Appendix 1

ASTM FERROUS METAL STANDARDS

Standard	Title
ASTM A1-00 (2010)	Standard Specification for Carbon Steel Tee Rails
ASTM A2-02 (2014)	Standard Specification for Carbon Steel Girder Rails of Plain, Grooved, and Guard Types
ASTM A3-01 (2012)	Standard Specification for Steel Joint Bars, Low, Medium, and High Carbon (Non-Heat-Treated)
ASTM A6/A6M-14	Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
ASTM A20/A20M-14	Standard Specification for General Requirements for Steel Plates for Pressure Vessels
ASTM A27/A27M-13	Standard Specification for Steel Castings, Carbon, for General Application
ASTM A29/A29M-12	Standard Specification for General Requirements for Steel Bars, Carbon and Alloy, Hot-Wrought
ASTM A31-14	Standard Specification for Steel Rivets and Bars for Rivets, Pressure Vessels
ASTM A34/A34M-06 (2012)	Standard Practice for Sampling and Procurement Testing of Magnetic Materials
ASTM A36/A36M-14	Standard Specification for Carbon Structural Steel
ASTM A47/A47M-99 (2014)	Standard Specification for Ferritic Malleable Iron Castings
ASTM A48/A48M-03 (2012)	Standard Specification for Gray Iron Castings
ASTM A49-12	Standard Specification for Heat-Treated Carbon Steel Joint Bars, Microalloyed Joint Bars, and Forged Carbon Steel Compromise Joint Bars
ASTM A53/A53M-12	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A65-07 (2013)	Standard Specification for Steel Track Spikes
ASTM A66-07 (2013)	Standard Specification for Steel Screw Spikes
ASTM A67-00 (2010)	Standard Specification for Steel Tie Plates, Low-Carbon and High-Carbon-Hot-Worked
ASTM A74-13a	Standard Specification for Cast Iron Soil Pipe and Fittings
ASTM A90/A90M-13	Standard Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
ASTM A99-03 (2014)	Standard Specification for Ferromanganese
ASTM A100-07 (2012)	Standard Specification for Ferrosilicon
ASTM A101-04 (2014)	Standard Specification for Ferrochromium
ASTM A102-04 (2014)	Standard Specification for Ferrovanadium
ASTM A105/A105M-14	Standard Specification for Carbon Steel Forgings for Piping Applications
ASTM A106/A106M-14	Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service
ASTM A108-13	Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished
ASTM A109/A109M-14	Standard Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled
ASTM A111-99a (2014)	Standard Specification for Zinc-Coated (Galvanized) “Iron” Telephone and Telegraph Line Wire
ASTM A116-11	Standard Specification for Metallic-Coated, Steel Woven Wire Fence Fabric
ASTM A121-13	Standard Specification for Metallic-Coated Carbon Steel Barbed Wire
ASTM A123/A123M-13	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A125-96 (2013)	Standard Specification for Steel Springs, Helical, Heat-Treated
ASTM A126-04 (2014)	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A128/A128M-93 (2012)	Standard Specification for Steel Castings, Austenitic Manganese
ASTM A131/A131M-14	Standard Specification for Structural Steel for Ships
ASTM A132-04 (2014)	Standard Specification for Ferromolybdenum
ASTM A134-96 (2012)	Standard Specification for Pipe, Steel, Electric-Fusion (Arc)-Welded (Sizes NPS 16 and Over)
ASTM A135/A135M-09 (2014)	Standard Specification for Electric-Resistance-Welded Steel Pipe
ASTM A139/A139M-04 (2010)	Standard Specification for Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over)
ASTM A143/A143M-07 (2014)	Standard Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement
ASTM A144-04 (2014)	Specification for Ferrotungsten
ASTM A146-04 (2014)	Standard Specification for Molybdenum Oxide Products
ASTM A148/A148M-14	Standard Specification for Steel Castings, High Strength, for Structural Purposes
ASTM A153/A153M-09	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A159-83 (2011)	Standard Specification for Automotive Gray Iron Castings
ASTM A178/A178M-02 (2012)	Standard Specification for Electric-Resistance-Welded Carbon Steel and Carbon-Manganese Steel Boiler and Superheater Tubes
ASTM A179/A179M-90a (2012)	Standard Specification for Seamless Cold-Drawn Low-Carbon Steel Heat-Exchanger and Condenser Tubes
ASTM A181/A181M-14	Standard Specification for Carbon Steel Forgings, for General-Purpose Piping
ASTM A182/A182M-15	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service
ASTM A183-14	Standard Specification for Carbon Steel Track Bolts and Nuts
ASTM A184/A184M-06 (2011)	Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A192/A192M-02 (2012)	Standard Specification for Seamless Carbon Steel Boiler Tubes for High-Pressure Service
ASTM A193/A193M-15	Standard Specification for Alloy-Steel and Stainless Steel Bolting for High-Temperature or High Pressure Service and Other Special Purpose Applications
ASTM A194/A194M-15	Standard Specification for Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
ASTM A197/A197M-00 (2011)	Standard Specification for Cupola Malleable Iron
ASTM A203/A203M-12	Standard Specification for Pressure Vessel Plates, Alloy Steel, Nickel

Standard	Title
ASTM A204/A204M-12	Standard Specification for Pressure Vessel Plates, Alloy Steel, Molybdenum
ASTM A209/A209M-03 (2012)	Standard Specification for Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes
ASTM A210/A210M-02 (2012)	Standard Specification for Seamless Medium-Carbon Steel Boiler and Superheater Tubes
ASTM A213/A213M-15a	Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
ASTM A214/A214M-96 (2012)	Standard Specification for Electric-Resistance-Welded Carbon Steel Heat-Exchanger and Condenser Tubes
ASTM A216/A216M-14	Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High- Temperature Service
ASTM A217/A217M-14	Standard Specification for Steel Castings, Martensitic Stainless and Alloy, for Pressure- Containing Parts, Suitable for High-Temperature Service
ASTM A220/A220M-99 (2014)	Standard Specification for Pearlitic Malleable Iron
ASTM A225/A225M-12	Standard Specification for Pressure Vessel Plates, Alloy Steel, Manganese-Vanadium-Nickel
ASTM A227/A227M-06 (2011)	Standard Specification for Steel Wire, Cold-Drawn for Mechanical Springs
ASTM A228/A228M-14	Standard Specification for Steel Wire, Music Spring Quality
ASTM A229/A229M-12	Standard Specification for Steel Wire, Quenched and Tempered for Mechanical Springs
ASTM A230/A230M-05 (2011)	Standard Specification for Steel Wire, Oil-Tempered Carbon Valve Spring Quality
ASTM A231/A231M-10	Standard Specification for Chromium-Vanadium Alloy Steel Spring Wire
ASTM A232/A232M-05 (2011)	Standard Specification for Chromium-Vanadium Alloy Steel Valve Spring Quality Wire
ASTM A234/A234M-14	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service
ASTM A239-14	Standard Practice for Locating the Thinnest Spot in a Zinc (Galvanized) Coating on Iron or Steel Articles
ASTM A240/A240M-15a	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
ASTM A242/A242M-13	Standard Specification for High-Strength Low-Alloy Structural Steel
ASTM A247-10	Standard Test Method for Evaluating the Microstructure of Graphite in Iron Castings
ASTM A249/A249M-14a	Standard Specification for Welded Austenitic Steel Boiler, Superheater, Heat-Exchanger, and Condenser Tubes
ASTM A250/A250M-05 (2014)	Standard Specification for Electric-Resistance-Welded Ferritic Alloy-Steel Boiler and Superheater Tubes
ASTM A252-10	Standard Specification for Welded and Seamless Steel Pipe Piles
ASTM A254/A254M-12	Standard Specification for Copper-Brazed Steel Tubing
ASTM A255-10 (2014)	Standard Test Methods for Determining Hardenability of Steel
ASTM A262-14	Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels
ASTM A263-12	Standard Specification for Stainless Chromium Steel-Clad Plate
ASTM A264-12	Standard Specification for Stainless Chromium-Nickel Steel-Clad Plate
ASTM A265-12	Standard Specification for Nickel and Nickel-Base Alloy-Clad Steel Plate
ASTM A266/A266M-13	Standard Specification for Carbon Steel Forgings for Pressure Vessel Components
ASTM A268/A268M-10	Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service
ASTM A269/A269M-14	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
ASTM A270/A270M-15	Standard Specification for Seamless and Welded Austenitic and Ferritic/Austenitic Stainless Steel Sanitary Tubing
ASTM A275/A275M-15	Standard Practice for Magnetic Particle Examination of Steel Forgings
ASTM A276/A276M-15	Standard Specification for Stainless Steel Bars and Shapes
ASTM A278/A278M-01 (2011)	Standard Specification for Gray Iron Castings for Pressure-Containing Parts for Temperatures Up to 650°F (350°C)
ASTM A283/A283M-13	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
ASTM A285/A285M-12	Standard Specification for Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength
ASTM A288-91 (2013)	Standard Specification for Carbon and Alloy Steel Forgings for Magnetic Retaining Rings for Turbine Generators
ASTM A289/A289M-97 (2013)	Standard Specification for Alloy Steel Forgings for Nonmagnetic Retaining Rings for Generators
ASTM A290/A290M-05 (2015)	Standard Specification for Carbon and Alloy Steel Forgings for Rings for Reduction Gears
ASTM A291/A291M-05 (2015)	Standard Specification for Steel Forgings, Carbon and Alloy, for Pinions, Gears and Shafts for Reduction Gears
ASTM A295/A295M-14	Standard Specification for High-Carbon Anti-Friction Bearing Steel
ASTM A297/A297M-14	Standard Specification for Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat Resistant, for General Application
ASTM A299/A299M-09 (2014)	Standard Specification for Pressure Vessel Plates, Carbon Steel, Manganese-Silicon
ASTM A302/A302M-12	Standard Specification for Pressure Vessel Plates, Alloy Steel, Manganese-Molybdenum and Manganese-Molybdenum-Nickel
ASTM A304-11	Standard Specification for Carbon and Alloy Steel Bars Subject to End-Quench Hardenability Requirements

