. prices of domestic products 1, 3, 5, and 7 and imported products 1 through 8, by channels of distribution and by quarters, January 1999-September 2002

* * * * * * *

Table V-9
Non-malleable/ductile cast iron pipe fittings: Summary of numbers of quarters of price data, high price, low price and percentage change in prices by country, channel of distribution, and product

* * * * * * *

Price Comparisons

Overall, there were 183 quarterly price comparisons between U.S.-produced products 1, 3, 5, and 7 with Chinese imports of products 1 through 8. Subject Chinese products undersold domestic products in all 183 quarterly comparisons. Table V-10 summarizes underselling.

Table V-10
Non-malleable/ductile cast iron pipe fittings: Summary of numbers of quarters and average margins of Chinese underselling by year, type of product, and channel of distribution

Year	Total		Non-malleable cast iron		Ductile cast iron	
	Number of quarters of underselling	Average margin of underselling	Number of quarters of underselling	Average margin of underselling	Number of quarters of underselling	Average margin of underselling
Sold to distributors						
1999	32	19.1	16	13.2	16	25.1
2000	32	17.7	16	13.8	16	21.6
2001	32	22.8	16	20.8	16	24.8
2002	24	28.1	12	27.7	12	28.4
Total	120	21.5	60	18.3	60	24.8
Sold to end users						
1999	12	5.9	12	5.9	--	--
2000	12	6.2	12	6.2	--	--
2001	25	26.2	11	19.5	14	31.4
2002	14	31.7	2	35.0	12	31.2
Total	63	19.7	37	11.6	26	31.3

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

LOST SALES AND LOST REVENUES

The petitioner's posthearing brief contained usable lost sales allegations.[11] Tables V-11 and V-12 summarize these allegations. The information provided did not allow the Commission to determine the overall value of these lost sales allegations. The allegations were for the pricing products, 1, 3, 5, and 7 and were for the whole period from 1999 through 2002. All firms were contacted.

Table V-11
Lost sales allegations reported by Anvil

* * * * * * *

Table V-12
Lost sales reported by Ward

* * * * * * *

[11] The petition included only overall changes in sales reported as lost sales and volume suffered by domestic producers (petition, exh. 30) but provided no specific products or prices that could be used to verify the allegations. *** questionnaire contained allegations; however, these were incomplete and *** did not return repeated phone calls requesting clarification.

PART VI: FINANCIAL CONDITION OF U.S. PRODUCERS

BACKGROUND

Anvil, Ward, and Frazier provided financial data on their operations for non-malleable/ductile cast iron pipe fittings.[1] These data accounted for nearly all U.S. production of non-malleable/ductile cast iron pipe fittings in 2001.[2] Formerly known as Supply Sales Co., Anvil is a wholly owned subsidiary of the Mueller Group, Inc., based in Decatur, IL. Mueller Group purchased Anvil from Tyco International in August 1999. Anvil produced most of its non-malleable cast iron pipe fittings at a manufacturing facility in Statesboro, GA, until July 2001. At that time, the casting equipment for non-malleable cast iron pipe fittings was moved to Anvil's Columbia, PA, plant and production of subject merchandise ceased at the Statesboro site. Both non-malleable cast iron pipe fittings and nonsubject merchandise (e.g., malleable and grooved ductile pipe fittings) are now produced by Anvil in Columbia, PA.[3] Ward is a wholly owned subsidiary of Hitachi Metals of America and produces non-malleable cast iron pipe fittings in Blossburg, PA. Frazier is a family owned and family job shop foundry in Coolidge, TX, which produces various castings, among them ductile cast iron pipe fittings.

OPERATIONS ON NON-MALLEABLE/DUCTILE CAST IRON PIPE FITTINGS

Combined income-and-loss data for Anvil, Ward, and Frazier on their non-malleable/ductile cast iron pipe fittings operations are presented in table VI-1. Individual income-and-loss data for each of the three U.S. companies are presented in tables VI-2 to VI-4, respectively, and certain individual data are reported on a per-short-ton basis in table VI-5. Table VI-1 shows that the aggregate operating income margin fell from *** percent in 1999 to *** percent in 2001, but rose *** to *** percent during January-September 2002. ***.

Table VI-1
Results of operations of U.S. producers in the production of non-malleable/ductile cast iron pipe fittings, fiscal years 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

Table VI-2
Results of operations of Anvil in the production of non-malleable cast iron pipe fittings, fiscal years 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

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[1] The fiscal year end for reporting U.S. companies is as follows: Anvil, ***; Frazier, ***; and Ward, ***.

[2] Ward and Anvil reported using contract producers ("jobbers") for certain low-volume production runs, including ***. These jobbers manufactured a small quantity of U.S. production in 2001. Sales of non-malleable cast iron pipe fittings produced by jobbers for Anvil and Ward are accounted for in Anvil's and Ward's operations data.

[3] Petitioners' postconference brief, p. 19, and Anvil's producers' questionnaire, p. 11.

Table VI-3
Results of operations of Frazier in the production of ductile cast iron pipe fittings, fiscal years 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

Table VI-4
Results of operations of Ward in the production of non-malleable cast iron pipe fittings, fiscal years 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

Table VI-5
Results of operations (per unit) of U.S. producers in the production of non-malleable/ductile cast iron pipe fittings, by firms, fiscal years 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

The quantity and value of total net sales for non-malleable/ductile cast iron pipe fitting producers decreased by *** and ***percent, respectively, from 1999 to 2000 and by *** and ***percent, respectively, from 2000 to 2001. On a per-short-ton basis, average selling price rose less than the increase in average cost of goods sold and SG&A expenses combined, resulting in a decrease in operating income during 1999-2001. Although this trend reversed for the domestic industry between the interim periods as operating profit rose *** from *** per short ton in January-September 2001 to *** per short ton in January-September 2002, per-short-ton operating margins remained *** below the *** per-short-ton level experienced in 1999-2000. *** reported operating losses for 1999 or 2000; *** reported operating losses for full year 2001 and January-September 2002. ***.

