



ASTM Standards

Zhonghe Steel (TianJin) Co.,Ltd



Dimensional Standards for Pipes

ASME scheduled pipes have 2 common dimensional standards namely:

ASME B36.10 – Welded and Seamless Wrought Steel Pipes

– **Sizes:** 1/8" – 80" Schedules: 10 / 20 / 30 / STD / 40 / 60 / XS / 80 / 100 / 120 / 140 / 160 / XXS

ASME B36.19 – Stainless Steel Pipe

– **Sizes:** 1/8" – 30" Schedules: 5S / 10S / 40S / 80S

SCH 40S / SCH 40 / STD and SCH 80S / SCH 80 / XS have the same wall thicknesses of 9.53mm and 12.7mm respectively.

The ASTM Pipe Standards helps to evaluate, classify, and indicate the chemical, material, mechanical and metallurgical properties of different sorts of steel, which are basically utilized for the generation of mechanical components, industrial components and building components, and other extras related to them. ASTM Standards for Pipes can be structure, carbon, ferrite, stainless steel, austenite and alloy type! ASTM Stainless Steel Pipe Standards, Carbon Steel Pipe ASTM Code are characterized the particular manufacturing process of the material and determine the exact chemical composition of pipes, fittings and flanges, through percentages of the permitted quantities of magnesium, carbon, nickel, etc., and are indicated by "Grade".

These steel standards, ASTM Steel Grades Chart are accommodating guiding metallurgical research facilities and product manufacturers, refineries, and other end-users of steel and its variation in their proper processing and application procedures to ensure quality towards safe use. A pipe may be a tubular segment or hollow cylinder, usually but not necessarily of circular cross-section, used mainly to convey substances which can flow — liquids and gases (fluids), powders, slurries, masses of small solids.

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ASTM Standard for Pipes can moreover be utilized for structural applications; hollow pipe is distant stiffer per unit weight than solid members. Now and then ASTM A105N is described; N stands not for Review, but for normalized. As you may be have noted, ASTM Cast Iron Pipe Standards, Carbon Steel Pipe ASTM Code, ASTM A105 has no Grade. For example, a carbon steel pipe can be recognized with Grade A or B, a stainless-steel pipe with Grade TP304 or Grade TP321, a carbon steel fitting with Grade WPB etc.

Below ASTM Seamless Pipe Standards, you will find as an example 3 tables with chemical requirements for:

- Flanges ASTM A182 Grade F304, F304L F316L
- Pipes ASTM A312 Grade TP304, TP304L, TP3016L
- Fittings ASTM A403 Grade WP304, WP304L, WP316L
- Furthermore, a table with frequently used ASTM Grades, arranged on Pipes, Fittings, Flanges, Valves, Bolts and Nuts, which belong together as a group.

ASTM Stainless Steel Pipe Standards, Gi Pipe ASTM Code normalizing is a type of heat treatment, appropriate to ferrous metals only. ASTM Worldwide provides industrial material and benefit standards across a wide range of industrial sectors. The American Society of Mechanical Engineers started publishing standards for mechanical apparatuses and machine parts in 1880 and has been a driving force behind safety improvements to boilers and pressure vessels used across industrial sectors. The A106 standard covers ASTM Standards For Stainless Steel Tubing, seamless carbon steel pipe for high-temperature benefit. More than 100 of those guidelines relate to steel pipe, tubing, fittings and flanges.

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These steel standards, ASTM Standard for Boiler Tube are helpful in guiding metallurgical laboratories and refineries, product manufacturers, and other end-users of steel and its variants in their proper processing and application procedures to ensure quality towards safe use of ASTM Standards List.

- ASME = American Society for Mechanical Engineers.
- ASTM= ASTM International erstwhile American Society for Testing and Materials.
- Apart from publishing standards, it also into research and publish numerous papers, codes, procedures etc. Since question is very specific, I will focus on only standards.
- ASME standards will establish the dimensions and tolerances for most commonly used items with respect to each material class, whereas ASTM establishes quality for materials which are to be used in products which are described in ASME.