Standard	Title
ASTM A307-14	Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
ASTM A308/A308M-10	Standard Specification for Steel Sheet, Terne (Lead-Tin Alloy) Coated by the Hot-Dip Process
ASTM A309-01 (2012)	Standard Test Method for Weight and Composition of Coating on Terne Sheet by the Triple-Spot Test
ASTM A311/A311M-04 (2015)	Standard Specification for Cold-Drawn, Stress-Relieved Carbon Steel Bars Subject to Mechanical Property Requirements
ASTM A312/A312M-15	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
ASTM A313/A313M-13	Standard Specification for Stainless Steel Spring Wire
ASTM A314-13a	Standard Specification for Stainless Steel Billets and Bars for Forging
ASTM A319-71 (2011)	Standard Specification for Gray Iron Castings for Elevated Temperatures for Non-Pressure Containing Parts
ASTM A320/A320M-15	Standard Specification for Alloy-Steel and Stainless Steel Bolting for Low-Temperature Service
ASTM A322-13	Standard Specification for Steel Bars, Alloy, Standard Grades
ASTM A323-05 (2010)	Standard Specification for Ferroboron
ASTM A324-08 (2013)	Standard Specification for Ferrotitanium
ASTM A325-14	Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A325M-14	Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength (Metric)
ASTM A327/A327M-11	Standard Test Methods for Impact Testing of Cast Irons
ASTM A328/A328M-13a	Standard Specification for Steel Sheet Piling
ASTM A333/A333M-13	Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service and Other Applications with Required Notch Toughness
ASTM A334/A334M-04a (2010)	Standard Specification for Seamless and Welded Carbon and Alloy-Steel Tubes for Low-Temperature Service
ASTM A335/A335M-15	Standard Specification for Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
ASTM A336/A336M-10a	Standard Specification for Alloy Steel Forgings for Pressure and High-Temperature Parts
ASTM A338-84 (2014)	Standard Specification for Malleable Iron Flanges, Pipe Fittings, and Valve Parts for Railroad, Marine, and Other Heavy Duty Service at Temperatures Up to 650°F (345°C)
ASTM A340-14	Standard Terminology of Symbols and Definitions Relating to Magnetic Testing
ASTM A341/A341M-00 (2011)	Standard Test Method for Direct Current Magnetic Properties of Materials Using D-C Permeameters and the Ballistic Test Methods
ASTM A342/A342M-14	Standard Test Methods for Permeability of Weakly Magnetic Materials
ASTM A343/ A 343M-14	Standard Test Method for Alternating-Current Magnetic Properties of Materials at Power Frequencies Using Wattmeter-Ammeter-Voltmeter Method and 25-cm Epstein Test Frame
ASTM A345-14	Standard Specification for Flat-Rolled Electrical Steels for Magnetic Applications
ASTM A348/A348M-05 (2011)	Standard Test Method for Alternating Current Magnetic Properties of Materials Using the Wattmeter-Ammeter-Voltmeter Method, 100 to 10 000 Hz and 25-cm Epstein Frame
ASTM A350/A350M-15	Standard Specification for Carbon and Low-Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components
ASTM A351/A351M-14	Standard Specification for Castings, Austenitic, for Pressure-Containing Parts
ASTM A352/A352M-06 (2012)	Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service
ASTM A353/A353M-09 (2014)	Standard Specification for Pressure Vessel Plates, Alloy Steel, Double-Normalized and Tempered 9% Nickel
ASTM A354-11	Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners
ASTM A355-89 (2012)	Standard Specification for Steel Bars, Alloys, for Nitriding
ASTM A356/A356M-11	Standard Specification for Steel Castings, Carbon, Low Alloy, and Stainless Steel, Heavy-Walled for Steam Turbines
ASTM A358/A358M-14a	Standard Specification for Electric-Fusion-Welded Austenitic Chromium-Nickel Stainless Steel Pipe for High-Temperature Service and General Applications
ASTM A363-03 (2014)	Standard Specification for Zinc-Coated (Galvanized) Steel Overhead Ground Wire Strand
ASTM A367-11	Standard Test Methods of Chill Testing of Cast Iron
ASTM A368-95a (2013)	Standard Specification for Stainless Steel Wire Strand
ASTM A369/A369M-11	Standard Specification for Carbon and Ferritic Alloy Steel Forged and Bored Pipe for High-Temperature Service
ASTM A370-14	Standard Test Methods and Definitions for Mechanical Testing of Steel Products
ASTM A372/A372M-15	Standard Specification for Carbon and Alloy Steel Forgings for Thin-Walled Pressure Vessels
ASTM A376/A376M-14	Standard Specification for Seamless Austenitic Steel Pipe for High-Temperature Service
ASTM A377-03 (2014)	Standard Index of Specifications for Ductile-Iron Pressure Pipe
ASTM A380/A380M-13	Standard Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems
ASTM A381-96 (2012)	Standard Specification for Metal-Arc-Welded Steel Pipe for Use With High-Pressure Transmission Systems
ASTM A384/ A 384M-07 (2013)	Standard Practice for Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Assemblies

Standard	Title
ASTM A385/A385M-11	Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
ASTM A387/A387M-11	Standard Specification for Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum
ASTM A388/A388M-15	Standard Practice for Ultrasonic Examination of Steel Forgings
ASTM A389/A389M-13	Standard Specification for Steel Castings, Alloy, Specially Heat-Treated, for Pressure-Containing Parts, Suitable for High-Temperature Service
ASTM A390-06 (2011)	Standard Specification for Zinc-Coated (Galvanized) Steel Poultry Fence Fabric (Hexagonal and Straight Line)
ASTM A391/A391M-07 (2012)	Standard Specification for Grade 80 Alloy Steel Chain
ASTM A392-11a	Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric
ASTM A394-08 (2015)	Standard Specification for Steel Transmission Tower Bolts, Zinc-Coated and Bare
ASTM A395/A395M-99 (2014)	Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures
ASTM A400-69 (2012)	Standard Practice for Steel Bars, Selection Guide, Composition, and Mechanical Properties
ASTM A401/A401M-10	Standard Specification for Steel Wire, Chromium-Silicon Alloy
ASTM A403/A403M-15	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings
ASTM A407-07 (2013)	Standard Specification for Steel Wire, Cold-Drawn, for Coiled-Type Springs
ASTM A409/A409M-15	Standard Specification for Welded Large Diameter Austenitic Steel Pipe for Corrosive or High-Temperature Service
ASTM A411-08 (2013)	Standard Specification for Zinc-Coated (Galvanized) Low-Carbon Steel Armor Wire
ASTM A413/A413M-07 (2012)	Standard Specification for Carbon Steel Chain
ASTM A414/A414M-14	Standard Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy for Pressure Vessels
ASTM A416/A416M-12a	Standard Specification for Steel Strand, Uncoated Seven-Wire for Prestressed Concrete
ASTM A418/A418M-15	Standard Practice for Ultrasonic Examination of Turbine and Generator Steel Rotor Forgings
ASTM A420/A420M-14	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service
ASTM A421/A421M-10	Standard Specification for Uncoated Stress-Relieved Steel Wire for Prestressed Concrete
ASTM A423/A423M-09 (2014)	Standard Specification for Seamless and Electric-Welded Low-Alloy Steel Tubes
ASTM A424/A424M-09a	Standard Specification for Steel, Sheet, for Porcelain Enameling
ASTM A426/A426M-13	Standard Specification for Centrifugally Cast Ferritic Alloy Steel Pipe for High-Temperature Service
ASTM A427/A427M-10 (2015)	Standard Specification for Wrought Alloy Steel Rolls for Cold and Hot Reduction
ASTM A428/A428M-10 (2014)	Standard Test Method for Weight [Mass] of Coating on Aluminum-Coated Iron or Steel Articles
ASTM A434-06 (2012)	Standard Specification for Steel Bars, Alloy, Hot-Wrought or Cold-Finished, Quenched and Tempered
ASTM A435/A435M-90 (2012)	Standard Specification for Straight-Beam Ultrasonic Examination of Steel Plates
ASTM A436-84 (2011)	Standard Specification for Austenitic Gray Iron Castings
ASTM A437/A437M-12	Standard Specification for Stainless and Alloy-Steel Turbine-Type Bolting Specially Heat Treated for High-Temperature Service
ASTM A439-83 (2009)	Standard Specification for Austenitic Ductile Iron Castings
ASTM A447/A447M-11	Standard Specification for Steel Castings, Chromium-Nickel-Iron Alloy (25-12 Class), for High-Temperature Service
ASTM A449-14	Standard Specification for Hex Cap Screws, Bolts and Studs, Steel, Heat Treated, 120/105/90 ksi Minimum Tensile Strength, General Use
ASTM A450/A450M-15	Standard Specification for General Requirements for Carbon and Low Alloy Steel Tubes
ASTM A451/A451M-14	Standard Specification for Centrifugally Cast Austenitic Steel Pipe for High-Temperature Service
ASTM A453/A453M-12	Standard Specification for High-Temperature Bolting, with Expansion Coefficients Comparable to Austenitic Stainless Steels
ASTM A455/A455M-12a	Standard Specification for Pressure Vessel Plates, Carbon Steel, High-Strength Manganese
ASTM A456/A456M-08 (2013)	Standard Specification for Magnetic Particle Examination of Large Crankshaft Forgings
ASTM A459-08 (2013)	Standard Specification for Zinc-Coated Flat Steel Armoring Tape
ASTM A460-11	Standard Specification for Copper-Clad Steel Wire Strand
ASTM A463/A463M-10 (2015)	Standard Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process
ASTM A466/A466M-07 (2012)	Standard Specification for Weldless Chain
ASTM A467/A467M-07 (2012)	Standard Specification for Machine and Coil Chain
ASTM A469/A469M-07 (2012)	Standard Specification for Vacuum-Treated Steel Forgings for Generator Rotors
ASTM A470/A470M-05 (2015)	Standard Specification for Vacuum-Treated Carbon and Alloy Steel Forgings for Turbine Rotors and Shafts
ASTM A471/A471M-09 (2014)	Standard Specification for Vacuum-Treated Alloy Steel Forgings for Turbine Rotor Disks and Wheels
ASTM A472/A472M-07 (2012)	Standard Specification for Heat Stability of Steam Turbine Shafts and Rotor Forgings
ASTM A473-15	Standard Specification for Stainless Steel Forgings
ASTM A474-03 (2013)	Standard Specification for Aluminum-Coated Steel Wire Strand
ASTM A475-03 (2014)	Standard Specification for Zinc-Coated Steel Wire Strand
ASTM A476/A476M-00 (2014)	Standard Specification for Ductile Iron Castings for Paper Mill Dryer Rolls
ASTM A478-97 (2013)	Standard Specification for Chromium-Nickel Stainless Steel Weaving and Knitting Wire
ASTM A479/A479M-14	Standard Specification for Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels

