

What Every Member of the Trade Community Should Know About:

CLASSIFICATION AND MARKING OF PIPE FITTINGS UNDER HEADING 7307

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NOTICE:

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INTRODUCTION

This Informed Compliance Publication (ICP) proposes to explore both the complexities of the tariff nomenclature regarding iron and steel pipe fittings and the corresponding special country of origin marking requirements. Iron and steel pipe fittings are classified in Section XV, Chapter 73, Heading 7307, Harmonized Tariff Schedule of the United States (HTSUS), which reads: "Tube or pipe fittings (for example, couplings, elbows, sleeves) of iron or steel."

QUESTIONS TO ASK WHEN CLASSIFYING PIPE AND TUBE FITTINGS:

Are the fittings made of iron or steel?

If yes, continue with questions.

If not, classify elsewhere in the HTS!

Are they used to connect two pieces of pipe (not hose), or to connect a pipe to another apparatus or to close off the end of a pipe?

If yes, continue with questions.

If not, classify elsewhere in the HTS

Are the fittings cast?

If yes, continue with questions of Section A

If not, continue with questions of Section B

Section A

Are they nonmalleable cast iron?

If yes, classify in subheading 7307.11.00.

If not, are they of ductile iron?

If yes, classify in subheading 7307.19.30.

If not, classify all other cast fittings in subheading 7307.19.90.

Section B

Are they made of stainless steel?

If yes, continue with questions in Section B.

If not, continue with questions in Section C.

Are they stainless steel flanges?

If yes, classify in subheading 7307.21.10 or 7307.21.50 depending on whether or not the flange is machined, tooled or otherwise processed after forging.

If not, are they stainless steel threaded elbows, bends or sleeves?

If yes, classify in subheading 7307.22.10 if the fitting is a sleeve and in subheading 7307.22.50 if a bend or elbow.

If not, are they stainless steel butt welding fittings? If

yes, classify in subheading 7307.23.00.

If not, classify in subheading 7307.29.00.

Section C

Are they flanges?

If yes, classify in subheadings 7307.91.1000 and 7307.91.3000 if they are not machined, not tooled or not otherwise advanced after forging depending on whether they are iron or nonalloy steel or alloy steel. Classify in subheading 7307.91.50 if they are machined, tooled or otherwise processed.

Classification at the ten digit level is dependent upon the inside diameter and whether or not they are iron or nonalloy steel or of alloy steel.

If not, are they threaded elbows, bends or sleeves?

If yes, classify in subheading 7307.92.30 if a sleeve or coupling and in subheading 7307.92.90 if a bend or an elbow.

If not, are they butt welding fittings?

If yes, classify in subheadings 7307.93.30 through 7307.93.90 depending on the measurement of the inside diameter, the chemistry of the fitting and whether the fitting is machined, tooled or otherwise processed after forging.

If not, (butt welding) classify all fittings that are not machined, not tooled or not otherwise processed after forging in subheadings 7307.99.10 and 7307.99.30 dependant on the chemistry. If processed after forging, classify all other fittings in subheading 7307.99.50.

TUBE OR PIPE FITTINGS OF IRON OR STEEL

What is a pipe fitting? Merriam-Webster's Online dictionary defines a pipe fitting as, "a piece (as a coupling or elbow) used to connect pipes or as an accessory to a pipe." In addition to connecting pieces of pipe, pipe fittings are also commonly used to change the direction of pipe or to close off the end of a pipe.

The Explanatory Notes (ENs) to Heading 7307 further describe a pipe fitting for the purpose of classification within this heading. They state, "This heading covers fittings of iron or steel, mainly used for connecting the bores of two tubes together, or for connecting a tube to some other apparatus, or for closing the tube aperture.

How do pipe fittings connect pipes or tubes? Pipe fittings that connect the bores of two tubes, etc. do so by: screwing, when using cast iron or steel threaded fittings; by welding, with butt-welding or socket welding steel fittings; or by contact when using removable steel fittings.

Therefore, this heading includes, among other things: **flanges, elbows, bends, reducers, tees, crosses, caps and plugs, stub-ends, fittings for tubular railings and structural elements, multi-branch pieces, nipples, unions, clamps and collars.**

This heading does not however cover articles used for installing pipes and tubes but which do not form an integral part of the bore (e.g. hangers, stays and similar supports which merely fix or support the tubes and pipes on walls, clamping or tightening bands or collars (hose clips) used for clamping flexible tubing or hose to rigid piping taps, connecting pieces, etc.)."