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COMMONLY USED ASTM GRADES IN OFFSHORE OIL PIPELINE

Material	Pipes	Fitting	Flanges	Valves	Bolts & Nuts
Carbon Steel	ASTM A106 Gr A	ASTM A234 Gr WPA	ASTM A105	ASTM A216 Gr WCB	ASTM A193 Gr B7
	ASTM A106 Gr B	ASTM A234 Gr WPB	ASTM A105	ASTM A216 Gr WCB	ASTM A194 Gr 2H
	ASTM A106 Gr C	ASTM A234 Gr WPC	ASTM A105	ASTM A216 Gr WCB	
Carbon Steel	ASTM A335 Gr P1	ASTM A234 Gr WP1	ASTM A182 Gr F1	ASTM A217 Gr WC1	ASTM A193 Gr B7
Alloy	ASTM A335 Gr P11	ASTM A234 Gr WP11	ASTM A182 Gr F11	ASTM A217 Gr WC6	ASTM A194 Gr 2H
High-Temp	ASTM A335 Gr P12	ASTM A234 Gr WP12	ASTM A182 Gr F12	ASTM A217 Gr WC6	
	ASTM A335 Gr P22	ASTM A234 Gr WP22	ASTM A182 Gr F22	ASTM A217 Gr WC9	
	ASTM A335 Gr P5	ASTM A234 Gr WP5	ASTM A182 Gr F5	ASTM A217 Gr C5	
	ASTM A335 Gr P9	ASTM A234 Gr WP9	ASTM A182 Gr F9	ASTM A217 Gr C12	
Carbon Steel	ASTM A333 Gr 6	ASTM A420 Gr WPL6	ASTM A350 Gr LF2	ASTM A352 Gr LCB	ASTM A320 Gr L7
Alloy					ASTM A194 Gr 7
Low-Temp	ASTM A333 Gr 3	ASTM A420 Gr WPL3	ASTM A350 Gr LF3	ASTM A352 Gr LC3	
Austenitic	ASTM A312 Gr TP304	ASTM A403 Gr WP304	ASTM A182 Gr F304	ASTM A182 Gr F304	ASTM A193 Gr B8
Stainless	ASTM A312 Gr TP316	ASTM A403 Gr WP316	ASTM A182 Gr F316	ASTM A182 Gr F316	ASTM A194 Gr 8
Steel	ASTM A312 Gr TP321	ASTM A403 Gr WP321	ASTM A182 Gr F321	ASTM A182 Gr F321	
	ASTM A312 Gr TP347	ASTM A403 Gr WP347	ASTM A182 Gr F347	ASTM A182 Gr F347	

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Standard Specification for Carbon Steel Pipe ASTM Code, ASTM Standards List, Gi Pipe ASTM


Code, ASTM Stainless Steel Pipe Standards Specification

A1010/A1010M	Standard Specification for Higher-Strength Martensitic Stainless <u>Steel Plate, Sheet, and Strip</u>
A1011/A1011M	Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A105/A105M	Standard Specification for Carbon Steel Forgings for Piping Applications
A1053/A1053M	Standard Specification for Welded Ferritic-Martensitic Stainless Steel Pipe
A106/A106M	Standard Specification for <u>Seamless Carbon Steel Pipe</u> for High-Temperature Service
A126	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
A134	Standard Specification for Pipe, Steel, Electric-Fusion (Arc)-Welded (Sizes NPS 16 and Over)
A135/A135M	Standard Specification for Electric-Resistance-Welded Steel Pipe
A139/A139M	Standard Specification for Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over)
A167	Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
A179/A179M	Standard Specification for Seamless Cold-Drawn Low-Carbon Steel Heat-Exchanger and Condenser Tubes
A181/A181M	Standard Specification for Carbon Steel Forgings, for General-Purpose Piping
A182/A182M	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe <u>Flanges</u> , Forged Fittings, and Valves and Parts for High-Temperature Service
A193/A193M	Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications

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A194/A194M	Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
A197/A197M	Standard Specification for Cupola Malleable Iron
A20/A20M	Standard Specification for General Requirements for Steel Plates for Pressure Vessels
A202/A202M	Standard Specification for Pressure Vessel Plates, Alloy Steel, Chromium-Manganese-Silicon
A203/A203M	Standard Specification for Pressure Vessel Plates, Alloy Steel, Nickel
A204/A204M	Standard Specification for Pressure Vessel Plates, Alloy Steel, Molybdenum
A210/A210M	Standard Specification for Seamless Medium-Carbon Steel Boiler and Superheater Tubes
A213/A213M	Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
A216/A216M	Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service
A217/A217M	Standard Specification for Steel Castings, Martensitic Stainless and Alloy, for Pressure-Containing Parts, Suitable for High-Temperature Service
A234/A234M	Standard Specification for <u>Piping Fittings</u> of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service
A240/A240M	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
A249/A249M	Standard Specification for Welded Austenitic Steel Boiler, Superheater, Heat-Exchanger, and Condenser Tubes
A263	Standard Specification for Stainless Chromium Steel-Clad Plate
A264	Standard Specification for Stainless Steel Bars and Shapes
A265	Standard Specification for Nickel and Nickel-Base Alloy-Clad Steel Plate

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A268-A268M	Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service
A269/A269M	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
A276-A276M	Standard Specification for Stainless Chromium-Nickel Steel-Clad Plate
A278/A278M	Standard Specification for Gray Iron Castings for Pressure-Containing Parts for Temperatures Up to 650°F (350°C)
A283/A283M	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
A285/A285M	Standard Specification for Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength
A299/A299M	Standard Specification for Pressure Vessel Plates, Carbon Steel, Manganese-Silicon
A302/A302M	Standard Specification for Pressure Vessel Plates, Alloy Steel, Manganese-Molybdenum and Manganese-Molybdenum-Nickel
A307	Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60000 PSI Tensile Strength
A312/A312M	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic <u>Stainless Steel Pipes</u>
320/A320M	Standard Specification for Alloy-Steel and Stainless Steel Bolting for Low-Temperature Service
A325	Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
A333/A333M	Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service and Other Applications with Required Notch Toughness
A334/A334M	Standard Specification for Seamless and Welded Carbon and Alloy-Steel Tubes for Low-Temperature Service
A335/A335M	Standard Specification for Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
A350/A350M	Standard Specification for Carbon and Low-Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components
A351/A351M	Standard Specification for Castings, Austenitic, for Pressure-Containing Parts

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A352/A352M	Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service
A353/A353M	Standard Specification for Pressure Vessel Plates, Alloy Steel, Double-Normalized and Tempered 9% Nickel
A354	Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners
A358/A358M	Standard Specification for Electric-Fusion-Welded Austenitic Chromium-Nickel Stainless Steel Pipe for High-Temperature Service and General Applications
A36/A36M	Standard Specification for <u>Carbon Structural Steel</u>
A369/A369M	Standard Specification for Carbon and Ferritic Alloy Steel Forged and Bored Pipe for High-Temperature Service
A370	Standard Test Methods and Definitions for Mechanical Testing of Steel Products
A376/A376M	Standard Specification for Seamless Austenitic Steel Pipe for High-Temperature Service
A381	Standard Specification for Metal-Arc-Welded Steel Pipe for Use With High-Pressure Transmission Systems
A387/A387M	Standard Specification for Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum
A395/A395M	Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures
A403/A403M	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings
A409/A409	Standard Specification for Welded Large Diameter Austenitic Steel Pipe for Corrosive or High-Temperature Service
A420/A420M	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service
A426/A426M	Standard Specification for Centrifugally Cast Ferritic Alloy Steel Pipe for High-Temperature Service
A437/A437M	Standard Specification for Stainless and Alloy-Steel Turbine-Type Bolting Specially Heat Treated for High-Temperature Service
A451/A451M	Standard Specification for Centrifugally Cast Austenitic Steel Pipe for High-Temperature Service
A453/A453M	Standard Specification for High-Temperature Bolting, with Expansion Coefficients Comparable to Austenitic Stainless Steels
A47/A47M	Standard Specification for Ferritic Malleable Iron Castings
A479/A479M	Standard Specification for Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels
A48/A48M	Standard Specification for Gray Iron Castings
A487/A487M	Standard Specification for Steel Castings Suitable for Pressure Service
A494/A494M	Standard Specification for Castings, Nickel and Nickel Alloy