Standard	Title
ASTM A480/A480M-14b	Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
ASTM A481-05 (2010)	Standard Specification for Chromium Metal
ASTM A482/A482M-11	Standard Specification for Ferrochrome-Silicon
ASTM A483/A483M-10	Standard Specification for Silicomanganese
ASTM A484/A484M-15	Standard Specification for General Requirements for Stainless Steel Bars, Billets, and Forgings
ASTM A485-14	Standard Specification for High Hardenability Antifriction Bearing Steel
ASTM A487/A487M-14	Standard Specification for Steel Castings Suitable for Pressure Service
ASTM A488/A488M-12	Standard Practice for Steel Castings, Welding, Qualifications of Procedures and Personnel
ASTM A489-12	Standard Specification for Carbon Steel Lifting Eyes
ASTM A490-14a	Standard Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength
ASTM A490M-14a	Standard Specification for High-Strength Steel Bolts, Classes 10.9 and 10.9.3, for Structural Steel Joints (Metric)
ASTM A491-11	Standard Specification for Aluminum-Coated Steel Chain-Link Fence Fabric
ASTM A492-95 (2013)	Standard Specification for Stainless Steel Rope Wire
ASTM A493-09 (2013)	Standard Specification for Stainless Steel Wire and Wire Rods for Cold Heading and Cold Forging
ASTM A494/A494M-15	Standard Specification for Castings, Nickel and Nickel Alloy
ASTM A495-06 (2010)	Standard Specification for Calcium-Silicon Alloys
ASTM A498/A498M-14	Standard Specification for Seamless and Welded Carbon Steel Heat-Exchanger Tubes with Integral Fins
ASTM A499-15	Standard Specification for Steel Bars and Shapes, Carbon Rolled from "T" Rails
ASTM A500/A500M-13	Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A501/A501M-14	Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
ASTM A502-03 (2015)	Standard Specification for Rivets, Steel, Structural
ASTM A503/A503M-15	Standard Specification for Ultrasonic Examination of Forged Crankshafts
ASTM A504/A504-14	Standard Specification for Wrought Carbon Steel Wheels
ASTM A505-12	Standard Specification for Steel, Sheet and Strip, Alloy, Hot-Rolled and Cold-Rolled, General Requirements for
ASTM A506-12	Standard Specification for Alloy and Structural Alloy Steel, Sheet and Strip, Hot-Rolled and Cold-Rolled
ASTM A507-12	Standard Specification for Drawing Alloy Steel, Sheet and Strip, Hot-Rolled and Cold-Rolled
ASTM A508/A508M-14	Standard Specification for Quenched and Tempered Vacuum-Treated Carbon and Alloy Steel Forgings for Pressure Vessels
ASTM A510/A510M-13	Standard Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel
ASTM A511/A511M-15a	Standard Specification for Seamless Stainless Steel Mechanical Tubing
ASTM A512-06 (2012)	Standard Specification for Cold-Drawn Buttweld Carbon Steel Mechanical Tubing
ASTM A513/A513M-15	Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing
ASTM A514/A514M-14	Standard Specification for High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding
ASTM A515/A515M-10	Standard Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service
ASTM A516/A516M-10	Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service
ASTM A517/A517M-10	Standard Specification for Pressure Vessel Plates, Alloy Steel, High-Strength, Quenched and Tempered
ASTM A518/A518M-99 (2012)	Standard Specification for Corrosion-Resistant High-Silicon Iron Castings
ASTM A519-06 (2012)	Standard Specification for Seamless Carbon and Alloy Steel Mechanical Tubing
ASTM A521/A521M-06 (2011)	Standard Specification for Steel, Closed-Impression Die Forgings for General Industrial Use
ASTM A522/A522M-14	Standard Specification for Forged or Rolled 8 and 9% Nickel Alloy Steel Flanges, Fittings, Valves, and Parts for Low-Temperature Service
ASTM A523-96 (2012)	Standard Specification for Plain End Seamless and Electric-Resistance-Welded Steel Pipe for High-Pressure Pipe-Type Cable Circuits
ASTM A524-96 (2012)	Standard Specification for Seamless Carbon Steel Pipe for Atmospheric and Lower Temperatures
ASTM A529/A529M-14	Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality
ASTM A530/A530M-12	Standard Specification for General Requirements for Specialized Carbon and Alloy Steel Pipe
ASTM A531/A531M-13	Standard Practice for Ultrasonic Examination of Turbine-Generator Steel Retaining Rings
ASTM A532/A532M-10 (2014)	Standard Specification for Abrasion-Resistant Cast Irons
ASTM A533/A533M-09 (2014)	Standard Specification for Pressure Vessel Plates, Alloy Steel, Quenched and Tempered, Manganese-Molybdenum and Manganese-Molybdenum-Nickel
ASTM A534-14	Standard Specification for Carburizing Steels for Anti-Friction Bearings
ASTM A536-84 (2014)	Standard Specification for Ductile Iron Castings
ASTM A537/A537M-13	Standard Specification for Pressure Vessel Plates, Heat-Treated, Carbon-Manganese-Silicon Steel
ASTM A540/A540M-11	Standard Specification for Alloy-Steel Bolting for Special Applications

Standard	Title
ASTM A541/A541M-05 (2015)	Standard Specification for Quenched and Tempered Carbon and Alloy Steel Forgings for Pressure Vessel Components
ASTM A542/A542M-13	Standard Specification for Pressure Vessel Plates, Alloy Steel, Quenched-and-Tempered, Chromium-Molybdenum, and Chromium-Molybdenum-Vanadium
ASTM A543/A543M-09 (2013)	Standard Specification for Pressure Vessel Plates, Alloy Steel, Quenched and Tempered Nickel-Chromium-Molybdenum
ASTM A550-06 (2010)	Standard Specification for Ferrocolumbium
ASTM A551/A551M-08 (2013)	Standard Specification for Carbon Steel Tires for Railway and Rapid Transit Applications
ASTM A553/A553M-14	Standard Specification for Pressure Vessel Plates, Alloy Steel, Quenched and Tempered 7, 8, and 9% Nickel
ASTM A554-15	Standard Specification for Welded Stainless Steel Mechanical Tubing
ASTM A555/A555M-05 (2014)	Standard Specification for General Requirements for Stainless Steel Wire and Wire Rods
ASTM A556/A556M-96 (2012)	Standard Specification for Seamless Cold-Drawn Carbon Steel Feedwater Heater Tubes
ASTM A560/A560M-12	Standard Specification for Castings, Chromium-Nickel Alloy
ASTM A561-08 (2014)	Standard Practice for Macroetch Testing of Tool Steel Bars
ASTM A562/A562M-10	Standard Specification for Pressure Vessel Plates, Carbon Steel, Manganese-Titanium for Glass or Diffused Metallic Coatings
ASTM A563-15	Standard Specification for Carbon and Alloy Steel Nuts
ASTM A564/A564M-13	Standard Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes
ASTM A565/A565M-10	Standard Specification for Martensitic Stainless Steel Bars for High-Temperature Service
ASTM A568/A568M-14	Standard Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for
ASTM A571/A571M-01 (2011)	Standard Specification for Austenitic Ductile Iron Castings for Pressure-Containing Parts Suitable for Low-Temperature Service
ASTM A572/A572M-15	Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
ASTM A573/A573M-13	Standard Specification for Structural Carbon Steel Plates of Improved Toughness
ASTM A574-13	Standard Specification for Alloy Steel Socket-Head Cap Screws
ASTM A574M-12	Standard Specification for Alloy Steel Socket-Head Cap Screws (Metric)
ASTM A575-96 (2013)	Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades
ASTM A576-90b (2012)	Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality
ASTM A577/A577M-90 (2012)	Standard Specification for Ultrasonic Angle-Beam Examination of Steel Plates
ASTM A578/A578M-07 (2012)	Standard Specification for Straight-Beam Ultrasonic Examination of Rolled Steel Plates for Special Applications
ASTM A579/A579M-04a (2014)	Standard Specification for Superstrength Alloy Steel Forgings
ASTM A580/A580M-15	Standard Specification for Stainless Steel Wire
ASTM A581/A581M-95b (2014)	Standard Specification for Free-Machining Stainless Steel Wire and Wire Rods
ASTM A582/A582M-12	Standard Specification for Free-Machining Stainless Steel Bars
ASTM A586-04a (2014)	Standard Specification for Zinc-Coated Parallel and Helical Steel Wire Structural Strand
ASTM A587-96 (2012)	Standard Specification for Electric-Resistance-Welded Low-Carbon Steel Pipe for the Chemical Industry
ASTM A588/A588M-15	Standard Specification for High-Strength Low-Alloy Structural Steel, up to 50 ksi [345 MPa] Minimum Yield Point, with Atmospheric Corrosion Resistance
ASTM A589/A589M-06 (2012)	Standard Specification for Seamless and Welded Carbon Steel Water-Well Pipe
ASTM A592/A592M-10 (2015)	Standard Specification for High-Strength Quenched and Tempered Low-Alloy Steel Forged Parts for Pressure Vessels
ASTM A595/A595M-14	Standard Specification for Steel Tubes, Low-Carbon or High Strength Low-Alloy, Tapered for Structural Use
ASTM A596/A596M-14	Standard Test Method for Direct-Current Magnetic Properties of Materials Using the Ballistic Method and Ring Specimens
ASTM A597/A597M-14	Standard Specification for Cast Tool Steel
ASTM A598/A598M-02 (2015)	Standard Test Method for Magnetic Properties of Magnetic Amplifier Cores
ASTM A599/A599M-07 (2012)	Standard Specification for Tin Mill Products, Electrolytic Tin-Coated, Cold-Rolled Sheet
ASTM A600-92a (2010)	Standard Specification for Tool Steel High Speed
ASTM A601/A601M-10	Standard Specification for Electrolytic Manganese Metal
ASTM A602-94 (2014)	Standard Specification for Automotive Malleable Iron Castings
ASTM A603-98 (2014)	Standard Specification for Zinc-Coated Steel Structural Wire Rope
ASTM A604/A604M-07 (2012)	Standard Practice for Macroetch Testing of Consumable Electrode Remelted Steel Bars and Billets
ASTM A606/A606M-09a	Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance
ASTM A608/A608M-14	Standard Specification for Centrifugally Cast Iron-Chromium-Nickel High-Alloy Tubing for Pressure Application at High Temperatures
ASTM A609/A609M-12	Standard Practice for Castings, Carbon, Low-Alloy, and Martensitic Stainless Steel, Ultrasonic Examination Thereof
ASTM A610-79 (2014)	Standard Test Methods for Sampling and Testing Ferroalloys for Determination of Size

