

ASTM Standards

Neelcon Steel Industries



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 <u>ASTM Pipe Standards</u> 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, <u>Carbon Steel Pipe ASTM Code</u> 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, <u>ASTM Steel Grades Chart</u> 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, <u>Gi Pipe ASTM Code</u> 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 <u>ASTM Standards For Stainless Steel Tubing</u>, 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, <u>ASTM Standard for Boiler Tube</u> 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 <u>A234 Gr WPB</u> | 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 | <u>ASTM A312 Gr TP304</u> | 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 | |

Note: Click on the link to read more about the ASTM specification such as Definition, Available stock, Sizes & Latest Price List.

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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 Steel Plate, Sheet, and Strip |
|--------------|--|
| 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 Seamless Carbon Steel Pipe 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 Flanges, 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 Piping Fittings 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 |
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| 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 Stainless Steel Pipes |
| 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 |
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| 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 Carbon Structural Steel |
| 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 |
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| 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 Pipe, Steel, Black and Hot-Dipped, 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 51/2 % 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 |
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| 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 |
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| 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- |
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| D444 | 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 N06219) Pipe and Tube |
| D440 | 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 |
| В 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 |
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| 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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