

ASTM Standards for Maintenance, Repair and Operations in the Chemical Process Industry

Standard Specifications for:

A6 / A6M	General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
A20 / A20M	General Requirements for Steel Plates for Pressure Vessels
A27 / A27M	Steel Castings, Carbon, for General Application
A29 / A29M	Steel Bars, Carbon and Alloy, Hot-Wrought, General Requirements for
A36 / A36M	Carbon Structural Steel
A47 / A47M	Ferritic Malleable Iron Castings
A48 / A48M	Gray Iron Castings
A53 / A53M	Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
A105 / A105M	Carbon Steel Forgings for Piping Applications
A106 / A106M	Seamless Carbon Steel Pipe for High-Temperature Service
A108	Steel Bar, Carbon and Alloy, Cold-Finished
A126	Gray Iron Castings for Valves, Flanges, and Pipe Fittings
A148 / A148M	Steel Castings, High Strength, for Structural Purposes
A167	Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
A178 / A178M	Electric-Resistance-Welded Carbon Steel and Carbon-Manganese Steel Boiler and Superheater Tubes
A179 / A179M	Seamless Cold-Drawn Low-Carbon Steel Heat-Exchanger and Condenser Tubes
A181 / A181M	Carbon Steel Forgings, for General-Purpose Piping
A182 / A182M	Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service
A192 / A192M	Seamless Carbon Steel Boiler Tubes for High-Pressure Service
A193 / A193M	Alloy-Steel and Stainless Steel Bolting Materials for High Temperature or High Pressure Service and Other Special Purpose Applications
A194 / A194M	Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
A203 / A203M	Pressure Vessel Plates, Alloy Steel, Nickel
A204 / A204	Pressure Vessel Plates, Alloy Steel, Molybdenum
A209 / A209M	Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes

A210 / A210M	Seamless Medium-Carbon Steel Boiler and Superheater Tubes
A213 / A213M	Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
A214 / A214M	Electric-Resistance-Welded Carbon Steel Heat-Exchanger and Condenser Tubes
A216 / A216M	Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service
A217 / A217M	Steel Castings, Martensitic Stainless and Alloy, for Pressure-Containing Parts, Suitable for High-Temperature Service
A234 / A234M	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service
A240 / A240M	Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
A249 / A249M	Welded Austenitic Steel Boiler, Superheater, Heat-Exchanger, and Condenser Tubes
A250 / A250M	Electric-Resistance-Welded Ferritic Alloy-Steel Boiler and Superheater Tubes
A268 / A268M	Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service
A269	Seamless and Welded Austenitic Stainless Steel Tubing for General Service
A276	Stainless Steel Bars and Shapes
A283 / A283M	Low and Intermediate Tensile Strength Carbon Steel Plates
A285 / A285M	Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength
A297 / A297M	Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat Resistant, for General Application
A307	Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
A312 / A312M	Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
A320 / A320M	Alloy-Steel and Stainless Steel Bolting Materials for Low-Temperature Service
A325	Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
A333 / A333M	Seamless and Welded Steel Pipe for Low-Temperature Service
A334 / A334M	Seamless and Welded Carbon and Alloy-Steel Tubes for Low-Temperature Service
A335 / A335M	Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
A336 / A336M	Alloy Steel Forgings for Pressure and High-Temperature Parts