A variance analysis for U.S. producers of non-malleable/ductile cast iron pipe fittings is presented in table VI-6; information for this analysis is derived from table VI-1. The variance analysis provides an assessment of changes in profitability as related to changes in pricing, cost, and volume, and this analysis shows that the decrease in operating income over the period was due primarily to increasing costs/expenses, and to a lesser degree, declining sales volumes. Increasing prices failed to offset unfavorable sales volume and cost/expense variances, particularly between 2000 and 2001, leading to an unfavorable operating income variance during 1999-2001. Operating income variance during the interim period was slightly positive because a favorable net sales price variance (i.e., higher prices) was able to more than offset the unfavorable net cost/expense and net sales volume variances. The results of the variance analysis may be affected by the product mix of various non-malleable/ductile cast iron pipe fittings within a company and between companies.

Table VI-6
Variance analysis for the non-malleable/ductile cast iron pipe fitting operations of U.S. producers, fiscal years 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

INVESTMENT IN PRODUCTIVE FACILITIES, CAPITAL EXPENDITURES, AND RESEARCH AND DEVELOPMENT EXPENSES

The responding firms' data on capital expenditures, research and development (R&D) expenses, and the value of their property, plant, and equipment for their non-malleable/ductile cast iron pipe fitting operations are shown in table VI-7. ***.

Table VI-7
Value of assets, capital expenditures, and research and development expenses of U.S. producers of non-malleable/ductile cast iron pipe fittings, fiscal years 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

CAPITAL AND INVESTMENT

The Commission requested U.S. producers to describe any actual or potential negative effects of imports of non-malleable/ductile cast iron pipe fittings from China on their firms' growth, investment, and ability to raise capital or development and production efforts (including efforts to develop a derivative or more advanced version of the product). *** reported actual and anticipated negative effects due to imports.

* * * * * * *

PART VII: THREAT CONSIDERATIONS

The Commission analyzes a number of factors in making threat determinations (see 19 U.S.C. § 1677(7)(F)(i)). 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.

THE INDUSTRY IN CHINA

The petitioners report that China has up to 12,000 iron foundries, approximately 50 of which they believe may produce the subject merchandise. Respondent SCI reported in the preliminary phase of the investigation, however, that in order to sell a pipe fitting for use in the fire protection/sprinkler systems in the United States, it is necessary that the fitting be UL-certified and there are only *** Chinese foundries that currently have such certifications for the subject merchandise.[1]

Five Chinese producers of the subject merchandise provided responses to the Commission's questionnaire in the preliminary phase of the investigation.[2] These Chinese producers' exports of the subject merchandise to the United States were estimated in the preliminary phase of the investigation to account for greater than 75 percent of the total U.S. imports of the subject merchandise during 2001. *** reported the production of malleable cast iron pipe fittings and *** reported the production of fire hydrant bodies using shared production equipment and employees. Although the Chinese producers

[1] It is reported that the UL certification process can be as short as six months for a Chinese factory that is already ISO-9000 certified and as long as six years for factories that do not already have such a certification. Postconference brief of Smith-Cooper, p. 12 and exh. 3, and conference transcript, p. 157. Petitioners add that no such qualification is apparently necessary to serve the U.S. steam conveyance market. Postconference brief of petitioners, p. 24.

[2] These five firms are: Beijing JDH Metal Products, Ltd.; GMS Pipe Fittings Industries, Inc. (GMS); Jinan Meide Casting Co., Ltd.; Linyi Luozhuang Yongli Casting Steel Foundry; and Shanghai Padong Malleable Iron Plant. One of the five firms, GMS, was identified in the petition as a producer of the subject merchandise. The only other Chinese firms identified in the petition are Eathu Casting & Forging Co., Ltd., which chose not to respond to the questionnaire, and Shen Yang Metalcast Co., Ltd., which reported to the American Embassy in Beijing that the investigation did not apply to it. One foreign producer questionnaire response was received from Beijing JDH Metal Products in the final phase of the investigation but is not included in the data since the only new information is for the interim periods. This firm accounted for *** percent of reported production in 2001 in the preliminary phase of the investigation and produces ***. Although the American Embassy reported that four other Chinese producers were expected to supply responses to the Commission's questionnaire in the final phase of the investigation, none were received; telegram from the American Embassy, January 3, 2003. The American Embassy also reported to the Commission during the preliminary phase of the investigation that the Chinese Metals and Chemical Chamber of Commerce (Chamber) did not provide it with the requested data concerning the subject Chinese industry for the Commission's use in this investigation because the pipe fittings industry in China is no longer fully administered by the government and is no longer obligated to provide the Chamber with data. As such, the Chamber had little information about the subject industry.

Chinese producers make both malleable and non-malleable cast iron pipe fittings in the same production facilities,[3] very few foundries in China are set up to produce both ductile and non-malleable fittings.[4]

The data provided in the Chinese producers' preliminary phase questionnaire responses are presented in the aggregate in table VII-1. These data reveal that Chinese production increased by 9.3 percent from 1999 to 2001. Total reported capacity of the responding Chinese production facilities also increased by 29.8 percent from 1999 to 2001. The Commission asked the foreign producers if they had any plans to add, expand, curtail, or shut down production capacity and/or production of subject cast iron pipe fittings in China. *** Chinese producers responded "no;" however, the aggregate data provided by the reporting producers indicate that an increase of 3.9 percent over the 2001 capacity level was forecasted for 2003 and production was forecasted to increase 25.2 percent in 2003 over the 2001 level.[5] The capacity utilization rates of the Chinese production facilities fell from 1999 to 2001 but were projected to increase in 2002 and 2003 as production was expected to climb at a higher rate than capacity. Inventories as a share of production remained relatively constant from 1999 to 2001, at about *** percent. Minor declines in this ratio were expected for 2002 and 2003.

There was reportedly no market in China for subject cast iron pipe fittings during 1999-2001,[6] but projections indicated that home market sales of these Chinese fittings were expected to begin in 2002 and increase in 2003. Minor amounts of exports to Canada were reported by the Chinese producers, while the bulk of production was exported to the United States. These exports to the United States, which accounted for *** percent of total shipments and increased by 14 percent during 1999-2001, were projected to dip in 2002 and remain below the 2001 level in 2003. All five Chinese producers reported that the subject fittings exported by their firms are not subject to antidumping findings or remedies in any WTO-member countries.

U.S. INVENTORIES OF SUBJECT MERCHANDISE FROM CHINA

Data on U.S. importers' inventories of non-malleable/ductile cast iron pipe fittings and the ratio of such inventories to imports are shown in table VII-2. As shown in the table, the questionnaire responses of U.S. importers of the subject merchandise reflect that inventories of imports from China increased from 1999 to 2000, but fell in 2001 to a level above that reported in 1999. Inventories from China increased by *** percent between the interim periods.