Also excluded from classification in this heading are articles used for installing pipe and tube that do not form an integral part of the bore. The bore of a tube is illustrated above:

Further, a list of items excluded from classification in this heading is found in the Explanatory Notes (ENs) to Heading 7307. They include:

- (a) **Clamps** and other devices specially designed for assembling parts of structures.
- (b) **Bolts, nuts, screws, etc.**, suitable for use in the assembly of tube or pipe fittings.
- (c) **Thermostatic bellows and expansion joints.**
- (d) **Hangers, stays and similar** supports used for installing pipe and tube as mentioned above; and **tube plugs, threaded or not, fitted with a ring, hook**, etc. (e.g. those used for fixing washing lines).
- (e) **Fittings equipped with taps, cocks, valves, etc.**
- (f) **Insulated joints for electrical conduit tubing.**
- (g) **Connections for assembling bicycle or motorcycle** frames.

PARTS OF GENERAL USE

Section XV, Note 2, HTSUS, states that “Throughout the tariff schedule, the expression ‘parts of general use’ means: (a) articles of heading [7307](#), 7312, 7315, 7317 or 7318 and similar articles of base metal.” **Therefore, the pipe fittings of iron or steel of Heading 7307 are considered parts of general use.** Pipe fittings would not be classified as part of another item anywhere throughout the HTSUS where parts of general use are excluded but would remain classified as pipe fittings. For example, NY Ruling K87017 (dated, July 9, 2004), classified auto-weld fittings for bioprocessing equipment in Heading 7307 because Note 1 to Section XVI (the section where this equipment is classified) excludes parts of general use.

WHAT IS A PIPE OR TUBE?

It should be noted that only iron and steel fittings for **pipes and tubes** are classified within Heading 7307. **PIPE, TUBE** The courts determined in John V. Carr & Son, Inc. v. United States, 76 Cust. Ct. 162, C.D. 4652, (1976), that “a pipe or tube as it is known within the industry is made of a single extruded compound rather than many materials.” In addition to metal pipe, polyvinylchloride (PVC) pipe is also made of a single extruded material. Therefore, HQ Ruling 088393 (dated March, 26, 1991) held that iron or steel fittings that connect PVC pipe were classified in Heading 7307. **HOSE**, is commonly made up of many materials. Fittings that connect hose would not be classified in 7307. However, fittings that are suitable for connecting both hose and pipe or tube of a single extruded material are classified in 7307.

IRON AND STEEL DEFINED

Heading 7307 provides for pipe and tube fittings **of iron or steel**. The pipe fittings of this heading can be divided into three major groupings: cast iron or cast steel fittings, stainless steel fittings and all other iron or steel fittings.

Iron (Fe) is a silver-gray, hard, brittle element. Although malleable and capable of being hammered, pure iron is rarely used w/o adding other elements. Iron carbon alloys are commonly used in the production of fittings.

Steel is defined in Chapter 72 Note 1(d) of the HTSUS as ferrous materials other than those of Heading 7203 **which are usefully malleable and which contain by weight 2 percent or less of carbon**. However, chromium steels may contain higher proportions of carbon.

Stainless steel is defined in Chapter 72 Note 1(e) of the HTSUS as alloy steels containing, **by weight 1.2 percent or less of carbon and 10.5 percent or more of chromium**, with or without other elements.

Other alloy steel is defined in Chapter 72 Note 1(f) of the HTSUS as steels **not complying with the definition of stainless steel and containing one or more of the following elements** by weight in the proportion shown:

- 0.3% or more of aluminum
- 0.0008% or more of boron
- 0.3% or more of chromium, NICKEL, or TUNGSTEN (WOLFRAM)
- 0.3% or more of cobalt
- 0.4% or more of copper
- 0.4% or more of lead
- 1.65% or more of manganese
- 0.08% or more of molybdenum
- 0.06% or more of niobium
- 0.6% or more of silicon
- 0.05% or more of titanium OR ZIRCONIUM
- 0.1% or more of vanadium OR more of other elements (except sulphur, phosphorous, carbon and nitrogen), taken separately.

SUBHEADING 7307.11.00 THROUGH 7307.19.90

Cast fittings

The first major grouping of iron and steel pipe fittings are manufactured by a casting process. They are provided for in subheadings 7307.11.00 through 7307.19.90. A cast fitting is made by pouring molten metal into a mold of the desired shape.