A350 / A350M	Carbon and Low-Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components
A351 / A351M	Castings, Austenitic, for Pressure-Containing Parts
A352 / A352M	Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service
A354	Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners
A358 / A358M	Electric-Fusion-Welded Austenitic Chromium-Nickel Stainless Steel Pipe for High-Temperature Service and General Applications
A387 / A387M	Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum
A395 / A395M	Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures
A403 / A403M	Wrought Austenitic Stainless Steel Piping Fittings
A409 / A409M	Welded Large Diameter Austenitic Steel Pipe for Corrosive or High-Temperature Service
A420 / A420M	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service
A449	Hex Cap Screws, Bolts and Studs, Steel, Heat Treated, 120/105/90 ksi Minimum Tensile Strength, General Use
A450 / A450M	General Requirements for Carbon and Low Alloy Steel Tubes
A479 / A479M	Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels
A480 / A480M	General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
A489	Carbon Steel Lifting Eyes
A494 / A494M	Castings, Nickel and Nickel Alloy
A515 / A515M	Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service
A516 / A516M	Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service
A519	Seamless Carbon and Alloy Steel Mechanical Tubing
A530 / A530M	General Requirements for Specialized Carbon and Alloy Steel Pipe
A532/ A532M	Abrasion-Resistant Cast Irons
A536	Ductile Iron Castings
A542 /A542	Pressure Vessel Plates, Alloy Steel, Quenched-and Tempered, Chromium-Molybdenum, and Chromium-Molybdenum-Vanadium
A560 / A560M	Castings, Chromium-Nickel Alloy
A563	Carbons and Alloy Steel Nuts

A564 / A564M	Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes
A574	Alloy Steel Socket-Head Cap Screws
A576	Steel Bars, Carbon, Hot-Wrought, Special Quality
A587	Electric-Resistance-Welded Low-Carbon Steel Pipe for the Chemical Industry
A653 / A653M	Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
A693	Precipitation-Hardening Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
A703 / A703M	Steel Castings, General Requirements, for Pressure-Containing Parts
A705 / A705M	Age-Hardening Stainless Steel Forgings
A743 / A743M	Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application
A744 / A744M	Castings, Iron-Chromium-Nickel, Corrosion Resistant, for Severe Service
A781 / A781M	Castings, Steel and Alloy, Common Requirements, for General Industrial Use
A788 / A788M	Steel Forgings, General Requirements
A789 / A789M	Seamless and Welded Ferritic/Austenitic Stainless Steel Tubing for General Service
A790 / A790M	Seamless and Welded Ferritic/Austenitic Stainless Steel Pipe
A813 / A813M	Single- or Double-Welded Austenitic Stainless Steel Pipe
A815 / A815M	Wrought Ferritic, Ferritic/Austenitic, and Martensitic Stainless Steel Piping Fittings
A890 / A890M	Castings, Iron-Chromium-Nickel-Molybdenum Corrosion-Resistant, Duplex (Austenitic/Ferritic) for General Application
A924 / A924M	General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
A928 / A928M	Ferritic/Austenitic (Duplex) Stainless Steel Pipe Electric Fusion Welded with Addition of Filler Metal
A999 / A999M	General Requirements for Alloy and Stainless Steel Pipe
A1016M	General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel, and Stainless Steel Tubes
A1017 / A1017	Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum-Tungsten
A1041 / A1041M	Pressure Vessel Plates, Alloy Steel, Higher Strength Chromium-Molybdenum-Tungsten
B42	Seamless Copper Pipe, Standard Sizes
B43	Seamless Red Brass Pipe, Standard Sizes

B68	Seamless Copper Tube, Bright Annealed
B75	Seamless Copper Tube
B88	Seamless Copper Water Tube
B108	Aluminum-Alloy Permanent Mold Castings
B111 / B111M	Copper and Copper-Alloy Seamless Condenser Tubes and Ferrule Stock
B127	Nickel-Copper Alloy (UNS N04400) Plate, Sheet, and Strip
B148	Aluminum-Bronze Sand Castings
B160	Nickel Rod and Bar
B161	Nickel Seamless Pipe and Tube
B162	Nickel Plate, Sheet, and Strip
B163	Seamless Nickel and Nickel Alloy Condenser and Heat-Exchanger Tubes
B164	Nickel-Copper Alloy Rod, Bar, and Wire
B165	Nickel-Copper Alloy (UNS N04400)* Seamless Pipe and Tube
B167	Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696)* and Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617) Seamless Pipe and Tube
B171 / B171M	Copper-Alloy Plate and Sheet for Pressure Vessels, Condensers, and Heat Exchangers
B209	Aluminum and Aluminum-Alloy Sheet and Plate
B210	Aluminum and Aluminum-Alloy Drawn Seamless Tubes
B211	Aluminum and Aluminum-Alloy Bar, Rod, and Wire
B221	Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
B234	Aluminum and Aluminum-Alloy Drawn Seamless Tubes for Condensers and Heat Exchangers
B241 / B241M	Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube
B265	Titanium and Titanium Alloy Strip, Sheet, and Plate
B280	Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
B308 / B308M	Aluminum-Alloy 6061-T6 Standard Structural Profiles
B315	Seamless Copper Alloy Pipe and Tube
B333	Nickel-Molybdenum Alloy Plate, Sheet, and Strip
B338	Seamless and Welded Titanium and Titanium Alloy Tubes for Condensers and Heat Exchangers
B348	Titanium and Titanium Alloy Bars and Billets