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[3] Conference transcript, p. 112.

[4] Conference transcript, p. 150.

[5] Petitioners' counsel testified at the hearing that China possesses substantial capacity to increase exports of non-malleable cast iron pipe fittings to the United States; prehearing brief, pp. 26-28, hearing transcript, p. 18, and posthearing brief, p. 3 and p. 15.

[6] Conference transcript, p. 16.

Table VII-1
Non-malleable/ductile cast iron pipe fittings: Data for producers in China, 1999-2001 and projected 2002-03

Item	Actual experience			Projections	
	1999	2000	2001	2002	2003
	Quantity (*short tons*)				
Capacity	8,294	9,024	10,767	10,978	11,188
Production	5,442	5,731	5,949	6,482	7,446
End-of-period inventories	***	***	***	***	***
Shipments: Internal consumption/transfers	0	0	0	0	0
Home market	0	0	0	***	***
Exports to-- United States	5,044	5,492	5,749	5,095	5,498
All other markets	***	***	***	***	***
Total exports	***	***	***	***	***
Total shipments	***	***	***	***	***
	Ratios and shares (*percent*)				
Capacity utilization	65.6	63.5	55.3	59.0	66.6
Inventories/production	***	***	***	***	***
Inventories/shipments	***	***	***	***	***
Share of total shipments: Internal consumption/transfers	0.0	0.0	0.0	0.0	0.0
Home market	0.0	0.0	0.0	***	***
Exports to-- United States	***	***	***	***	***
All other markets	***	***	***	***	***
Total exports	***	***	***	***	***

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

Table VII-2
Non-malleable/ductile cast iron pipe fittings: U.S. importers' end-of-period inventories of imports, 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

APPENDIX A

FEDERAL REGISTER NOTICES

INTERNATIONAL TRADE COMMISSION

[Investigation No. 731–TA–990 (Final)]

Non-Malleable Cast Iron Pipe Fittings From China

AGENCY: International Trade Commission.

ACTION: Scheduling of the final phase of an antidumping investigation.

SUMMARY: The Commission hereby gives notice of the scheduling of the final phase of antidumping investigation No. 731–TA–990 (Final) under section 735(b) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)) (the Act) to determine whether an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of less-than-fair-value imports from China of non-malleable cast iron pipe fittings, provided for in subheadings 7307.11.00 and 7307.19.30 of the Harmonized Tariff Schedule of the United States.[1]

For further information concerning the conduct of this phase of the investigation, hearing procedures, and rules of general application, consult the Commission's rules of practice and procedure, part 201, subparts A through E (19 CFR part 201), and part 207, subparts A and C (19 CFR part 207).

EFFECTIVE DATE: September 25, 2002.

FOR FURTHER INFORMATION CONTACT: Valerie Newkirk ((202) 205–3190), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on (202) 205–1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at (202) 205–2000. General information concerning the Commission may also be obtained by accessing its internet server (*http://www.usitc.gov*). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS–ON–LINE) at *http://dockets.usitc.gov/eol/public.*

SUPPLEMENTARY INFORMATION:

Background.—The final phase of this investigation is being scheduled as a result of an affirmative preliminary determination by the Department of Commerce that imports of non-malleable cast iron pipe fittings from China are being sold in the United States at less than fair value within the meaning of section 733 of the Act (19 U.S.C. 1673b). The investigation was requested in a petition filed on February 21, 2002, by Anvil International, Inc., Portsmouth, NH, and Ward Manufacturing, Inc., Blossburg, PA.

Participation in the investigation and public service list.—Persons, including

[1] For purposes of this investigation, the Department of Commerce has defined the subject merchandise as "finished and unfinished non-malleable cast iron pipe fittings with an inside diameter ranging from ¼ inch to 6 inches, whether threaded or un-threaded, regardless of industry or proprietary specifications. The subject fittings include elbows, ells, tees, crosses, and reducers as well as flanged fittings. These pipe fittings are also known as cast iron pipe fittings or gray iron pipe fittings. These cast iron pipe fittings are normally produced to ASTM A–126 and ASME B.16.4 specifications and are threaded to ASME B1.20.1 specifications. Most building codes require that these products are Underwriters Laboratories (UL) certified. The scope does not include cast iron soil pipe fittings or grooved fittings or grooved couplings.

Fittings that are made out of ductile iron that have the same physical characteristics as the gray or cast iron fittings subject to the scope above or which have the same physical characteristics and are produced to ASME B.16.3, ASME B.16.4, or ASTM A–395 specifications, threaded to ASME B1.20.1 specifications and UL certified, regardless of metallurgical differences between gray and ductile iron, are also included in the scope. These ductile fittings do not include grooved fittings or grooved couplings. Ductile cast iron fittings with mechanical joint ends (MJ), or push on ends (PO), or flanged ends and produced to American Water Works Associations (AWWA) specifications AWWA C110 or AWWA C153 are not included."

industrial users of the subject merchandise and, if the merchandise is sold at the retail level, representative consumer organizations, wishing to participate in the final phase of this investigation as parties must file an entry of appearance with the Secretary to the Commission, as provided in section 201.11 of the Commission's rules, no later than 21 days prior to the hearing date specified in this notice. A party that filed a notice of appearance during the preliminary phase of the investigation need not file an additional notice of appearance during this final phase. The Secretary will maintain a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigation.

Limited disclosure of business proprietary information (BPI) under an administrative protective order (APO) and BPI service list.—Pursuant to section 207.7(a) of the Commission's rules, the Secretary will make BPI gathered in the final phase of this investigation available to authorized applicants under the APO issued in the investigation, provided that the application is made no later than 21 days prior to the hearing date specified in this notice. Authorized applicants must represent interested parties, as defined by 19 U.S.C. 1677(9), who are parties to the investigation. A party granted access to BPI in the preliminary phase of the investigation need not reapply for such access. A separate service list will be maintained by the Secretary for those parties authorized to receive BPI under the APO.

Staff report.—The prehearing staff report in the final phase of this investigation will be placed in the nonpublic record on January 29, 2003, and a public version will be issued thereafter, pursuant to section 207.22 of the Commission's rules.