Standard	Title
ASTM A612/A612M-12	Standard Specification for Pressure Vessel Plates, Carbon Steel, High Strength, for Moderate and Lower Temperature Service
ASTM A615/A615M-15a	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A618/A618M-04 (2010)	Standard Specification for Hot-Formed Welded and Seamless High-Strength Low-Alloy Structural Tubing
ASTM A623-11	Standard Specification for Tin Mill Products, General Requirements
ASTM A623M-11	Standard Specification for Tin Mill Products, General Requirements [Metric]
ASTM A624/A624M-13	Standard Specification for Tin Mill Products, Electrolytic Tin Plate, Single Reduced
ASTM A625/A625M-13	Standard Specification for Tin Mill Products, Black Plate, Single Reduced
ASTM A626/A626M-13	Standard Specification for Tin Mill Products, Electrolytic Tin Plate, Double Reduced
ASTM A627-03 (2011)	Standard Test Methods for Tool-Resisting Steel Bars, Flats, and Shapes for Detention and Correctional Facilities
ASTM A630-03 (2014)	Standard Test Methods for Determination of Tin Coating Weights for Electrolytic Tin Plate
ASTM A632-04 (2014)	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing (Small-Diameter) for General Service
ASTM A633/A633M-13	Standard Specification for Normalized High-Strength Low-Alloy Structural Steel Plates
ASTM A635/A635M-14	Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Alloy, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability, General Requirements for
ASTM A636-08 (2013)	Standard Specification for Nickel Oxide Sinter
ASTM A638/A638M-10	Standard Specification for Precipitation Hardening Iron Base Superalloy Bars, Forgings, and Forging Stock for High-Temperature Service
ASTM A640-97 (2014)	Standard Specification for Zinc-Coated Steel Strand for Messenger Support of Figure 8 Cable
ASTM A641/A641M-09a (2014)	Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
ASTM A644-14	Standard Terminology Relating to Iron Castings
ASTM A645/A645M-10	Standard Specification for Pressure Vessel Plates, 5% and 5½% Nickel Alloy Steels, Specially Heat Treated
ASTM A646/A646M-06 (2011)	Standard Specification for Premium Quality Alloy Steel Blooms and Billets for Aircraft and Aerospace Forgings
ASTM A648-12	Standard Specification for Steel Wire, Hard Drawn for Prestressing Concrete Pipe
ASTM A649/A649M-10 (2015)	Standard Specification for Forged Steel Rolls Used for Corrugating Paper Machinery
ASTM A650/A650M-13	Standard Specification for Tin Mill Products, Black Plate, Double Reduced
ASTM A653/A653M-13	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A656/A656M-13	Standard Specification for Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability
ASTM A657/A657M-13	Standard Specification for Tin Mill Products, Black Plate Electrolytic Chromium-Coated, Single and Double Reduced
ASTM A659/A659M-12	Standard Specification for Commercial Steel (CS), Sheet and Strip, Carbon (0.16 Maximum to 0.25 Maximum Percent), Hot-Rolled
ASTM A660/A660M-11	Standard Specification for Centrifugally Cast Carbon Steel Pipe for High-Temperature Service
ASTM A662/A662M-12	Standard Specification for Pressure Vessel Plates, Carbon-Manganese-Silicon Steel, for Moderate and Lower Temperature Service
ASTM A663/A663M-12	Standard Specification for Steel Bars, Carbon, Merchant Quality, Mechanical Properties
ASTM A664-15	Standard Practice for Identification of Standard Electrical Steel Grades in ASTM Specifications
ASTM A666-15	Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar
ASTM A667/A667M-87 (2012)	Standard Specification for Centrifugally Cast Dual Metal (Gray and White Cast Iron) Cylinders
ASTM A668/A668M-15	Standard Specification for Steel Forgings, Carbon and Alloy, for General Industrial Use
ASTM A671/A671M-14	Standard Specification for Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures
ASTM A672/A672M-14	Standard Specification for Electric-Fusion-Welded Steel Pipe for High-Pressure Service at Moderate Temperatures
ASTM A673/A673M-07 (2012)	Standard Specification for Sampling Procedure for Impact Testing of Structural Steel
ASTM A674-10 (2014)	Standard Practice for Polyethylene Encasement for Ductile Iron Pipe for Water or Other Liquids
ASTM A675/A675M-14	Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties
ASTM A677-12	Standard Specification for Nonoriented Electrical Steel Fully Processed Types
ASTM A679/A679M-06 (2012)	Standard Specification for Steel Wire, High Tensile Strength, Cold Drawn
ASTM A681-08	Standard Specification for Tool Steels Alloy
ASTM A683-05 (2010)	Standard Specification for Nonoriented Electrical Steel, Semiprocessed Types
ASTM A684/A684M-14	Standard Specification for Steel, Strip, High-Carbon, Cold-Rolled
ASTM A686-92 (2010)	Standard Specification for Tool Steel, Carbon
ASTM A688/A688M-15	Standard Specification for Seamless and Welded Austenitic Stainless Steel Feedwater Heater Tubes
ASTM A689-97 (2013)	Standard Specification for Carbon and Alloy Steel Bars for Springs
ASTM A690/A690M-13a	Standard Specification for High-Strength Low-Alloy Nickel, Copper, Phosphorus Steel H-Piles and Sheet Piling with Atmospheric Corrosion Resistance for Use in Marine Environments

Standard	Title
ASTM A691/A691M-09 (2014)	Standard Specification for Carbon and Alloy Steel Pipe, Electric-Fusion-Welded for High-Pressure Service at High Temperatures
ASTM A693-13	Standard Specification for Precipitation-Hardening Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
ASTM A694/A694M-14	Standard Specification for Carbon and Alloy Steel Forgings for Pipe Flanges, Fittings, Valves, and Parts for High-Pressure Transmission Service
ASTM A696-90a (2012)	Standard Specification for Steel Bars, Carbon, Hot-Wrought or Cold-Finished, Special Quality, for Pressure Piping Components
ASTM A697/A697M-13	Standard Test Method for Alternating Current Magnetic Properties of Laminated Core Specimen Using Voltmeter-Ammeter-Wattmeter Methods
ASTM A698/A698M-15	Standard Test Method for Magnetic Shield Efficiency in Attenuating Alternating Magnetic Fields
ASTM A700-14	Standard Guide for Packaging, Marking, and Loading Methods for Steel Products for Shipment
ASTM A701/A701M-10	Standard Specification for Ferromanganese-Silicon
ASTM A702-13	Standard Specification for Steel Fence Posts, Hot Wrought
ASTM A703/A703M-15	Standard Specification for Steel Castings, General Requirements, for Pressure-Containing Parts
ASTM A704/A704M-06 (2011)	Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement
ASTM A705/A705M-13	Standard Specification for Age-Hardening Stainless Steel Forgings
ASTM A706/A706M-14	Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
ASTM A707/A707M-14	Standard Specification for Forged Carbon and Alloy Steel Flanges for Low-Temperature Service
ASTM A709/A709M-13a	Standard Specification for Structural Steel for Bridges
ASTM A710/A710M-02 (2013)	Standard Specification for Precipitation-Strengthened Low-Carbon Nickel-Copper-Chromium-Molybdenum-Columbium Alloy Structural Steel Plates
ASTM A711/A711M-07 (2012)	Standard Specification for Steel Forging Stock
ASTM A712-14	Standard Test Method for Electrical Resistivity of Soft Magnetic Alloys
ASTM A713-04 (2010)	Standard Specification for Steel Wire, High-Carbon Spring, for Heat-Treated Components
ASTM A716-08 (2014)	Standard Specification for Ductile Iron Culvert Pipe
ASTM A717/A717M-12	Standard Test Method for Surface Insulation Resistivity of Single-Strip Specimens
ASTM A719/A719M-14	Standard Test Method for Lamination Factor of Magnetic Materials
ASTM A720/A720M-02 (2011)	Standard Test Method for Ductility of Nonoriented Electrical Steel
ASTM A721/A721M-02 (2011)	Standard Test Method for Ductility of Oriented Electrical Steel
ASTM A722/A722M-15	Standard Specification for High-Strength Steel Bar for Prestressing Concrete
ASTM A723/A723M-10 (2015)	Standard Specification for Alloy Steel Forgings for High-Strength Pressure Component Application
ASTM A724/A724M-09 (2013)	Standard Specification for Pressure Vessel Plates, Carbon-Manganese-Silicon Steel, Quenched and Tempered, for Welded Pressure Vessels
ASTM A726-05 (2010)	Standard Specification for Cold-Rolled Magnetic Lamination Quality Steel, Semiprocessed Types
ASTM A727/A727M-14	Standard Specification for Carbon Steel Forgings for Piping Components with Inherent Notch Toughness
ASTM A729/A729M-15	Standard Specification for Carbon and Alloy Steel Axles, Heat-Treated, for Mass Transit and Electric Railway Service
ASTM A732/A732M-14	Standard Specification for Castings, Investment, Carbon and Low Alloy Steel for General Application, and Cobalt Alloy for High Strength at Elevated Temperatures
ASTM A733-13	Standard Specification for Welded and Seamless Carbon Steel and Austenitic Stainless Steel Pipe Nipples
ASTM A734/A734M-12	Standard Specification for Pressure Vessel Plates, Alloy Steel and High-Strength Low-Alloy Steel, Quenched-and-Tempered
ASTM A735/A735M-12	Standard Specification for Pressure Vessel Plates, Low-Carbon Manganese-Molybdenum-Columbium Alloy Steel, for Moderate and Lower Temperature Service
ASTM A736/A736M-12	Standard Specification for Pressure Vessel Plates, Low-Carbon Age-Hardening Nickel-Copper-Chromium-Molybdenum-Columbium Alloy Steel
ASTM A737/A737M-09 (2013)	Standard Specification for Pressure Vessel Plates, High-Strength, Low-Alloy Steel
ASTM A738/A738M-12a	Standard Specification for Pressure Vessel Plates, Heat-Treated, Carbon-Manganese-Silicon Steel, for Moderate and Lower Temperature Service
ASTM A739-90a (2012)	Standard Specification for Steel Bars, Alloy, Hot-Wrought, for Elevated Temperature or Pressure-Containing Parts, or Both
ASTM A740-98 (2014)	Standard Specification for Hardware Cloth (Woven or Welded Galvanized Steel Wire Fabric)
ASTM A741-11	Standard Specification for Metallic-Coated Steel Wire Rope and Fittings for Highway Guardrail
ASTM A742/A742M-13	Standard Specification for Steel Sheet, Metallic Coated and Polymer Precoated for Corrugated Steel Pipe
ASTM A743/A743M-13a	Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application
ASTM A744/A744M-13	Standard Specification for Castings, Iron-Chromium-Nickel, Corrosion Resistant, for Severe Service
ASTM A745/A745M-15	Standard Practice for Ultrasonic Examination of Austenitic Steel Forgings
ASTM A746-09 (2014)	Standard Specification for Ductile Iron Gravity Sewer Pipe
ASTM A747/A747M-12	Standard Specification for Steel Castings, Stainless, Precipitation Hardening