B359 / B359M	Copper and Copper-Alloy Seamless Condenser and Heat Exchanger Tubes With Integral Fins
B361	Factory-Made Wrought Aluminum and Aluminum-Alloy Welding Fittings
B363	Seamless and Welded Unalloyed Titanium and Titanium Alloy Welding Fittings
B365	Tantalum and Tantalum Alloy Rod and Wire
B366	Factory-Made Wrought Nickel and Nickel Alloy Fittings
B367	Titanium and Titanium Alloy Castings
B381	Titanium and Titanium Alloy Forgings
B386	Molybdenum and Molybdenum Alloy Plate, Sheet, Strip, and Foil
B387	Molybdenum and Molybdenum Alloy Bar, Rod, and Wire
B392	Niobium and Niobium Alloy Bar, Rod, and Wire
B393	Niobium and Niobium Alloy Strip, Sheet, and Plate
B394	Niobium and Niobium Alloy Seamless and Welded Tubes
B395 / B395M	U-Bend Seamless Copper and Copper Alloy Heat Exchanger and Condenser Tubes
B407	Nickel-Iron-Chromium Alloy Seamless Pipe and Tube
B408	Nickel-Iron-Chromium Alloy Rod and Bar
B409	Nickel-Iron-Chromium Alloy Plate, Sheet, and Strip
B423	Nickel-Iron-Chromium-Molybdenum-Copper Alloy (UNS N08825 and N08221)* Seamless Pipe and Tube
B424	Ni-Fe-Cr-Mo-Cu Alloy (UNS N08825 and UNS N08221)* Plate, Sheet, and Strip
B425	Ni-Fe-Cr-Mo-Cu Alloy (UNS N08825 and UNS N08221) Rod and Bar
B443	Nickel-Chromium-Molybdenum-Columbium Alloy (UNS N06625) and Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219)* Plate, Sheet, and Strip
B444	Nickel-Chromium-Molybdenum-Columbium Alloys (UNS N06625 and UNS N06852) and Nickel-Chromium-Molybdenum-Silicon Alloy (UNS N06219) Pipe and Tube
B446	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	Forged or Rolled UNS N06030,N06022,N06035,N06200,N06059,N06686,N08020,N08024 ,N08026,N08367,N10276,N10665, N10675,N10629, N08031,N06045, N06025, & R20033 Alloy Pipe Flanges, Forged Fitting, & Values & Parts for Corrosive
B463	UNS N08020, UNS N08026, and UNS N08024 Alloy Plate, Sheet, and Strip
B464	Welded UNS N08020, N08024, and N08026 Alloy Pipe
B466 / B466M	Seamless Copper-Nickel Pipe and Tube
B473	UNS N08020, UNS N08024, and UNS N08026 Nickel Alloy Bar and Wire
B474	Electric Fusion Welded Nickel and Nickel Alloy Pipe
B493	Zirconium and Zirconium Alloy Forgings
B514	Welded Nickel-Iron-Chromium Alloy Pipe
B517	Welded Nickel-Chromium-Iron-Alloy (UNS N06600, UNS N06603, UNS N06025, and UNS N06045) Pipe
B521	Tantalum and Tantalum Alloy Seamless and Welded Tubes
B523 / B523M	Seamless and Welded Zirconium and Zirconium Alloy Tubes
B550 / B550M	Zirconium and Zirconium Alloy Bar and Wire
B551 / B551M	Zirconium and Zirconium Alloy Strip, Sheet, and Plate
B574	Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel- Molybdenum-Chromium-Tantalum, Low-Carbon Nickel-Chromium- Molybdenum-Copper, and Low-Carbon Nickel-Chromium- Molybdenum-Tungsten Alloy Rod
B575	Low-Carbon Nickel-Chromium-Molybdenum, Low-Carbon Nickel- Chromium-Molybdenum-Copper, Low-Carbon Nickel-Chromium- Molybdenum-Tantalum, and Low-Carbon Nickel-Chromium- Molybdenum-Tungsten Alloy Plate, Sheet, and Strip
B582	Nickel-Chromium-Iron-Molybdenum-Copper Alloy Plate, Sheet, and Strip
B600	Descaling and Cleaning Titanium and Titanium Alloy Surfaces
B614	Descaling and Cleaning Zirconium and Zirconium Alloy Surfaces
B619	Welded Nickel and Nickel-Cobalt Alloy Pipe
B622	Seamless Nickel and Nickel-Cobalt Alloy Pipe and Tube
B625	UNS N08925, UNS N08031, UNS N08932, UNS N08926, UNS N08354, and UNS R20033 Plate, Sheet, and Strip
B626	Welded Nickel and Nickel-Cobalt Alloy Tube
B640	Welded Copper Tube for Air Conditioning and Refrigeration Service