Hearing.—The Commission will hold a hearing in connection with the final phase of this investigation beginning at 9:30 a.m. on February 11, 2003, at the U.S. International Trade Commission Building. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission on or before February 3, 2003. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the hearing. All parties and nonparties desiring to appear at the hearing and make oral presentations should attend a prehearing conference to be held at 9:30 a.m. on February 6, 2003, at the U.S. International Trade Commission Building. Oral testimony and written materials to be submitted at the public hearing are governed by sections 201.6(b)(2), 201.13(f), and 207.24 of the Commission's rules. Parties must submit any request to present a portion of their hearing testimony *in camera* no later than 7 days prior to the date of the hearing.

Written submissions.—Each party who is an interested party shall submit a prehearing brief to the Commission. Prehearing briefs must conform with the provisions of section 207.23 of the Commission's rules; the deadline for filing is February 5, 2003. Parties may also file written testimony in connection with their presentation at the hearing, as provided in section 207.24 of the Commission's rules, and posthearing briefs, which must conform with the provisions of section 207.25 of the Commission's rules. The deadline for filing posthearing briefs is February 19, 2003; witness testimony must be filed no later than three days before the hearing. In addition, any person who has not entered an appearance as a party to the investigation may submit a written statement of information pertinent to the subject of the investigation on or before February 19, 2003. On March 5, 2003, the Commission will make available to parties all information on which they have not had an opportunity to comment. Parties may submit final comments on this information on or before March 7, 2003, but such final comments must not contain new factual information and must otherwise comply with section 207.30 of the Commission's rules. All written submissions must conform with the provisions of section 201.8 of the Commission's rules; any submissions that contain BPI must also conform with the requirements of sections 201.6, 207.3, and 207.7 of the Commission's rules. The Commission's rules do not authorize filing of submissions with the Secretary by facsimile or electronic means.

In accordance with sections 201.16(c) and 207.3 of the Commission's rules, each document filed by a party to the investigation must be served on all other parties to the investigation (as identified by either the public or BPI service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

Authority: This investigation is being conducted under authority of title VII of the Tariff Act of 1930; this notice is published pursuant to section 207.21 of the Commission's rules.

Issued: October 21, 2002.

By order of the Commission.

Marilyn R. Abbott,

Secretary to the Commission.

[FR Doc. 02–27147 Filed 10–23–02; 8:45 am]

BILLING CODE 7020–02–P

DEPARTMENT OF COMMERCE

International Trade Administration

[A-570–875]

Notice of Final Determination of Sales at Less Than Fair Value: Non-Malleable Cast Iron Pipe Fittings from the People's Republic of China

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

ACTION: Notice of Final Determination of Sales at Less Than Fair Value.

EFFECTIVE DATE: February 18, 2003.

FOR FURTHER INFORMATION CONTACT: Ronald Trentham or Sam Zengotitabengoa, AD/CVD Enforcement, Group II, Office 4, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, DC 20230; telephone: (202) 482–6320, and (202) 482–4195, respectively.

SUPPLEMENTARY INFORMATION:

Final Determination

We determine that non-malleable cast iron pipe fittings (pipe fittings) from the People's Republic of China (PRC) are

being sold, or are likely to be sold, in the United States at less than fair value (LTFV), as provided in section 735 of the Tariff Act of 1930, as amended (the Act). The estimated margins of sales at LTFV are shown in the "Final Determination of Investigation" section of this notice.

Case History

On September 25, 2002, the Department of Commerce (the Department) published the preliminary determination of sales at LTFV in the antidumping duty investigation of pipe fittings from the PRC. *See Notice of Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination: Non-Malleable Cast Iron Pipe Fittings from the People's Republic of China*, 67 FR 60,214 (September 25, 2002) (*Preliminary Determination*). Since the preliminary determination, the following events have occurred.

On September 30, 2002, and October 1, 2002, respectively, Jinan Meide Casting Co., Ltd. (JMC) and Shanghai Foreign Trade Enterprises Co., Ltd. (SFTEC) (the respondents) filed preliminary determination clerical error allegations. The Department concluded that certain allegations constituted ministerial errors, to be corrected in the final determination, but that the errors did not amount to significant ministerial errors for purposes of issuing an amended preliminary determination. *See* Ministerial Error Allegations Memorandum, from Holly A. Kuga to Bernard T. Carreau, dated November 4, 2002 (Ministerial Error Allegations Memorandum). From October 25, 2002, through November 5, 2002, the Department conducted a sales and factors of production verification of JMC and SFTEC. *See* Memorandum to the File from the Team, Verification of Sales Information Reported by Jinan Meide Casting Co., Ltd., to the file, dated December 4, 2002; Memorandum to the File from the Team, Verification of Sales Information Reported by Shanghai Foreign Trade Enterprises Co., Ltd., to the file, dated December 4, 2002; Memorandum to Neal M. Halper from the Team, Verification Report on the Factors of Production Data Submitted by Jinan Meide Casting Co., Ltd., dated December 11, 2002 (JMC FOP Verification Report); and Memorandum to Neal M. Halper from the Team, Verification Report on the Factors of Production Data Submitted by Shanghai Foreign Trade Enterprises, Ltd., and its Suppliers, dated December 11, 2002 (SFTEC FOP Verification Report). SFTEC filed surrogate value information and data on September 11, 2002, and November 25, 2002. JMC filed available surrogate value information and data on November 4, 2002, and the petitioners[1] filed surrogate value information and data on November 1, 2002. On October 25, 2002, SFTEC filed a request for a public hearing in this investigation, and JMC and the petitioners filed a request to appear and participate at a hearing if one was requested by another party. SFTEC withdrew its request for a hearing on January 7, 2003. The respondents filed case briefs on December 23, 2002, and the petitioners filed a case brief on December 24, 2002. The respondents and the petitioners filed rebuttal briefs on January 3, 2003. In response to requests, we held meetings with the petitioners, on January 14, 2003, JMC, on February 4, 2003, and SFTEC, on February 5, 2003, during which the party in question highlighted issues raised in its briefs.