Standard	Title
ASTM A748/A748M-87 (2012)	Standard Specification for Statically Cast Chilled White Iron-Gray Iron Dual Metal Rolls for Pressure Vessel Use
ASTM A749/A749M-14	Standard Specification for Steel, Strip, Carbon and High-Strength, Low-Alloy, Hot-Rolled, General Requirements for
ASTM A751-14a	Standard Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products
ASTM A753-08 (2013)	Standard Specification for Wrought Nickel-Iron Soft Magnetic Alloys (UNS K94490, K94840, N14076, N14080)
ASTM A754/A754M-11	Standard Test Method for Coating Weight (Mass) of Metallic Coatings on Steel by X-Ray Fluorescence
ASTM A755/A755M-15	Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products
ASTM A756-09 (2014)	Standard Specification for Stainless Anti-Friction Bearing Steel
ASTM A757/A757M-15	Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing and Other Applications, for Low-Temperature Service
ASTM A758/A758M-14	Standard Specification for Wrought-Carbon Steel Butt-Welding Piping Fittings with Improved Notch Toughness
ASTM A759-10	Standard Specification for Carbon Steel Crane Rails
ASTM A760/A760M-15	Standard Specification for Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains
ASTM A761/A761M-15	Standard Specification for Corrugated Steel Structural Plate, Zinc-Coated, for Field-Bolted Pipe, Pipe-Arches, and Arches
ASTM A762/A762M-15	Standard Specification for Corrugated Steel Pipe, Polymer Precoated for Sewers and Drains
ASTM A763-15	Standard Practices for Detecting Susceptibility to Intergranular Attack in Ferritic Stainless Steels
ASTM A764-07 (2012)	Standard Specification for Metallic Coated Carbon Steel Wire, Coated at Size and Drawn to Size for Mechanical Springs
ASTM A765/A765M-07 (2012)	Standard Specification for Carbon Steel and Low-Alloy Steel Pressure-Vessel-Component Forgings with Mandatory Toughness Requirements
ASTM A767/A767M-09	Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement
ASTM A768/A768M-05 (2015)	Standard Specification for Vacuum-Treated 12% Chromium Alloy Steel Forgings for Turbine Rotors and Shafts
ASTM A769/A769M-05 (2010)	Standard Specification for Carbon and High-Strength Electric Resistance Forge-Welded Steel Structural Shapes
ASTM A770/A770M-03 (2012)	Standard Specification for Through-Thickness Tension Testing of Steel Plates for Special Applications
ASTM A772/A772M-00 (2011)	Standard Test Method for AC Magnetic Permeability of Materials Using Sinusoidal Current
ASTM A773/A773M-14	Standard Test Method for Direct Current Magnetic Properties of Low Coercivity Magnetic Materials Using Hysteresigraphs
ASTM A774/A774M-14	Standard Specification for As-Welded Wrought Austenitic Stainless Steel Fittings for General Corrosive Service at Low and Moderate Temperatures
ASTM A775/A775M-07b (2014)	Standard Specification for Epoxy-Coated Steel Reinforcing Bars
ASTM A778-01 (2009)	Standard Specification for Welded, Unannealed Austenitic Stainless Steel Tubular Products
ASTM A779/A779M-12	Standard Specification for Steel Strand, Seven-Wire, Uncoated, Compacted for Prestressed Concrete
ASTM A780/A780M-09 (2015)	Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM A781/A781M-14b	Standard Specification for Castings, Steel and Alloy, Common Requirements, for General Industrial Use
ASTM A786/A786M-05 (2009)	Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates
ASTM A787/A787M-15	Standard Specification for Electric-Resistance-Welded Metallic-Coated Carbon Steel Mechanical Tubing
ASTM A788/A788M-15	Standard Specification for Steel Forgings, General Requirements
ASTM A789/A789M-14	Standard Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Tubing for General Service
ASTM A790/A790M-14a	Standard Specification for Seamless and Welded Ferritic/Austenitic Stainless Steel Pipe
ASTM A792/A792M-10	Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
ASTM A793-96 (2014)	Standard Specification for Rolled Floor Plate, Stainless Steel
ASTM A794/A794M-12	Standard Specification for Commercial Steel (CS), Sheet, Carbon (0.16% Maximum to 0.25% Maximum), Cold-Rolled
ASTM A795/A795M-13	Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use
ASTM A796/A796M-15	Standard Practice for Structural Design of Corrugated Steel Pipe, Pipe-Arches, and Arches for Storm and Sanitary Sewers and Other Buried Applications
ASTM A798/A798M-13	Standard Practice for Installing Factory-Made Corrugated Steel Pipe for Sewers and Other Applications
ASTM A799/A799M-10	Standard Practice for Steel Castings, Stainless, Instrument Calibration, for Estimating Ferrite Content
ASTM A800/A800M-14	Standard Practice for Steel Casting, Austenitic Alloy, Estimating Ferrite Content Thereof
ASTM A801-14	Standard Specification for Wrought Iron-Cobalt High Magnetic Saturation Alloys (UNS R30005 and K92650)
ASTM A802-95 (2010)	Standard Practice for Steel Castings, Surface Acceptance Standards, Visual Examination
ASTM A803/A803M-12	Standard Specification for Seamless and Welded Ferritic Stainless Steel Feedwater Heater Tubes

Standard	Title
ASTM A804/A804M-04 (2009)	Standard Test Methods for Alternating-Current Magnetic Properties of Materials at Power Frequencies Using Sheet-Type Test Specimens
ASTM A805/A805M-09	Standard Specification for Steel, Flat Wire, Carbon, Cold-Rolled
ASTM A807/A807M-13	Standard Practice for Installing Corrugated Steel Structural Plate Pipe for Sewers and Other Applications
ASTM A809-08 (2013)	Standard Specification for Aluminum-Coated (Aluminized) Carbon Steel Wire
ASTM A810-01 (2014)	Standard Specification for Zinc-Coated (Galvanized) Steel Pipe Winding Mesh
ASTM A811-15	Standard Specification for Soft Magnetic Iron Parts Fabricated by Powder Metallurgy Techniques
ASTM A813/A813M-14	Standard Specification for Single- or Double-Welded Austenitic Stainless Steel Pipe
ASTM A814/A814M-15	Standard Specification for Cold-Worked Welded Austenitic Stainless Steel Pipe
ASTM A815/A815M-14	Standard Specification for Wrought Ferritic, Ferritic/Austenitic, and Martensitic Stainless Steel Piping Fittings
ASTM A817-12	Standard Specification for Metallic-Coated Steel Wire for Chain-Link Fence Fabric and Marcelled Tension Wire
ASTM A818-06 (2010)	Standard Specification for Coppered Carbon Steel Wire
ASTM A820/A820M-11	Standard Specification for Steel Fibers for Fiber-Reinforced Concrete
ASTM A821/A821M-15	Standard Specification for Steel Wire, Hard Drawn for Prestressing Concrete Tanks
ASTM A822/A822M-04 (2010)	Standard Specification for Seamless Cold-Drawn Carbon Steel Tubing for Hydraulic System Service
ASTM A823-99 (2012)	Standard Specification for Statically Cast Permanent Mold Gray Iron Castings
ASTM A824-01 (2012)	Standard Specification for Metallic-Coated Steel Marcelled Tension Wire for Use With Chain Link Fence
ASTM A827/A827M-14	Standard Specification for Plates, Carbon Steel, for Forging and Similar Applications
ASTM A829/A829M-14	Standard Specification for Alloy Structural Steel Plates
ASTM A830/A830M-14	Standard Specification for Plates, Carbon Steel, Structural Quality, Furnished to Chemical Composition Requirements
ASTM A832/A832M-10	Standard Specification for Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum-Vanadium
ASTM A833-08a (2014)	Standard Practice for Indentation Hardness of Metallic Materials by Comparison Hardness Testers
ASTM A834-95 (2011)	Standard Specification for Common Requirements for Iron Castings for General Industrial Use
ASTM A835/A835M-10	Standard Specification for Sizes of Ferroalloys and Alloy Additives
ASTM A836/A836M-14	Standard Specification for Titanium-Stabilized Carbon Steel Forgings for Glass-Lined Piping and Pressure Vessel Service
ASTM A837/A837M-06 (2011)	Standard Specification for Steel Forgings, Alloy, for Carburizing Applications
ASTM A838-02 (2013)	Standard Specification for Free-Machining Ferritic Stainless Soft Magnetic Alloy Bar for Relay Applications
ASTM A839-15	Standard Specification for Iron-Phosphorus Powder Metallurgy Parts for Soft Magnetic Applications
ASTM A841/A841M-13	Standard Specification for Steel Plates for Pressure Vessels, Produced by Thermo-Mechanical Control Process (TMCP)
ASTM A842-11a	Standard Specification for Compacted Graphite Iron Castings
ASTM A844/A844M-09	Standard Specification for Steel Plates, 9% Nickel Alloy, for Pressure Vessels, Produced by the Direct-Quenching Process
ASTM A847/A847M-14	Standard Specification for Cold-Formed Welded and Seamless High-Strength, Low Alloy Structural Tubing with Improved Atmospheric Corrosion Resistance
ASTM A848-01 (2011)	Standard Specification for Low-Carbon Magnetic Iron
ASTM A849-15	Standard Specification for Post-Applied Coatings, Pavings, and Linings for Corrugated Steel Sewer and Drainage Pipe
ASTM A853-04 (2010)	Standard Specification for Steel Wire, Carbon, for General Use
ASTM A854/A854M-08 (2013)	Standard Specification for Metallic-Coated Steel Smooth High-Tensile Fence and Trellis Wire
ASTM A855/A855M-03 (2014)	Standard Specification for Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Wire Strand
ASTM A856/A856M-03 (2014)	Standard Specification for Zinc-5% Aluminum-Mischmetal Alloy-Coated Carbon Steel Wire
ASTM A857/A857M-07 (2013)	Standard Specification for Steel Sheet Piling, Cold Formed, Light Gage
ASTM A858/A858M-14	Standard Specification for Heat-Treated Carbon Steel Fittings for Low-Temperature and Corrosive Service
ASTM A859/A859M-04 (2014)	Standard Specification for Age-Hardening Alloy Steel Forgings for Pressure Vessel Components
ASTM A860/A860M-14	Standard Specification for Wrought High-Strength Ferritic Steel Butt-Welding Fittings
ASTM A861-04 (2013)	Standard Specification for High-Silicon Iron Pipe and Fittings
ASTM A862/A862M-98 (2014)	Standard Practice for Application of Asphalt Coatings to Corrugated Steel Sewer and Drainage Pipe
ASTM A865/A865M-06 (2012)	Standard Specification for Threaded Couplings, Steel, Black or Zinc-Coated (Galvanized) Welded or Seamless, for Use in Steel Pipe Joints
ASTM A866-14	Standard Specification for Medium Carbon Anti-Friction Bearing Steel
ASTM A867-03 (2013)	Standard Specification for Iron-Silicon Relay Steels
ASTM A871/A871M-14	Standard Specification for High-Strength Low-Alloy Structural Steel Plate With Atmospheric Corrosion Resistance
ASTM A872/A872M-14	Standard Specification for Centrifugally Cast Ferritic/Austenitic Stainless Steel Pipe for Corrosive Environments
ASTM A874/A874M-98 (2014)	Standard Specification for Ferritic Ductile Iron Castings Suitable for Low-Temperature Service
ASTM A875/A875M-13	Standard Specification for Steel Sheet, Zinc-5% Aluminum Alloy-Coated by the Hot-Dip Process