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A508/A508M	Standard Specification for Quenched and Tempered Vacuum-Treated Carbon and Alloy Steel Forgings for Pressure Vessels
A515/A515M	Standard Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service
A516/A516M	Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service
A524	Standard Specification for Seamless Carbon Steel Pipe for Atmospheric and Lower Temperatures
A53/A53M	Standard Specification for Steel, Black and <u>Hot-Dipped GI pipe</u> , Zinc-Coated, Welded and Seamless
A530/A530M	Standard Specification for General Requirements for Specialized Carbon and Alloy Steel Pipe
A537/A537M	Standard Specification for Pressure Vessel Plates, Heat-Treated, Carbon-Manganese-Silicon Steel
A553/A553M	Standard Specification for Pressure Vessel Plates, Alloy Steel, Quenched and Tempered 7, 8, and 9 % Nickel
A563	Standard Specification for Carbon and Alloy Steel Nuts
A571/A571M	Standard Specification for Austenitic Ductile Iron Castings for Pressure-Containing Parts Suitable for Low-Temperature Service
A587	Standard Specification for Electric-Resistance-Welded Low-Carbon Steel Pipe for the Chemical Industry
A645/A645M	Standard Specification for Pressure Vessel Plates, 5% and 5 1/2 % Nickel Alloy Steels, Specially Heat Treated
A671/A671M	Standard Specification for Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures
A672/A672M	Standard Specification for Electric-Fusion-Welded Steel Pipe for High-Pressure Service at Moderate Temperatures
A675/A675M	Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties
A691/A691M	Standard Specification for Carbon and Alloy Steel Pipe, Electric-Fusion-Welded for High-Pressure Service at High Temperatures
A694/A694M	Standard Specification for Carbon and Alloy Steel Forgings for Pipe Flanges, Fittings, Valves, and Parts for High-Pressure Transmission Service
A696	Standard Specification for Steel Bars, Carbon, Hot-Wrought or Cold-Finished, Special Quality, for Pressure Piping Components
A723/A723M	Standard Specification for Alloy Steel Forgings for High-Strength Pressure Component Application
A789/A789M	Standard Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Tubing for General Service
A790/A790M	Standard Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Pipe
A813/A813M	Standard Specification for Single- or Double-Welded Austenitic Stainless Steel Pipe
A814/A814M	Standard Specification for Cold-Worked Welded Austenitic Stainless Steel Pipe