Scope of the Investigation

For purposes of this investigation, the products covered are finished and unfinished non-malleable cast iron pipe fittings with an inside diameter ranging from 1/4 inch to 6 inches, whether threaded or un-threaded, regardless of industry or proprietary specifications. The subject fittings include elbows, ells, tees, crosses, and reducers as well as flanged fittings. These pipe fittings are also known as "cast iron pipe fittings" or "gray iron pipe fittings." These cast iron pipe fittings are normally produced to ASTM A-126 and ASME B.l6.4 specifications and are threaded to ASME B1.20.1 specifications. Most building codes require that these products are Underwriters Laboratories (UL) certified. The scope does not include cast iron soil pipe fittings or grooved fittings or grooved couplings.

Fittings that are made out of ductile iron that have the same physical characteristics as the gray or cast iron fittings subject to the scope above or which have the same physical characteristics and are produced to ASME B.16.3, ASME B.16.4, or ASTM A-395 specifications, threaded to ASME B1.20.1 specifications and UL certified, regardless of metallurgical differences between gray and ductile iron, are also included in the scope of this petition. These ductile fittings do not include grooved fittings or grooved couplings. Ductile cast iron fittings with mechanical joint ends (MJ), or push on ends (PO), or flanged ends and produced to the American Water Works Association (AWWA) specifications AWWA C110 or AWWA C153 are not included.

Imports of covered merchandise are classifiable in the Harmonized Tariff Schedule of the United States (HTSUS) under item numbers 7307.11.00.30, 7307.11.00.60, 7307.19.30.60 and 7307.19.30.85. HTSUS subheadings are provided for convenience and Customs purposes. The written description of the scope of this proceeding is dispositive.

Period of Investigation (POI)

The POI is July 1, 2001, through December 31, 2001.

Analysis of Comments Received

All issues raised in the case and rebuttal briefs by parties to this proceeding and to which we have responded are listed in the Appendix to this notice and addressed in the Issues and Decision Memorandum from Bernard T. Carreau, Deputy Assistant Secretary, Import Administration, to Faryar Shirzad, Assistant Secretary for Import Administration (Decision Memorandum) dated February 7, 2003, which is hereby adopted by this notice. Parties can find a complete discussion of the issues raised in this investigation and the corresponding recommendations in this public memorandum which is on file in the Central Records Unit (CRU), room B-099 of the main Department building. In addition, a complete version of the Decision Memorandum can be accessed directly on the internet at *http://ia.ita.doc.gov*. The paper copy and electronic version of the Decision Memorandum are identical in content.

Non-Market Economy

The Department has treated the PRC as a non-market economy (NME) country in all its past antidumping investigations. *See Notice of Final Determination of Sales at Less Than Fair Value: Honey from the People's Republic of China*, 66 FR 50608 (October 4, 2001); *Notice of Final Determination of Sales at Less Than Fair Value: Certain Folding Gift Boxes from the People's Republic of China*, 66 FR 58115 (November 20, 2001). An NME country designation remains in effect until it is revoked by the Department. *See* section 771(18)(C) of the Act. The respondents in this investigation have not requested a revocation of the PRC's NME status. Therefore, we have continued to treat the PRC as a NME country in this investigation. For further details, see the *Preliminary Determination*.

[1] The petitioners in this case are Anvil International, Inc. and Ward Manufacturing, Inc. (collectively referred to as the Petitioners).

Separate Rates

In our *Preliminary Determination*, we found that both responding companies, JMC and SFTEC, met the criteria for the application of separate, company-specific antidumping duty rates. We have not received any other information since the preliminary determination which would warrant reconsideration of our separates rates determination with respect to these companies. For a complete discussion of the Department's determination that the respondents are entitled to a separate rate, see the *Preliminary Determination*.

The PRC-Wide Rate

In the *Preliminary Determination*, we found that the use of adverse facts available (FA) for the PRC-wide rate was appropriate for other exporters in the PRC based on our presumption that those respondents who failed to demonstrate entitlement to a separate rate constitute a single enterprise under common control by the Chinese government. The PRC-wide rate applies to all entries of the merchandise under investigation except for entries from JMC and SFTEC.

Section 776(c) of the Act provides that, when the Department relies on secondary information in using facts otherwise available, it must, to the extent practicable, corroborate that information from independent sources that are reasonably at its disposal. At the preliminary determination, we corroborated the information contained in the petition regarding export price and normal value (NV). See Memorandum to Holly A. Kuga, Corroboration of Secondary Information, dated September 19, 2002 (*Preliminary Corroboration Memorandum*). In order to corroborate the petition information, we recalculated the petition margin to reflect new information placed on the record of the investigation after initiation and prior to the preliminary determination. *Id.*, at page 6. We received no comments regarding our application of total adverse FA to the PRC-wide entity or our corroboration of petition information. As a result, we have continued to apply an adverse FA rate to the PRC-wide entity. For further discussion, see *Preliminary Determination*.

For the *Preliminary Determination*, we derived overhead, selling, general, and administrative (SG&A) expenses, and profit ratios from the 1999–2000 combined income, value of production, expenditure and appropriation account for a sample of 1,914 public companies in India that were reported in the June 2001 *Reserve Bank of India Bulletin*. Both JMC and SFTEC alleged that in the Preliminary Determination, the Department overstated SG&A expenses. After review, we agreed that the calculation of the SG&A ratio was in error. *See* Ministerial Error Allegations Memorandum. For the final determination, we recalculated the petition margin using the corrected SG&A ratio and corrected several other arithmetic errors. We also adjusted the surrogate value for electricity As a result of these recalculations, the PRC-wide rate is, for the final determination, 75.5 percent *ad valorem*. *See* Memorandum to the File from the Team, Corroboration of Secondary Information, dated February 7, 2003.

Surrogate Country

For purposes of the final determination, we continue to find that India remains the appropriate surrogate country for the PRC. For further discussion and analysis regarding the surrogate country selection for the PRC, see the Preliminary Determination.

Verification

As provided in section 782(i) of the Act, we verified the information submitted by the respondents for use in our final determination. We used standard verification procedures including examination of relevant accounting and production records, and original source documents provided by the respondents. For changes from the *Preliminary Determination* as a result of verification, see the "Changes Since the Preliminary Determination" section below.