Standard	Title
ASTM A876-12	Standard Specification for Flat-Rolled, Grain-Oriented, Silicon-Iron, Electrical Steel, Fully Processed Types
ASTM A877/A877M-10	Standard Specification for Steel Wire, Chromium-Silicon Alloy, Chrome-Silicon-Vanadium Alloy Valve Spring Quality
ASTM A878/A878M-05 (2011)	Standard Specification for Steel Wire, Modified Chromium Vanadium Valve Spring Quality
ASTM A879/A879M-12	Standard Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
ASTM A881/A881M-10	Standard Specification for Steel Wire, Indented, Low-Relaxation for Prestressed Concrete Railroad Ties
ASTM A882/A882M-04a (2010)	Standard Specification for Filled Epoxy-Coated Seven-Wire Prestressing Steel Strand
ASTM A884/A884M-14	Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement
ASTM A886/A886M-12	Standard Specification for Steel Strand, Indented, Seven-Wire Stress-Relieved for Prestressed Concrete
ASTM A887-89 (2014)	Standard Specification for Borated Stainless Steel Plate, Sheet, and Strip for Nuclear Application
ASTM A888-13a	Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications
ASTM A889/A889M-14	Standard Test Method for Alternating-Current Magnetic Properties of Materials at Low Magnetic Flux Density Using the Voltmeter-Ammeter-Wattmeter-Varmeter Method and 25-cm Epstein Frame
ASTM A890/A890M-13	Standard Specification for Castings, Iron-Chromium-Nickel-Molybdenum Corrosion-Resistant, Duplex (Austenitic/Ferritic) for General Application
ASTM A891/A891M-10 (2015)	Standard Specification for Precipitation Hardening Iron Base Superalloy Forgings for Turbine Rotor Disks and Wheels
ASTM A892-09 (2014)	Standard Guide for Defining and Rating the Microstructure of High Carbon Bearing Steels
ASTM A893/A893M-03 (2015)	Standard Test Method for Complex Dielectric Constant of Nonmetallic Magnetic Materials at Microwave Frequencies
ASTM A894/A894M-00 (2011)	Standard Test Method for Saturation Magnetization or Induction of Nonmetallic Magnetic Materials
ASTM A895-89 (2009)	Standard Specification for Free-Machining Stainless Steel Plate, Sheet, and Strip
ASTM A896/A896M-09 (2014)	Standard Practice for Conducting Case Studies on Galvanized Structures
ASTM A897/A897M-15	Standard Specification for Austempered Ductile Iron Castings
ASTM A898/A898M-07 (2012)	Standard Specification for Straight Beam Ultrasonic Examination of Rolled Steel Structural Shapes
ASTM A899-91 (2014)	Standard Specification for Steel Wire, Epoxy-Coated
ASTM A900/A900M-01 (2012)	Standard Test Method for Lamination Factor of Amorphous Magnetic Strip
ASTM A901-12	Standard Specification for Amorphous Magnetic Core Alloys, Semi-Processed Types
ASTM A902-15	Standard Terminology Relating to Metallic Coated Steel Products
ASTM A903/A903M-99 (2012)	Standard Specification for Steel Castings, Surface Acceptance Standards, Magnetic Particle and Liquid Penetrant Inspection
ASTM A904-14	Standard Specification for 50 Nickel-50 Iron Powder Metallurgy Soft Magnetic Parts
ASTM A905-04 (2010)	Standard Specification for Steel Wire, Pressure Vessel Winding
ASTM A906/A906M-02 (2010)	Standard Specification for Grade 80 and Grade 100 Alloy Steel Chain Slings for Overhead Lifting
ASTM A908-03 (2013)	Standard Specification for Stainless Steel Needle Tubing
ASTM A909/A909M-06 (2011)	Standard Specification for Steel Forgings, Microalloy, for General Industrial Use
ASTM A910/A910M-12	Standard Specification for Uncoated, Weldless, 2-Wire and 3-Wire Steel Strand for Prestressed Concrete
ASTM A911/A911M-11	Standard Specification for Uncoated, Stress-Relieved Steel Bars for Prestressed Concrete Railroad Ties
ASTM A912/A912M-11	Standard Test Method for Alternating-Current Magnetic Properties of Amorphous Materials at Power Frequencies Using Wattmeter-Ammeter-Voltmeter Method with Toroidal Specimens
ASTM A913/A913M-15	Standard Specification for High-Strength Low-Alloy Steel Shapes of Structural Quality, Produced by Quenching and Self-Tempering Process (QST)
ASTM A914/A914M-92 (2011)	Standard Specification for Steel Bars Subject to Restricted End-Quench Hardenability Requirements
ASTM A915/A915M-08 (2013)	Standard Specification for Steel Castings, Carbon, and Alloy, Chemical Requirements Similar to Standard Wrought Grades
ASTM A917-08 (2015)	Standard Specification for Steel Sheet, Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface (General Requirements)
ASTM A918-06 (2011)	Standard Specification for Steel Sheet, Zinc-Nickel Alloy Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
ASTM A920/A920M-14	Standard Specification for Steel Bars, Microalloy, Hot-Wrought, Special Quality, Mechanical Properties
ASTM A921/A921M-93 (2011)	Standard Specification for Steel Bars, Microalloy, Hot-Wrought, Special Quality, for Subsequent Hot Forging
ASTM A922-05 (2010)	Standard Specification for Silicon Metal
ASTM A923-14	Standard Test Methods for Detecting Detrimental Intermetallic Phase in Duplex Austenitic/Ferritic Stainless Steels
ASTM A924/A924M-14	Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
ASTM A925-03 (2014)	Standard Specification for Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Overhead Ground Wire Strand

Standard	Title
ASTM A926-03 (2014)	Standard Test Method for Comparing the Abrasion Resistance of Coating Materials for Corrugated Metal Pipe
ASTM A927/A927M-11	Standard Test Method for Alternating-Current Magnetic Properties of Toroidal Core Specimens Using the Voltmeter-Ammeter-Wattmeter Method
ASTM A928/A928M-14	Standard Specification for Ferritic/Austenitic (Duplex) Stainless Steel Pipe Electric Fusion Welded with Addition of Filler Metal
ASTM A929/A929M-01 (2013)	Standard Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe
ASTM A930-09 (2014)	Standard Practice for Life-Cycle Cost Analysis of Corrugated Metal Pipe Used for Culverts, Storm Sewers, and Other Buried Conduits
ASTM A931-08 (2013)	Standard Test Method for Tension Testing of Wire Ropes and Strand
ASTM A932/A932M-01 (2012)	Standard Test Method for Alternating-Current Magnetic Properties of Amorphous Materials at Power Frequencies Using Wattmeter-Ammeter-Voltmeter Method with Sheet Specimens
ASTM A933/A933M-14	Standard Specification for Vinyl-Coated Steel Wire and Welded Wire Reinforcement
ASTM A934/A934M-13	Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars
ASTM A937/A937M-12	Standard Test Method for Determining Interlaminar Resistance of Insulating Coatings Using Two Adjacent Test Surfaces
ASTM A938-07 (2013)	Standard Test Method for Torsion Testing of Wire
ASTM A939/A939M-15	Standard Practice for Ultrasonic Examination from Bored Surfaces of Cylindrical Forgings
ASTM A940/A940M-06 (2011)	Standard Specification for Vacuum Treated Steel Forgings, Alloy, Differentially Heat Treated, for Turbine Rotors
ASTM A941-13b	Standard Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys
ASTM A942/A942M-95 (2012)	Standard Specification for Centrifugally Cast White Iron/Gray Iron Dual Metal Abrasion-Resistant Roll Shells
ASTM A943/A943M-01 (2014)	Standard Specification for Spray-Formed Seamless Austenitic Stainless Steel Pipes
ASTM A944-10	Standard Test Method for Comparing Bond Strength of Steel Reinforcing Bars to Concrete Using Beam-End Specimens
ASTM A945/A945M-06 (2011)	Standard Specification for High-Strength Low-Alloy Structural Steel Plate with Low Carbon and Restricted Sulfur for Improved Weldability, Formability, and Toughness
ASTM A947M-13	Standard Specification for Textured Stainless Steel Sheet [Metric]
ASTM A949/A949M-01 (2014)	Standard Specification for Spray-Formed Seamless Ferritic/Austenitic Stainless Steel Pipe
ASTM A950/A950M-11	Standard Specification for Fusion Bonded Epoxy-Coated Structural Steel H-Piles and Sheet Piling
ASTM A951/A951M-14	Standard Specification for Steel Wire for Masonry Joint Reinforcement
ASTM A952/A952M-02 (2010)	Standard Specification for Forged Grade 80 and Grade 100 Steel Lifting Components and Welded Attachment Links
ASTM A955M/ A 955M-15	Standard Specification for Deformed and Plain Stainless-Steel Bars for Concrete Reinforcement
ASTM A956-12	Standard Test Method for Leeb Hardness Testing of Steel Products
ASTM A957/A957M-15	Standard Specification for Investment Castings, Steel and Alloy, Common Requirements, for General Industrial Use
ASTM A958/A958M-14	Standard Specification for Steel Castings, Carbon, and Alloy, with Tensile Requirements, Chemical Requirements Similar to Standard Wrought Grades
ASTM A959-11	Standard Guide for Specifying Harmonized Standard Grade Compositions for Wrought Stainless Steels
ASTM A960/A960M-14a	Standard Specification for Common Requirements for Wrought Steel Piping Fittings
ASTM A961/A961M-14	Standard Specification for Common Requirements for Steel Flanges, Forged Fittings, Valves, and Parts for Piping Applications
ASTM A962/A962M-14a	Standard Specification for Common Requirements for Bolting Intended for Use at Any Temperature from Cryogenic to the Creep Range
ASTM A964/A964M-03 (2011)	Standard Specification for Corrugated Steel Box Culverts
ASTM A965/A965M-14	Standard Specification for Steel Forgings, Austenitic, for Pressure and High Temperature Parts
ASTM A966/A966M-15	Standard Practice for Magnetic Particle Examination of Steel Forgings Using Alternating Current
ASTM A967/A967M-13	Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts
ASTM A968/A968M-96 (2014)	Standard Specification for Chromium, Chromium-Nickel, and Silicon Alloy Steel Bars and Shapes for Corrosion and Heat-Resisting Service
ASTM A970/A970M-15	Standard Specification for Headed Steel Bars for Concrete Reinforcement
ASTM A971/A971M-10	Standard Test Method for Measuring Edge Taper and Crown of Flat-Rolled Electrical Steel Coils
ASTM A972/A972M-00 (2010)	Standard Specification for Fusion Bonded Epoxy-Coated Pipe Piles
ASTM A973/A973M-07 (2012)	Standard Specification for Grade 100 Alloy Steel Chain
ASTM A974-97 (2011)	Standard Specification for Welded Wire Fabric Gabions and Gabion Mattresses (Metallic Coated or Polyvinyl Chloride (PVC) Coated)
ASTM A975-11	Standard Specification for Double-Twisted Hexagonal Mesh Gabions and Revet Mattresses (Metallic-Coated Steel Wire or Metallic-Coated Steel Wire With Poly(Vinyl Chloride) (PVC) Coating)
ASTM A976-13	Standard Classification of Insulating Coatings for Electrical Steels by Composition, Relative Insulating Ability and Application
ASTM A977/A977M-07 (2013)	Standard Test Method for Magnetic Properties of High-Coercivity Permanent Magnet Materials Using Hysteresigraphs