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A815/A815M	Standard Specification for Wrought Ferritic, Ferritic/Austenitic, and Martensitic Stainless Steel Piping Fittings
A992/A992M	Standard Specification for Structural Steel Shapes
B127	Standard Specification for Nickel-Copper Alloy (UNS N04400) Plate, Sheet, and Strip
B148	Standard Specification for Aluminium-Bronze Sand Castings
B150/B150M	Standard Specification for Aluminium Bronze Rod, Bar, and Shapes
B152/B152M	Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar
B160	Standard Specification for Nickel Rod and Bar
B161	Standard Specification for Nickel Seamless Pipe and Tube
B162	Standard Specification for Nickel Plate, Sheet, and Strip
B164	Standard Specification for Nickel-Copper Alloy Rod, Bar, and Wire
B165	Standard Specification for Nickel-Copper Alloy (UNS N04400) Seamless Pipe and Tube
B166	Standard Specification for Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), and Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674) Rod, Bar, and Wire
B167	Standard Specification for Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), and Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674) Seamless Pipe and Tube
B168	Standard Specification for Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), and Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674) Plate, Sheet, and Strip
B169/169M	Standard Specification for Aluminium Bronze Sheet, Strip, and Rolled Bar
B171/B171M	Standard Specification for Copper-Alloy Plate and Sheet for Pressure Vessels, Condensers, and Heat Exchangers
B187/B187M	Standard Specification for Copper, Bus Bar, Rod, and Shapes and General Purpose Rod, Bar, and Shapes
B209	Standard Specification for Aluminium and Aluminium-Alloy Sheet and Plate
B21/B21M	Standard Specification for Naval Brass Rod, Bar, and Shapes
B210	Standard Specification for Aluminium and Aluminium-Alloy Drawn Seamless Tubes
B211	Standard Specification for Aluminium and Aluminium-Alloy Rolled or Cold Finished Bar, Rod, and Wire
B221	Standard Specification for Aluminium and Aluminium-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
B241/B241M	Standard Specification for Aluminium and Aluminium-Alloy Seamless Pipe and Seamless Extruded Tube

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B247	Standard Specification for Aluminium and Aluminium-Alloy Die Forgings, Hand Forgings, and Rolled Ring Forgings
B26/B26M	Standard Specification for Aluminium-Alloy Sand Castings
B265	Standard Specification for Titanium and Titanium Alloy Strip, Sheet, and Plate
B280	Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
B283/B283M	Standard Specification for Copper and Copper-Alloy Die Forgings (Hot-Pressed)
B32	Standard Specification for Solder Metal
B333	Standard Specification for Nickel-Molybdenum Alloy Plate, Sheet, and Strip
B335	Standard Specification for Nickel-Molybdenum Alloy Rod
B336	Specification for Nickel-Molybdenum-Chromium Alloy (UNS N10002) Rod (Withdrawn 1979)
B338	Standard Specification for Seamless and Welded Titanium and Titanium Alloy Tubes for Condensers and Heat Exchangers
B345/B345M	Standard Specification for Aluminium and Aluminium-Alloy Seamless Pipe and Seamless Extruded Tube for Gas and Oil Transmission and Distribution Piping Systems
B361	Standard Specification for Factory-Made Wrought Aluminium and Aluminium-Alloy Welding Fittings
B363	Standard Specification for Seamless and Welded Unalloyed Titanium and Titanium Alloy Welding Fittings
B366	Standard Specification for Factory-Made Wrought Nickel and Nickel Alloy Fittings
B371	Standard Specification for Copper-Zinc-Silicon Alloy Rod
B381	Standard Specification for Titanium and Titanium Alloy Forgings
B407	Standard Specification for Nickel-Iron-Chromium Alloy Seamless Pipe and Tube
B409	Standard Specification for Nickel-Iron-Chromium Alloy Plate, Sheet, and Strip
B42	Standard Specification for Seamless Copper Pipe, Standard Sizes
B423	Standard Specification for Nickel-Iron-Chromium-Molybdenum-Copper Alloy (UNS N08825, N08221, and N06845) Seamless Pipe and Tube
B424	Standard Specification for Ni-Fe-Cr-Mo-Cu Alloy (UNS N08825, UNS N08221, and UNS N06845) Plate, Sheet, and Strip
B425	Standard Specification for Ni-Fe-Cr-Mo-Cu Alloy (UNS N08825, UNS N08221, and UNS N06845) Rod and Bar
B43	Standard Specification for Seamless Red Brass Pipe, Standard Sizes
B435	Standard Specification for UNS N06002, UNS N06230, UNS N12160, and UNS R30556 Plate, Sheet, and Strip