Changes Since the Preliminary Determination

Based on our findings at verification and on our analysis of the comments received, we have made adjustments to the calculation methodologies used in the preliminary determination. These adjustments are listed below and discussed in detail in the (1) Decision Memorandum, (2) Memorandum to the File, Surrogate Country Values Used for the Final Determination of the Antidumping Duty Investigation of Non-Malleable Cast Iron Pipe Fittings from the People's Republic of China, dated February 7, 2003, (Surrogate Country Values Memorandum) and (3) Memorandum to the File from the Team, Final Calculation of Antidumping Duty Investigation of Non-Malleable Cast Iron Pipe Fittings From the People's Republic of China for Shanghai Foreign Trade Enterprises Co., Ltd., dated February 7, 2003 (SFTEC's Final Calculation Memorandum), and Memorandum to the File from the Team, Final Calculation of Antidumping Duty Investigation of Non-Malleable Cast Iron Pipe Fittings From the People's Republic of China for Jinan Meide Casting Co., Ltd., dated February 7, 2003 (JMC's Final Calculation Memorandum).

1. We corrected the SG&A and the plastic sheet surrogate value for JMC. See Ministerial Error Allegations Memorandum and JMC's Final Calculation Memorandum.
2. We corrected the SG&A and the wooden crates surrogate value for SFTEC. See Ministerial Error Allegations Memorandum and SFTEC's Final Calculation Memorandum.
3. We revised our calculation of freight costs for the factors of production to include the revised distances identified during verification. *See* JMC's Final Calculation Memorandum and SFTEC's Final Calculation Memorandum.
4. We adjusted the surrogate value for pig iron. *See* Decision Memorandum, at Comment 6.
5. We adjusted SFTEC's reported raw material consumption factors to reflect only the sales revenue received from scrap sales based on the surrogate value for cast iron scrap. *See* Decision Memorandum, at Comment 3, and SFTEC's Final Calculation Memorandum.
6. We adjusted the surrogate value for electricity. *See* Surrogate Country Values Memorandum.
7. As partial FA for JMC, we adjusted the conversion costs at the gray iron casting workshop to account for the difference between the highest product-specific yield loss and the average yield loss of all products in the gray iron casting workshop. *See* Decision Memorandum, at Comment 1, and JMC's Final Calculation Memorandum.
8. We have allowed JMC's offset for scrap recovered. *See* Decision Memorandum, at Comment 5, and JMC's Final Calculation Memorandum.

Continuation of Suspension of Liquidation

In accordance with section 735(c)(1)(B)(ii) of the Act, we are directing the Customs Service to continue suspension liquidation of entries of subject merchandise from the PRC that are entered, or withdrawn from warehouse, for consumption on or after September 25, 2002 (the date of publication of the *Preliminary Determination* in the **Federal Register**). We will instruct the Customs Service to require a cash deposit or the posting of a bond equal to the weighted-average amount by which NV exceeds the U.S. price, as indicated in the chart below. These suspension-of-liquidation

instructions will remain in effect until further notice.

Final Determination of Investigation

We determine that the following weighted-average percentage margins exist for the period July 1, 2001, through December 31, 2001:

Manufacturer/exporter	Weighted-Average Margin (percent)
Jinan Meide Casting Co., Ltd.	7.08
Shanghai Foreign Trade Enterprises Co., Ltd.	6.34
PRC-Wide Rate	75.50

The PRC-wide rate applies to all entries of the subject merchandise except for entries from JMC and SFTEC.

International Trade Commission Notification

In accordance with section 735(d) of the Act, we have notified the International Trade Commission (ITC) of our determination. As our final determination is affirmative, the ITC will determine, within 45 days, whether these imports are materially injuring, or threaten material injury to, the U.S. industry. If the ITC determines that material injury, or threat of material injury does not exist, the proceeding will be terminated and all securities posted will be refunded or cancelled. If the ITC determines that such injury does exist, the Department will issue an antidumping duty order directing Customs officials to assess antidumping duties on all imports of subject merchandise entered for consumption on or after the effective date of the suspension of liquidation.

Notification Regarding Administrative Protective Order (APO)

This notice also serves as a reminder to parties subject to APO of their responsibility concerning the disposition of proprietary information disclosed under APO in accordance with 19 CFR 351.305. Timely notification of return/destruction of APO materials or conversion to judicial protective order is hereby requested. Failure to comply with the regulations and the terms of an APO is a sanctionable violation.

This determination is issued and published in accordance with sections 735(d) and 777(i)(1) of the Act.

Dated: February 7, 2003.

Faryar Shirzad,

Assistant Secretaryfor Import Administration.

Appendix Issues in Decision Memorandum

Comment 1: Whether Respondents Properly Reported the Necessary Information to the Department

Comment 2: Whether the Department Correctly Calculated the Distance for the NME Inland Freight Charge

Comment 3: Whether the Department Should Correct the Treatment of Scrap and Coke Offset Reported by SFTEC

Comment 4: Whether the Department Correctly Derived Surrogate Financial Ratios

Comment 5: Whether the Department Should Credit JMC with the Recovery of Scrap from the Smoothing and Threading Workshops

Comment 6: Whether the Department Erred in Valuing the Surrogate Value for Pig Iron

Comment 7: Whether the Department Should Adjust SFTEC's Coke Usage

Comment 8: Whether the Department Properly Calculated the Surrogate Brokerage and Handling Value

Comment 9: Whether the Department will Correct the Ministerial Errors from the Preliminary Determination

[FR Doc. 03–3852 Filed 2–14–03; 8:45 am]

BILLING CODE 3510–DS–S

APPENDIX B

CALENDAR OF THE PUBLIC HEARING

CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject: Non-Malleable Cast Iron Pipe Fittings from China

Inv. No.: 731-TA-990 (Final)

Date and Time: February 11, 2003 - 9:30 a.m.

Sessions were held in connection with this investigation in the Main Hearing Room (room 101), 500 E Street, SW, Washington, D.C.

CONGRESSIONAL APPEARANCES:

The Honorable Joseph R. Pitts, U.S. Congressman, 16th District, State of Pennsylvania

The Honorable John E. Peterson, U.S. Congressman, 5th District, State of Pennsylvania

OPENING REMARKS

Petitioners (**Roger B. Schagrin**, Schagrin Associates)

In Support of the Imposition of Antidumping Duties:

Schagrin Associates
Washington, D.C.
on behalf of

Anvil International, Inc.
Ward Manufacturing, Inc.

Thomas E. Fish, President, Anvil International, Inc.

Bob Kim, Vice President, Manufacturing, Anvil International, Inc.