Standard	Title
ASTM A978/A978M-08 (2013)	Standard Specification for Composite Ribbed Steel Pipe, Precoated and Polyethylene Lined for Gravity Flow Sanitary Sewers, Storm Sewers, and Other Special Applications
ASTM A979/A979M-03 (2014)	Standard Specification for Concrete Pavements and Linings Installed in Corrugated Steel Structures in the Field
ASTM A980/A980M-11	Standard Specification for Steel, Sheet, Carbon, Ultra High Strength Cold Rolled
ASTM A981/A981M-11	Standard Test Method for Evaluating Bond Strength for 0.600-in. [15.24-mm] Diameter Steel Prestressing Strand, Grade 270 [1860], Uncoated, Used in Prestressed Ground Anchors
ASTM A982/A982M-10 (2015)	Standard Specification for Steel Forgings, Stainless, for Compressor and Turbine Airfoils
ASTM A983/A983M-06 (2011)	Standard Specification for Continuous Grain Flow Forged Carbon and Alloy Steel Crankshafts for Medium Speed Diesel Engines
ASTM A985/A985M-14	Standard Specification for Steel Investment Castings General Requirements, for Pressure-Containing Parts
ASTM A986/A986M-01 (2011)	Standard Specification for Magnetic Particle Examination of Continuous Grain Flow Crankshaft Forgings
ASTM A987/A987M-09 (2014)	Standard Practice for Measuring Shape Characteristics of Tin Mill Products
ASTM A988/A988M-15	Standard Specification for Hot Isostatically-Pressed Stainless Steel Flanges, Fittings, Valves, and Parts for High Temperature Service
ASTM A989/A989M-15	Standard Specification for Hot Isostatically-Pressed Alloy Steel Flanges, Fittings, Valves, and Parts for High Temperature Service
ASTM A990/A990M-14a	Standard Specification for Castings, Iron-Nickel-Chromium and Nickel Alloys, Specially Controlled for Pressure Retaining Parts for Corrosion Service
ASTM A991/A991M-10 (2015)	Standard Test Method for Conducting Temperature Uniformity Surveys of Furnaces Used to Heat Treat Steel Products
ASTM A992/A992M-11	Standard Specification for Structural Steel Shapes
ASTM A994-13	Standard Guide for Editorial Procedures and Form of Product Specifications for Steel, Stainless Steel, and Related Alloys
ASTM A995/A995M-13	Standard Specification for Castings, Austenitic-Ferritic (Duplex) Stainless Steel, for Pressure-Containing Parts
ASTM A996/A996M-15	Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
ASTM A997-08 (2012)	Standard Practice for Investment Castings, Surface Acceptance Standards, Visual Examination
ASTM A998/A998M-12	Standard Practice for Structural Design of Reinforcements for Fittings in Factory-Made Corrugated Steel Pipe for Sewers and Other Applications
ASTM A999/A999M-14	Standard Specification for General Requirements for Alloy and Stainless Steel Pipe
ASTM A1000/A1000M-11	Standard Specification for Steel Wire, Carbon and Alloy Specialty Spring Quality
ASTM A1001-01 (2010)	Standard Specification for High Strength Steel Castings in Heavy Sections
ASTM A1002-10	Standard Specification for Castings, Nickel-Aluminum Ordered Alloy
ASTM A1003/A1003M-15	Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members
ASTM A1004/A1004M-99 (2014)	Standard Practice for Establishing Conformance to the Minimum Expected Corrosion Characteristics of Metallic, Painted-Metallic, and Nonmetallic-Coated Steel Sheet Intended for Use as Cold Formed Framing Members
ASTM A1007-15	Standard Specification for Carbon Steel Wire for Wire Rope
ASTM A1008/A1008M-15	Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
ASTM A1009-05 (2010)	Standard Specification for Soft Magnetic MnZn Ferrite Core Materials for High Frequency (10 kHz-1 MHz) Power Transformer and Filter Inductor Applications
ASTM A1010/ A 1010M-13	Standard Specification for Higher-Strength Martensitic Stainless Steel Plate, Sheet, and Strip
ASTM A1011/A1011M-14	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
ASTM A1012-10	Standard Specification for Seamless and Welded Ferritic, Austenitic and Duplex Alloy Steel Condenser and Heat Exchanger Tubes With Integral Fins
ASTM A1013-00 (2013)	Standard Test Method for High-Frequency (10 kHz-1 MHz) Core Loss of Soft Magnetic Core Components at Controlled Temperatures Using the Voltmeter-Ammeter-Wattmeter Method
ASTM A1014/A1014M-10	Standard Specification for Precipitation-Hardening Bolting (UNS N07718) for High Temperature Service
ASTM A1015-01 (2014)	Standard Guide for Videoborescoping of Tubular Products for Sanitary Applications
ASTM A1016/A1016M-14	Standard Specification for General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel, and Stainless Steel Tubes
ASTM A1017/A1017M-11	Standard Specification for Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum-Tungsten
ASTM A1018/A1018M-10	Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
ASTM A1020/A1020M-02 (2012)	Standard Specification for Steel Tubes, Carbon and Carbon Manganese, Fusion Welded, for Boiler, Superheater, Heat Exchanger and Condenser Applications
ASTM A1021/A1021M-05 (2015)	Standard Specification for Martensitic Stainless Steel Forgings and Forging Stock for High-Temperature Service

Standard	Title
ASTM A1022/A1022M-15	Standard Specification for Deformed and Plain Stainless Steel Wire and Welded Wire for Concrete Reinforcement
ASTM A1023/A1023M-15	Standard Specification for Stranded Carbon Steel Wire Ropes for General Purposes
ASTM A1024/A1024M-02 (2012)	Standard Specification for Steel Line Pipe, Black, Plain-End, Seamless
ASTM A1025/A1025M-10	Standard Specification for Ferroalloys and Other Alloying Materials, General Requirements
ASTM A1028-03 (2015)	Standard Specification for Stainless Steel Bars for Compressor and Turbine Airfoils
ASTM A1030/A1030M-11	Standard Practice for Measuring Flatness Characteristics of Steel Sheet Products
ASTM A1031/A1031M-12	Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Alloy, Drawing Steel and Structural Steel, Hot-Rolled
ASTM A1032-15	Standard Test Method for Hydrogen Embrittlement Resistance for Steel Wire Hard Drawn Used for Prestressed Concrete Pipe
ASTM A1033-10 (2015)	Standard Practice for Quantitative Measurement and Reporting of Hypoeutectoid Carbon and Low-Alloy Steel Phase Transformations
ASTM A1034/A1034M-10a	Standard Test Methods for Testing Mechanical Splices for Steel Reinforcing Bars
ASTM A1035/A1035M-15	Standard Specification for Deformed and Plain, Low-Carbon, Chromium, Steel Bars for Concrete Reinforcement
ASTM A1036-04 (2009)	Standard Guide for Measuring Power Frequency Magnetic Properties of Flat-Rolled Electrical Steels Using Small Single Sheet Testers
ASTM A1037/A1037M-05 (2012)	Standard Specification for Steel Line Pipe, Black, Furnace-Butt-Welded
ASTM A1038-13	Standard Test Method for Portable Hardness Testing by the Ultrasonic Contact Impedance Method
ASTM A1039/A1039M-13	Standard Specification for Steel, Sheet, Hot Rolled, Carbon, Commercial, Structural, and High-Strength Low-Alloy, Produced by the Twin-Roll Casting Process
ASTM A1040-10	Standard Guide for Specifying Harmonized Standard Grade Compositions for Wrought Carbon, Low-Alloy, and Alloy Steels
ASTM A1043/A1043M-14	Standard Specification for Structural Steel with Low Yield to Tensile Ratio for Use in Buildings
ASTM A1044/A1044M-15	Standard Specification for Steel Stud Assemblies for Shear Reinforcement of Concrete
ASTM A1045-10 (2014)	Standard Specification for Flexible Poly (Vinyl Chloride) (PVC) Gaskets used in Connection of Vitreous China Plumbing Fixtures to Sanitary Drainage System
ASTM A1046/A1046M-14	Standard Specification for Steel Sheet, Zinc-Aluminum-Magnesium Alloy-Coated by the Hot-Dip Process
ASTM A1047/A1047M-05 (2014)	Standard Test Method for Pneumatic Leak Testing of Tubing
ASTM A1048/A1048M-06 (2011)	Standard Specification for Pressure Vessel Forgings, Alloy Steel, Higher Strength Chromium-Molybdenum-Tungsten for Elevated Temperature Service
ASTM A1049/A1049M-10 (2015)	Standard Specification for Stainless Steel Forgings, Ferritic/Austenitic (Duplex), for Pressure Vessels and Related Components
ASTM A1053/A1053M-12	Standard Specification for Welded Ferritic-Martensitic Stainless Steel Pipe
ASTM A1054-14	Standard Specification for Sintered Ceramic Ferrite Permanent Magnets
ASTM A1055/A1055M-10	Standard Specification for Zinc and Epoxy Duel-Coated Steel Reinforcing Bars
ASTM A1056-12	Standard Specification for Cast Iron Couplings Used for Joining Hubless Cast Iron Soil Pipe and Fittings
ASTM A1057/A1057-08 (2014)	Standard Specification for Steel, Structural Tubing, Cold Formed, Welded, Carbon, Zinc-Coated (Galvanized) by the Hot-Dip Process
ASTM A1058-14	Standard Test Methods for Mechanical Testing of Steel Products-Metric
ASTM A1059/A1059M-08 (2013)	Standard Specification for Zinc Alloy Thermo-Diffusion Coatings (TDC) on Steel Fasteners, Hardware, and Other Products
ASTM A1060/A1060M-14	Standard Specification for Zinc-Coated (Galvanized) Steel Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM A1061/A1061M-09	Standard Test Methods for Testing Multi-Wire Steel Strand
ASTM A1062-10	Standard Specification for Steel Castings Sampling
ASTM A1063/A1063M-11a	Standard Specification for Steel Sheet, Twin-Rolled Cast, Zinc-Coated (Galvanized) by the Hot-Dip Process
ASTM A1064/A1064M-15	Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM A1065/A1065M-15	Standard Specification for Cold-Formed Electric-Fusion (Arc) Welded High-Strength Low-Alloy Structural Tubing in Shapes, with 50 ksi [345 MPa] Minimum Yield Point
ASTM A1066/A1066M-11	Standard Specification for High-Strength Low-Alloy Structural Steel Plate Produced by Thermo-Mechanical Controlled Process (TMCP)
ASTM A1067/A1067M-12a	Standard Specification for Test Coupons for Steel Castings
ASTM A1068-10 (2015)	Standard Practice for Life-Cycle Cost Analysis of Corrosion Protection Systems on Iron and Steel Products
ASTM A1069/A1069M-11	Standard Specifications for Laser-Fused Stainless Steel Bars, Plates, and Shapes
ASTM A1071/A1071M-11	Standard Test Method for Evaluating Hygrothermal Corrosion Resistance of Permanent Magnet Alloys
ASTM A1072/A1072M-11	Standard Specification for Zinc-5% Aluminum (Hot-Dip) Coatings on Iron and Steel Products
ASTM A1073/A1073M-14	Standard Practice for Using Hand Micrometers to Measure the Thickness of Nonmetallic-Coated Steel Sheet
ASTM A1074-11	Standard Specification for Hot Tin and Hot Tin/Lead Dip on Ferrous and Non-Ferrous Metals