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B443	Standard Specification for Nickel-Chromium-Molybdenum-Columbium Alloy (UNS N06625) and Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219) Plate, Sheet, and Strip
B444	Standard Specification for Nickel-Chromium-Molybdenum-Columbium Alloys (UNS N06625 and UNS N06852) and Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219) Pipe and Tube
B446	Standard Specification for Nickel-Chromium-Molybdenum-Columbium Alloy (UNS N06625), Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219), and Nickel-Chromium-Molybdenum-Tungsten Alloy (UNS N06650) Rod and Bar
B462	Standard Specification for Forged or Rolled UNS N06030, UNS N06022, UNS N06035, UNS N06200, UNS N06059, UNS N10362, UNS N06686, UNS N08020, UNS N08024, UNS N08026, UNS N08367, UNS N10276, UNS N10665, UNS N10675, UNS N10629, UNS N08031, UNS N06045, UNS N06025, UNS R20033 Alloy Pipe Flanges, Forged Fittings, and Valves and Parts for Corrosive High-Temperature Service
B463	Standard Specification for UNS N08020 Alloy Plate, Sheet, and Strip
B464	Standard Specification for Welded UNS N08020 Alloy Pipe
B466/B466M	Standard Specification for Seamless Copper-Nickel Pipe and Tube
B467	Standard Specification for Welded Copper-Nickel Pipe
B491/B491M	Standard Specification for Aluminium and Aluminium-Alloy Extruded Round Tubes for General-Purpose Applications
B493/B493M	Standard Specification for Zirconium and Zirconium Alloy Forgings
B514	Standard Specification for Welded Nickel-Iron-Chromium Alloy Pipe
B517	Standard Specification for Welded Nickel-Chromium-Iron-Alloy (UNS N06600, UNS N06603, UNS N06025, and UNS N06045) Pipe
B523/B523M	Standard Specification for Seamless and Welded Zirconium and Zirconium Alloy Tubes
B547/B547M	Standard Specification for Aluminium and Aluminium-Alloy Formed and Arc-Welded Round Tube
B550/B550M	Standard Specification for Zirconium and Zirconium Alloy Bar and Wire
B551/B551M	Standard Specification for Zirconium and Zirconium Alloy Strip, Sheet, and Plate
B564	Standard Specification for Nickel Alloy Forgings
B572	Standard Specification for UNS N06002, UNS N06230, UNS N12160, and UNS R30556 Rod
B574	Standard Specification for Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel-Molybdenum-Chromium, Low-Carbon Nickel-Molybdenum-Chromium-Tantalum, Low-Carbon Nickel-Chromium-Molybdenum-Copper, and Low-Carbon Nickel-Chromium-Molybdenum-Tungsten Alloy Rod
B575	Standard Specification for Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel-Chromium-Molybdenum-Copper, Low-Carbon Nickel-Chromium-Molybdenum-Tantalum, Low-Carbon Nickel-