In Support of the Imposition
of Antidumping Duties (continued):

John E. Martin, Vice President, National Accounts, Anvil International, Inc.

William E. Strouss, Vice President, Finance, Anvil International, Inc.

Tom Gleason, Vice President, Marketing and Sales, Ward Manufacturing, Inc.

Kevin Barron, Operations Manager, Ward Manufacturing, Inc.

Robert J. Blair, President & CEO, Tioga County Development Corporation

Robert Clark, President, Clark Sprinkler Supply

Frank Finkel, President, Davis & Warshow

Roger B. Schagrin) – OF COUNSEL

CLOSING REMARKS

Petitioners (**Roger B. Schagrin**, Schagrin Associates)

APPENDIX C

SUMMARY DATA

Table C-1
Subject non-malleable/ductile cast iron pipe fittings: Summary data concerning the U.S. market, 1999-2001, January-September 2001, and January-September 2002

* * * * * * *

Table C-2
Subject non-malleable cast iron pipe fittings: Summary data concerning the U.S. market, 1999-2001, January-September 2001, and January-September 2002

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Table C-3
Subject ductile cast iron pipe fittings: Summary data concerning the U.S. market, 1991-2001, January-September 2001, and January-September 2002

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Table C-4
Non-malleable cast iron pipe fittings (with inside diameter > 6 inches): Summary data concerning the U.S. market, 1999-2001, January-September 2001, and January-September 2002

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Table C-5
Non-malleable/ductile grooved cast iron pipe fittings: Summary data concerning the U.S. market, 1999-2001, January-September 2001, and January-September 2002

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Table C-6
Flanged ductile pipe fittings: Summary data concerning the U.S. market, 1999-2001, January-September 2001, and January-September 2002

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APPENDIX D

SUMMARY OF RESPONSES TO LIKE PRODUCT QUESTIONS

Comparisons Between (3) Flanged Ductile Fittings and (4) Flanged Non-Malleable Fittings

Firms were asked to describe any similarities and/or differences in the physical characteristics of the products. Their responses are as follows:

***: "(3) and (4) are the same {for} 12 inches and smaller."

***: "Have similar shapes, dimensions and openings; they are coated differently for applications. Product made to (3) normally have cement-linings inside which is normally unsuitable for applications of (4)."

***: "Products are similar, readily substitutable. Ductile fittings have thinner wall thickness and less weight."

***: "Flanged ductile iron and flanged non-malleable cast iron fittings weight equal. The physical mechanical properties of ductile iron flanged fittings are superior to similar properties of non-malleable cast iron flanged fittings."

: "."

Firms were asked to describe any similarities and/or differences in the uses of the products. Their responses are as follows:

***: "Both fittings are used in water distribution system, potable sewer. These fittings are also used in some applications in fire protection systems."

***: "Uses are underground for (3), and above ground for (4), water service."

***: "None."

***: "(3) is used in water and wastewater applications and carry liquids (often water). (4) normally is used for air/steam and rarely (sprinkler applications) for water."

Firms were asked to describe the degree of interchangeability, if any, between the products (i.e., are they used in the same or similar applications). Their responses are as follows:

***: "On a scale of 1-10 about 3-4."

***: "100% interchangeable."

***: "Both fittings can be used interchangeably though due to superior physical properties, especially in breakage due to impact, ductile iron fittings are usually preferred."

***: "(3) can be used anywhere (4) can be, (4) limited to above ground applications."

Firms were asked to describe any similarities and/or differences in the channels of distribution for the products. Their answers are as follows:

***: "Can be the same distributor, (3) normally through underground specialists, (4) through general piping distributors."

***: "Same channels."

***: "Waterworks supply houses exclusively supply (3) to treatment plants and contractors. Domestic (North American) ductile fitting manufactures sometimes supply directly to contractors. (4) is stocked by plumbing and industrial distributors and sold to industrial contractors or end users."

***: "Both fittings are distributed either from manufacturer to distributor to end user or directly to end user."

Firms were asked to describe, to the best of their knowledge, any similarities and/or differences in customer and producer perceptions of the products. Their responses are as follows:

***: "(3) is normally referred to as AWWA C-110 fittings, (4) normally called a ANSI B16.1 or B16.4 fittings. Industrial users are normally ignorant of waterworks standards; vice versa does not hold true."

***: "Ductile fittings are 100% imported. Other non-malleable can be imported or manufactured domestically. There are no discernable differences."

***: "Unknown."

***: "Ductile iron fittings are perceived as superior fittings as compared to non-malleable cast iron fittings."

Firms were asked to explain whether the products are made in common (i.e., the same or shared) manufacturing facilities, using common production processes, and production employees. Their responses are as follows:

***: "Imported ductile and subject non-malleable can be made in same or shared facility with common process and employees."

***: "Both fittings can be manufactured in the same foundry. However ductile iron fittings require higher skill people and special manufacturing/ inspection equipment."

***: "Foundries that have casing ability for gray cast iron and ductile iron can make both (3) and (4). But (3) may need cement lining which is a process absent in (4). Protection of such linings changes handling of products that point forward."

***: "(3) and (4) made in common facilities."

Firms were asked to describe any similarities and/or differences in the prices of the products. Their responses are as follows:

***: "(3) is higher price than (4)."

***: "Since distribution practices differ prices is different in different markets. All include costs of handling in the distribution chain. (3) could command a 10 to 15% premium if sales practices and volume per sale is same."

***: "Ductile iron flanged fittings are sold at a higher price as compared to non-malleable cast iron fittings."

***: "Imported ductile and imported non-malleable sell for approximately the same price. Imported ductile and non-malleable sell at substantial discount to domestic subject fittings."

Comparisons Between (5) Fittings 6 Inches and Under in Inside Diameter and (6) Fittings Over 6 Inches in Inside Diameter

Firms were asked to describe any similarities and/or differences in the physical characteristics of the products. Their responses are as follows:

***: "Same items except they are scaled for size. Standard product is rated for lower operating water pressure in sizes greater than 12 inches. So in waterworks the cut off is 12 inches not 6 inches."

***: "(5) threaded not made larger than 6 inches flanged and grooved made smaller and larger than 6 inches."

***: "Physical properties of non-malleable/ductile cast iron pipe fittings are similar for fittings below 6 inches versus fittings over 6 inches inside diameter size."