Subheading 7307.11.00 provides for cast fittings of **nonmalleable cast iron**. The expression, “cast iron” is defined in Chapter 73 Note 1 of the HTSUS. This term applies to products obtained by casting in which iron predominates by weight over each of the other elements and which do not comply with the chemical composition of steel as defined in Note 1(d) to Chapter 72, *supra*. Nonmalleable cast iron is brittle and will break if hammered or otherwise subjected to pressure. **Nonmalleable cast iron is also known as gray iron.** Fittings made of nonmalleable gray iron are commonly known as “cast iron fittings.”

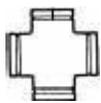
Subheading 7307.11.0030 provides for **nonmalleable cast** iron fittings for threaded pipe. To connect threaded pipes a fitting must also be threaded. A thread is a spiral ridge on the end of the fitting or pipe. Male threads appear on the outside diameter of the pipe or fitting and female threads appear on the inner diameter. In order to make a successful connection the threads of the fitting and pipe must be aligned correctly. To this end, threads are made to industry standards. There are two main industry standards, the National Pipe Thread (NPT) and the National Standard Free Fitting Straight Mechanical Pipe Thread (NPSM).

Subheading 7307.11.0045 is for nonmalleable cast iron fittings that are not threaded and are used for cast iron soil pipe. These fittings are used primarily in building construction applications including sanitary and waste drains. Subheading 7307.11.0060 provides for all other nonmalleable cast iron fittings.

Subheadings 7307.19.30 and 7307.19.90 provide for cast fittings of iron or steel that are **malleable**. Unlike nonmalleable cast iron, malleable iron is workable or formable as cast.

Subheading 7307.19.30 provides for cast ductile iron fittings. Ductile cast iron, also known as nodular cast iron, is characterized by the presence of graphite in tiny spheres. This cast iron is produced by the introduction of elements such as magnesium during the molten state. Chapter 73, Additional U.S. Note 2 to the HTSUS defines ductile fittings for the purposes of this subheading as “fittings which contain over 2.5 percent carbon and over 0.02 percent of magnesium or of magnesium and cerium, by weight.”

Subheading 7307.19.3040 provides for ductile iron grooved-end fittings including grooved couplings. These fittings are designed to be used in grooved piping systems. They have grooves or shoulders that permit fast installation in field applications. Three types of grooved end fittings are illustrated here.



cross

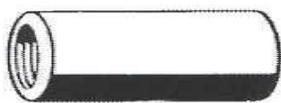


elbow

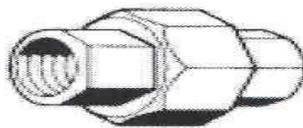


tee

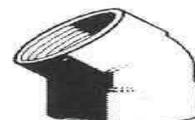
Subheading 7307.19.3060 covers threaded ductile iron fittings as illustrated by these examples.



coupling



union



elbow

Subheading 7307.19.3070 includes ductile iron fittings with mechanical, push-on (rubber compression), or flanged joints attached. Mechanical joint fittings commonly consist of four parts: a fitting body that is bell shaped on one end, a rubber gasket that fits into the bell socket, a gland or follower ring which compresses the gasket and head bolts with nuts. A push on joint consists of a fitting body and a gasket. The fitting body is often bell shaped and incorporates a recess for the gasket. After inserting the gasket into this recess the fitting can be “pushed on” to the pipe. Flanged joints are designed with a flange on the end of the fitting that has been drilled with holes. The flange on the fitting body is connected to the flange of a pipe through the use of bolts and nuts.

Subheading 7307.19.3085 includes all other cast, ductile fittings other than grooved end, threaded or those with mechanical, push-on or flanged joints attached.

Subheading 7307.19.90 includes all other cast fittings other than nonmalleable cast iron and ductile fittings. These include other malleable iron fittings (other than ductile iron) and other cast fittings of steel. These malleable iron fittings have been rendered malleable by heat treating after casting.

Subheading 7307.19.9030 provides for other cast unions. These are other than cast nonmalleable unions and other than cast ductile unions.

Subheading 7307.19.9040 provides for cast grooved-end fittings including grooved couplings that are not nonmalleable and not ductile.



grooved end

Subheading 7307.19.9060 provides for all other malleable cast fittings of iron or steel that are threaded and are not ductile, not a union and not grooved end.