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	Chromium-Molybdenum-Tungsten, and Low-Carbon Nickel-Molybdenum-Chromium Alloy Plate, Sheet, and Strip
B581	Standard Specification for Nickel-Chromium-Iron-Molybdenum-Copper Alloy Rod
B582	Standard Specification for Nickel-Chromium-Iron-Molybdenum-Copper Alloy Plate, Sheet, and Strip
B584	Standard Specification for Copper Alloy Sand Castings for General Applications
B61	Standard Specification for Steam or Valve Bronze Castings
B619	Standard Specification for Welded Nickel and Nickel-Cobalt Alloy Pipe
B62	Standard Specification for Composition Bronze or Ounce Metal Castings
B620	Standard Specification for Nickel-Iron-Chromium-Molybdenum Alloy (UNS N08320) Plate, Sheet, and Strip
B621	Standard Specification for Nickel-Iron-Chromium-Molybdenum Alloy (UNS N08320) Rod
B622	Standard Specification for Seamless Nickel and Nickel-Cobalt Alloy Pipe and Tube
B625	Standard Specification for UNS N08925, UNS N08031, UNS N08932, UNS N08926, UNS N08354, UNS N08830, and UNS R20033 Plate, Sheet, and Strip
B626	Standard Specification for Welded Nickel and Nickel-Cobalt Alloy Tube
B649	Standard Specification for Ni-Fe-Cr-Mo-Cu-N Low-Carbon Alloys (UNS N08925, UNS N08031, UNS N08354, and UNS N08926), and Cr-Ni-Fe-N Low-Carbon Alloy (UNS R20033) Bar and Wire, and Ni-Cr-Fe-Mo-N Alloy (UNS N08936) Wire
B658/B658M	Standard Specification for Seamless and Welded Zirconium and Zirconium Alloy Pipe
B668	Standard Specification for UNS N08028 and N08029 Seamless Pipe and Tube
B675	Standard Specification for UNS N08367 Welded Pipe
B68/B68M	Standard Specification for Seamless Copper Tube, Bright Annealed
B688	Standard Specification for Chromium-Nickel-Molybdenum-Iron (UNS N08366 and UNS N08367) Plate, Sheet, and Strip
B690	Standard Specification for Iron-Nickel-Chromium-Molybdenum Alloys (UNS N08366 and UNS N08367) Seamless Pipe and Tube
B705	Standard Specification for Nickel-Alloy (UNS N06625, N06219 and N08825) Welded Pipe
B 709	Standard Specification for Iron-Nickel-Chromium-Molybdenum Alloy (UNS N08028) Plate, Sheet, and Strip
B725	Standard Specification for Welded Nickel (UNS N02200/UNS N02201) and Nickel Copper Alloy (UNS N04400) Pipe
B729	Standard Specification for Seamless UNS N08020, UNS N08026, and UNS N08024 Nickel-Alloy Pipe and Tube
B75/75M	Standard Specification for Seamless Copper Tube

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B804	Standard Specification for UNS N08367 and UNS N08926 Welded Pipe
B813	Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube
B828	Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings
B861	Standard Specification for Titanium and Titanium Alloy Seamless Pipe
B862	Standard Specification for Titanium and Titanium Alloy Welded Pipe
B88	Standard Specification for Seamless Copper Water Tube
B96/B96M	Standard Specification for Copper-Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure Vessels
B98/B98M	Standard Specification for Copper-Silicon Alloy Rod, Bar and Shapes
E112	Standard Test Methods for Determining Average Grain Size
E114	Standard Practice for Ultrasonic Pulse-Echo Straight-Beam Contact Testing
E125	Standard Reference Photographs for Magnetic Particle Indications on Ferrous Castings
E155	Standard Reference Radiographs for Inspection of Aluminium and Magnesium Castings
E165	Standard Practice for Liquid Penetrant Examination for General Industry
E186	Standard Reference Radiographs for Heavy-Walled (2 to 41/2-in. (50.8 to 114-mm)) Steel Castings
E213	Standard Practice for Ultrasonic Testing of Metal Pipe and Tubing
E272	Standard Reference Radiographs for High-Strength Copper-Base and Nickel-Copper Alloy Castings
E280	Standard Reference Radiographs for Heavy-Walled (41/2 to 12-in. (114 to 305-mm)) Steel Castings
E310	Standard Reference Radiographs for Tin Bronze Castings
E446	Standard Reference Radiographs for Steel Castings Up to 2 in. (50.8 mm) in Thickness
E709	Standard Reference Radiographs for Steel Castings Up to 2 in. (50.8 mm) in Thickness
E94	Standard Guide for Radiographic Examination
ASTM A 153	Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware.
ASTM A 123	Standard Specification for Zinc (Hot –Dip Galvanized) Coating on Iron and Steel Products.

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