***: "(5) is dimensionally different than (6)."

: "."

Firms were asked to describe any similarities and/or differences in the uses of the products. Their responses are as follows:

***: "(5) is used primarily in fire protection which seldom uses pipes sizes over 6 inches. (6) is used in AWWA applications."

***: "Both are used in water distribution systems, fire protection systems and special uses. The smaller sizes are used to distribute water near users location while higher sizes are used to distribute water near user local while higher sizes are used for bringing water over long distances."

***: "(5) used inside buildings, (6) typically used outside, can be used inside."

***: "Size dependent application."

***: "(5) is used primarily in the fire protection market. (6) is used in AWWA applications."

Firms were asked to describe the degree of interchangeability, if any, between the products (i.e., are they used in the same or similar applications). Their responses are as follows:

***: "Can be interchanged, 2-6 inch fittings instead of 1-10 inch."

***: "Not interchangeable."

***: "They are not interchangeable due to the dimensional requirements of the applications."

***: N/A.

Firms were asked to describe any similarities and/or differences in the channels of distribution for the products. Their responses are as follows:

***: "Same."

***: "None in the waterworks industry."

***: "Both sizes are sold and distributed through similar channels of distribution."

***: "(5) is used primarily in fire protection market. (6) is used in AWWA applications."

Firms were asked to describe, to the best of their knowledge, any similarities and/or differences in customer and producer perceptions of the products. Their responses are as follows:

***: "Unknown."

***: "None in the waterworks industry."

***: "(5) is used in the fire protection market. (6) is used in AWWA applications."

***: N/A

Firms were asked to explain whether the products are made in common (i.e., the same or shared) manufacturing facilities, using common production processes, and production employees. Their responses are as follows:

***: "They could be made in common facilities shared processes and employees."

***: "Common, sometimes separate."

***: "Generally the size 6 inch and below and sizes higher specially over 12 inches are made using different manufacturing facilities, large sizes usually require higher skills."

***: "Same facility for casting process...machining and drilling for large sizes 24 inches and up may be outsourced to specialty shops."

Firms were asked to describe any similarities and/or differences in the prices of the products. Their responses are as follows:

***: "Price per pound similar."

***: "They are different dimensionally and, therefore, (6) sells at higher prices than (5). In addition, the AWWA market allows (6) to carry higher margins than the fire protection product (5)."

***: "In waterworks the price per pound of product increases over 12 inches due to reduced volume. Very little (if any) differentiation at the 6 inch line."

***: "Larger sizes cost more than smaller sizes."

Comparisons Between (7) Non-Malleable/Ductile Grooved Fittings and (8) Subject Ductile/Non-Malleable Fittings

Firms were asked to describe any similarities and/or differences in the physical characteristics of the products. Their responses are as follows:

***: "Grooved fittings are generally made only in ductile iron where as subject fittings can be made both in ductile iron and cast iron. Grooved fittings generally require higher physical properties as compared to non malleable cast iron fittings.

***: "There are substantial differences in physical characteristics. Grooved fittings require a gasketed coupling. Threaded fittings require only a male thread on the pipe. Grooved fittings are dimensionally larger due to flow characteristics as well. Grooved fittings require non-typical tools."

***: "Ductile iron grooved fittings have same physical characteristics as ductile threaded fittings."

***: "(7) requires grooved couplings to connect to pipe, (8) connects directly to pipe."

***: "Ductile grooved fittings and ductile threaded fittings are completely different. No similarity other than iron type."

Firms were asked to describe any similarities and/or differences in the uses of the products. Their responses are as follows:

***: "Both are used in fire protection systems but not for the same application."

***: "(7) and (8) can be used on water service, (8) can be used for steam, (7) can not."

***: "Grooved fittings are used in both fire protection system water distribution systems--potable water systems, air conditioning, mining, elevator service system. Subject fittings are primarily used in fire protection systems."

***: "In a fire sprinkler system you, can always find both grooved fittings and ductile/cast iron fittings (threaded)."

***: "Because grooved systems contain an elastomer, they cannot be used in steam, high heat, or certain chemical applications. Grooved fittings/couplings cannot be used with threaded pipe, and subject fittings can not be used with grooved pipe."

Firms were asked to describe the degree of interchangeability, if any, between the products (i.e., are they used in the same or similar applications). Their responses are as follows:

***: "(7) has replaced (8) on many applications due to ease of installation."

***: "Not interchangeable. Threaded fitting can only be used with "threaded" pipe, grooved fittings can only be used with "grooved" pipe."

***: "Generally the two fittings are not interchangeable. Systems are either designed for grooved fittings specifically or subject fittings specifically. But both systems can be used in similar applications."

***: "Cannot be interchanged."

***: "In a fire sprinkler systems, they are used in the same applications."

Firms were asked to describe any similarities and/or differences in the channels of distribution for the products. Their responses are as follows:

***: "Same distribution."

***: "Grooved products are not sold through manufacturers representatives."

***: "No difference."

***: "Both are sold in the same channel of distribution."

***: "Both products are through similar channels of distribution."

Firms were asked to describe, to the best of their knowledge, any similarities and/or differences in customer and producer perceptions of the products. Their responses are as follows:

***: "Unknown."

***: "Generally the subject fittings are used in 2 inch and below sizes, where as grooved fittings are generally used in 2 inch and higher sizes."

***: "N/A. Completely different products."

***: No response.

***: "Grooved fittings are perceived to be a more "engineered" product. Grooved fittings are perceived to be a labor saving product over threaded fittings. Subject fittings are limited to iron and steel pipe applications while grooved fittings can be used on a broad range of materials."

Firms were asked to explain whether the products are made in common (i.e., the same or shared) manufacturing facilities, using common production processes, and production employees. Their responses are as follows:

***: "Not normally, but possible."

***: "They can be made in common facilities using common process and employees."

***: "Usually these two types of fittings are made in different foundry."

***: "N/A."

***: "Generally the production for grooved products are different than subject fittings."

Firms were asked to describe any similarities and/or differences in the prices of the products. Their responses are as follows:

***: "(7) is price higher than (8), ease of installation outweighs price differences."

***: "Grooved fitting's price are higher than threaded fittings, but the installation cost of grooved is lower than that of threaded fittings."

***: No response.

***: "Generally the grooved systems are sold at a higher price than subject fittings."

***: "N/A."