All other malleable cast iron or steel fittings other than ductile, union, grooved end or threaded fittings are classified in subheading 7307.19.9080.

SUBHEADINGS 7307.21 THROUGH 7307.29

Stainless Steel fittings

The second major grouping of pipe and tube fittings consists of stainless steel fittings that are not manufactured by casting. They are provided for in subheadings 7307.21 through 7307.29.

Subheadings 7307.21.10 and 7307.21.50 provide for flanges. Flanges are used to connect two pipes together. This can be accomplished by welding or by the use of threads or by fastening with bolts and nuts.

Types of flanges include weldneck, blind, slip-on, socket weld, lap-joint, threaded and swivel flanges. Weld neck, blind and threaded flanges are illustrated below:



Subheading 7307.21.1000 provides for stainless steel flanges that are not machined, not tooled and not otherwise processed after forging. If the flange undergoes a surface cleaning process, it cannot be classified within this subheading. This subheading covers flanges that are imported in a rough condition and that have not been processed in any way after being forged.

Descaling and shot blasting are processes that remove surface scale from the metal. These operations are not considered incidental to the creation of a forging. Instead they are processes that occur after the forging of the initial product. HQ 087910 (dated December 4, 1990), decided under the predecessor tariff, found that descaling was determined to be a further working process which not only improved the appearance of the forging but which also worked the metal. As such, the automobile forging that was the subject of this ruling was considered otherwise processed after forging. Similarly, forged pipe fittings which have been descaled are considered to have been processed after forging.

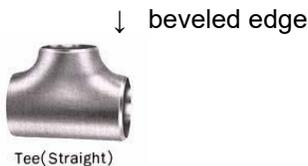
Subheading 7307.21.5000 includes all other stainless steel flanges.

Subheadings 7307.22.10 and 7307.22.50 provide for specific threaded stainless steel fittings. They are elbows, bends and sleeves.

Stainless steel threaded sleeves, also known as couplings, are provided for in subheading 7307.22.1000. (See illustration for threaded coupling on page 10.)

Threaded stainless steel elbows and bends are classified in subheading 7307.22.5000.

Stainless steel butt welding fittings are provided for in subheading 7307.23.0000. The ENs to Heading 7307 tell us that in the case of butt welding fittings the ends can either be square cut or chamfered. Butt welding fittings that are chamfered have ends that have been ground to create a secondary flat surface on the corner that produces a beveled edge.



All other stainless steel fittings that are not flanges, or threaded elbows, bends and sleeves or butt welding fittings are classified in subheading 7307.29.

Subheading 7307.29.0030 provides for stainless steel nipples. A pipe nipple is a short length of either seamless or welded pipe or tube that is usually threaded on both ends. A nipple that is fully threaded along the entire length is known as a close nipple. HQ Ruling 951940 (dated July 31, 1992) determined, based on available industry information, that nipples are twelve inches or less in length.



galvanized nipple



close nipple

All other stainless steel fittings (except stainless steel flanges, stainless threaded elbows, bends, sleeves and stainless steel butt welding fittings and stainless steel nipples) are provided for in subheading 7307.29.0090.

SUBHEADINGS 7307.91 THROUGH 7307.99

Other

The last major grouping of pipe and tube fittings includes all iron and steel fittings that are not cast or made of stainless steel. These fittings are provided for in subheadings 7307.91 through 7307.99.

Subheading 7307.91 provides for flanges that are not cast and not of stainless steel. They are similar to the flanges previously illustrated. The flanges of subheading 7307.91.1000 are not machined, not tooled and not otherwise processed after forging. They are made of iron or nonalloy steel. Nonalloy steel is also known as carbon steel. Flanges made of alloy steel (except stainless steel) that are not machined, not tooled and not otherwise processed after forging are classified in

subheading 7307.91.3000.

It is important to note that the flanges of both these subheadings (7307.91.1000 and 7307.91.3000) cannot be processed **in any manner** after the initial forging process, to be considered not machined, not tooled and not otherwise processed.

Subheading 7307.91.50 provides for those flanges not cast and not of stainless steel that are processed in some manner after forging. Subheadings 7307.91.5010 and 7307.91.5030 include those flanges with an inside diameter of less than 360 mm. Those of iron or nonalloy steel are classified in subheading 7307.91.5010 and those of alloy steel, except stainless, are classified in subheading 7307.91.5030. Flanges with an inside diameter of 360 mm or more of iron or nonalloy steel that are processed after forging are provided for in subheading 7307.91.5050 and those of alloy steel, except stainless, are provided for in subheading 7307.91.5070.