B649	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
B653 / B653M	Seamless and Welded Zirconium and Zirconium Alloy Welding Fittings
B658 / B658M	Seamless and Welded Zirconium and Zirconium Alloy Pipe
B673	UNS N08925, UNS N08354, and UNS N08926 Welded Pipe
B674	UNS N08925, UNS N08354, and UNS N08926 Welded Tube
B675	UNS N08367 Welded Pipe
B677	UNS N08925, UNS N08354, and UNS N08926 Seamless Pipe and Tube
B688	Chromium-Nickel-Molybdenum-Iron (UNS N08366 and UNS N08367) Plate, Sheet, and Strip
B690	Iron-Nickel-Chromium-Molybdenum Alloys (UNS N08366 and UNS N08367) Seamless Pipe and Tube
B691	Iron-Nickel-Chromium-Molybdenum Alloys (UNS N08366 and UNS N08367) Rod, Bar, and Wire
B704	Welded UNS N06625, UNS N06219 and UNS N08825 Alloy Tubes
B705	Nickel-Alloy (UNS N06625, N06219 and N08825) Welded Pipe
B708	Tantalum and Tantalum Alloy Plate, Sheet and Strip
B729	Seamless UNS N08020, UNS N08026, and UNS N08024 Nickel-Alloy Pipe and Tube
B751	Nickel and Nickel Alloy Welded Tube
B752	Castings, Zirconium-Based, Corrosion-Resistant, for General Application
B760	Tungsten Plate, Sheet, and Foil
B775	Nickel and Nickel Alloy Welded Pipe
B829	Nickel and Nickel Alloys Seamless Pipe and Tube
B861	Titanium and Titanium Alloy Seamless Pipe
B862	Titanium and Titanium Alloy Welded Pipe
B863	Titanium and Titanium Alloy Wire
B891	Seamless and Welded Titanium and Titanium Alloy Condenser and Heat Exchanger Tubes with Integral Fins
B898	Reactive and Refractory Metal Clad Plate
B906	Flat-Rolled Nickel and Nickel Alloys Plate, Sheet and Strip
D1785	Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
D2241	Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)
D2466	Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40

D2467	Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
D2846 / D2846M	Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems
D3034	Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
F439	Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80
F441 / F441M	Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80
F593	Stainless Steel Bolts, Hex Cap Screws, and Studs
F679	Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings
F714	Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
F835	Alloy Steel Socket Button and Flat Countersunk Head Cap Screws
F880	Stainless Steel Socket-Set Screws