Subheading 7307.92 provides for threaded elbows, bends and sleeves that are not cast and not of stainless steel. Threaded sleeves, also known as couplings, of iron or nonalloy steel are classified in subheading 7307.92.3010 and threaded sleeves or couplings of alloy steel, other than stainless, are classified in subheading 7307.92.3030.

Elbows and bends that are threaded but not cast and not of stainless steel are provided for in subheading 7307.92.9000.

Butt welding fittings that are not cast and not made of stainless steel are classified in subheading 7307.93. Those butt welding fittings with an inside diameter of less than 360 mm that are not machined, not tooled and not otherwise processed after forging are classified in subheading 7307.93.3010 if made of iron or nonalloy steel. All other butt welding fittings with inside diameters of less than 360 mm of iron or nonalloy steel are classified in subheading 7307.93.3040. All alloy (except stainless) butt welding fittings with inside diameters measuring less than 360 mm are classified in subheading 7307.93.6000.

Butt welding fittings with an inside diameter of 360 mm or more are classified in subheading 7307.93.90. Those butt welding fittings with an inside diameter of 360 mm or more that are not machined, not tooled and not otherwise processed after forging are classified in subheading 7307.93.9010 if made of iron or nonalloy steel. All other butt welding fittings with inside diameters of 360 mm or more of iron or nonalloy steel are classified in subheading 7307.93.9040. All alloy (except stainless) butt welding fittings with inside diameters measuring 360 mm or more are classified in subheading 7307.93.9060.

All other iron or steel fittings that are not cast, not of stainless steel, not flanges, not a threaded elbow, bend or sleeve and not a butt weld fitting will be classified in subheading 7307.99.

These other fittings if not machined, not tooled and not otherwise advanced after forging are classified in subheading 7307.99.1000 if of iron or non-alloy steel and in subheading 7307.99.3000 if of alloy steel, other than stainless.

If, however, they are machined, tooled or otherwise advanced after forging, they are classified in subheading 7307.99.50. If they are of iron or non-alloy steel and are nipples they are classified in subheading 7307.99.5015. If they are other than nipples of iron or non-alloy steel they are classified in subheading 7307.99.5045. All other fittings of alloy steel (except stainless steel) that are not cast and that are machined, tooled or otherwise advanced after forging are classified in subheading 7307.99.5060.

ENTRY REQUIREMENTS

Section 141.89(a) For the products of Chapter 72 and headings 7301 to 7307, HTS, this requirement is a statement of the percentages of weight of carbon and any metallic elements contained in the articles in the form of a mill analysis or mill test certificate.

SPECIAL MARKING REQUIREMENTS

The statute requires that all pipe (iron, steel and stainless steel), and pipe and tube fittings (steel, stainless steel, chrome-moly steel or cast or malleable iron) be marked to indicate the proper country of origin **by one of five statutory methods. The acceptable methods of marking are die stamping, cast-in-mold lettering, etching, engraving or continuous paint stenciling.**

The Statute provides that if, because of the nature of an article, it is technically or commercially infeasible to mark by one of the five prescribed methods, the article may be marked by an equally permanent method of marking or in the case of small diameter pipe, tube or pipe fittings, by tagging the containers or bundles. Small diameter fittings are defined in Treasury Decision 92-70 as fittings having a nominal diameter of 1/4 inch or less. 19 U.S.C. 1304(c)(1) further provides that no exception from these marking requirements may be made under 19 U.S.C. 1304(a)(3) for these products. The exceptions noted within 19 U.S.C. 1304(a)(3) that are not allowed for these products are the same exceptions included in 134.32 of the CBP Regulations.

Therefore, all iron or steel pipe and tube fittings **must** be marked by one of the five statutory methods listed above with the exception of fittings having a nominal diameter of 1/4 inch or less.

An example of an instance where CBP approved an alternative marking method for certain pipe and tubes can be found in HQ Ruling 734806. However, the determination that a product cannot be marked by one of these methods because it is technically/ commercially infeasible will be made by CBP on a case-by-case basis.

REPORT SMUGGLING 1-800-BE-ALERT OR 1-800-NO-DROGA