Standard	Title
ASTM A1075-12	Standard Specification for Flanged Steel U-Channel Posts
ASTM A1076/A1076M-13	Standard Specification for Cold Formed Carbon Structural Steel Tubing Made from Metallic Precoated Sheet Steel
ASTM A1077/A1077M-14	Standard Specification for Structural Steel with Improved Yield Strength at High Temperature for Use in Buildings
ASTM A1078/A1078M-12	Standard Specification for Epoxy-Coated Steel Dowels for Concrete Pavement
ASTM A1079-13	Standard Specification for Steel Sheet, Complex Phase (CP), Duel Phase (DP) and Transformation Induced Plasticity (TRIP), Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A1080-15	Standard Practice for Hot Isostatic Pressing of Steel, Stainless Steel, and Related Alloy Castings
ASTM A1081/A1081M-12	Standard Test Method for Evaluating Bond of Seven-Wire Steel Prestressing Strand
ASTM A1082/A1082M-15	Standard Specification for High Strength Precipitation Hardening and Duplex Stainless Steel Bolting for Special Purpose Applications
ASTM A1083/A1083M-12	Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, Produced by Twin-Roll Casting Process
ASTM A1084-15	Standard Test Method for Detecting Detrimental Phases in Lean Duplex Austenitic/Ferritic Stainless Steels
ASTM A1085-13	Standard Specification for Cold-Formed Welded Carbon Steel Hollow Structural Sections (HSS)
ASTM A1086-13	Standard Specification for Thin-Gauge Nonoriented Electrical Steel Fully Processed Types
ASTM A1087/A1087M-13	Standard Practice for Using Hand Calipers to Measure the Width of Steel Sheet
ASTM A1088-13	Standard Specification for Steel, Sheet, Cold-Rolled, Complex Phase (CP), Duel Phase (DP) and Transformation Induced Plasticity (TRIP)
ASTM A1089/A1089M-14	Standard Specification for Highly Loaded Anti-Friction Bearing Steel
ASTM A1090/A1090M-14	Standard Specification for Forged Rings and Hollows Produced from Steels with Atmospheric Corrosion Resistance
ASTM A1092-15	Standard Specification for Steel Sheet, as Cold-Reduced, for Conversion to Annealed Cold-Rolled Steel Sheet, and Hot Dip Metallic-Coated Steel Sheet
ASTM A1094/A1094M-15	Standard Specification for Continuous Hot-Dip Galvanized Steel Bars for Concrete Reinforcement

Appendix 2

DISCONTINUED FERROUS METAL STANDARDS

ASTM STANDARDS

Discontinued	Replaced By
A4 (1965)	A3 – Steel Joint Bars, Low, Medium and High Carbon (Non-Heat-Treated)
A5 (1979)	A3 – Steel Joint Bars, Low, Medium and High Carbon (Non-Heat-Treated)
A7 (1967)	A36/A36M – Carbon Structural Steel A283/A283M – Low and Intermediate Tensile Strength Carbon Steel Plates A306 – Discontinued 1975; Replaced by A663/A663M – Steel Bars, Carbon, Merchant Quality, Mechanical Properties, and A675/A675M – Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties
A8 (1963)	No Replacement
A9 (1940)	No Replacement
A10 (1970)	A283/A283M – Low and Intermediate Tensile Strength Carbon Steel Plates
A11 (1930)	A113 – Discontinued 1979; No Replacement
A12 (1934)	A131/A131M – Structural Steel for Ships
A13 (1934)	A131/A131M – Structural Steel for Ships
A14 (1950)	A68 – Discontinued 1975; Replaced by A689 – Carbon and Alloy Steel Bars for Springs
A15 (1969)	A615/A615M – Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
A16 (1969)	A616 – Discontinued 1999; Replaced by A996/A996M – Magnetic Particle Examination of Steel Forgings Using Alternating Current
A17 (1945)	A273 – Discontinued 1975; Replaced by A711/A711M – Steel Forging Stock A274 – Discontinued 1975; Replaced by A711/A711M – Steel Forging Stock
A18 (1940)	A236 – Discontinued 1981; No Replacement
A19 (1936)	A236 – Discontinued 1981; No Replacement
A21 (2003)	No Replacement
A22 (1934)	A57 – Discontinued 1966; Replaced by A504/A504M – Wrought Carbon Steel Wheels
A23 (1917)	A57 – Discontinued 1966; Replaced by A504/A504M – Wrought Carbon Steel Wheels
A24 (1917)	A57 – Discontinued 1966; Replaced by A504/A504M – Wrought Carbon Steel Wheels
A25 (1993)	A504/A504M – Wrought Carbon Steel Wheels
A26 (1966)	A551/A551M – Carbon Steel Tires for Railway and Rapid Transit Applications
A28 (1925)	A83 – Discontinued 1967; Replaced by A192/A192M – Seamless Carbon Steel Boiler Tubes for High-Pressure Service
A30 (1964)	No Replacement
A32 (1927)	A107 – Discontinued 1968; Replaced by A575 – Steel Bars, Carbon, Merchant Quality, M-Grades, and A576 – Steel Bars, Carbon, Hot-Wrought, Special Quality A108 – Steel Bars, Carbon, Cold Finished, Standard Quality
A33 (1937)	E30 – Discontinued 1995; No Replacement
A35 (1937)	No Replacement
A37 (1936)	No Replacement
A38 (1924)	A83 – Discontinued 1967; Replaced by A192/A192M – Seamless Carbon Steel Boiler Tubes for High-Pressure Service
A39 (1920)	A84 – Discontinued 1972; No Replacement
A40 (1920)	A84 – Discontinued 1972; No Replacement
A41 (1956)	No Replacement
A42 (1972)	No Replacement
A43 (1992)	No Replacement
A44 (1955)	A377 – Index of Specifications for Ductile-Iron Pressure Pipe
A45 (1943)	A377 – Index of Specifications for Ductile-Iron Pressure Pipe
A46 (1943)	No Replacement
A47M (1998)	A47/A47M – Ferritic Malleable Iron Castings
A48M (2000)	A48/A48M – Gray Iron Castings
A50 (1937)	A183 – Carbon Steel Track Bolts and Nuts
A51 (1937)	A183 – Carbon Steel Track Bolts and Nuts
A52 (1925)	A83 – Discontinued 1967; Replaced by A192/A192M – Seamless Carbon Steel Boiler Tubes for High-Pressure Service
A54 (1927)	A107 – Discontinued 1968; Replaced by A575 – Steel Bars, Carbon, Merchant Quality, M-Grades, and A576 – Steel Bars, Carbon, Hot-Wrought, Special Quality A108 – Steel Bars, Carbon, Cold Finished, Standard Quality
A55 (1937)	E30 – Discontinued 1995; No Replacement
A56 (1972)	No Replacement
A57 (1966)	A504/A504M – Wrought Carbon Steel Wheels

Discontinued	Replaced By
A58 (1943)	A689 – Carbon and Alloy Steel Bars for Springs
A59 (1966)	A689 – Carbon and Alloy Steel Bars for Springs
A60 (1966)	A689 – Carbon and Alloy Steel Bars for Springs
A61 (1969)	A616 – Discontinued 1999; Replaced by A996/A996M – Magnetic Particle Examination of Steel Forgings Using Alternating Current
A62 (1949)	No Replacement
A63 (1941)	A237 – Discontinued 1975; Replaced by A668/A668M – Steel Forgings, Carbon and Alloy, for General Industrial Use A238 – Discontinued 1989; Replaced by A730 – Discontinued 2004; Replaced by A668/A668M – Steel Forgings, Carbon and Alloy, for General Industrial Use
A64 (1937)	E30 – Discontinued 1995; No Replacement
A68 (1975)	A689 – Carbon and Alloy Steel Bars for Springs
A69 (1927)	No Replacement
A70 (1947)	A285/A285M – Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength
A71 (1937)	No Replacement
A72 (1972)	No Replacement
A73 (1972)	No Replacement
A75 (1921)	A47/A47M – Ferritic Malleable Iron Castings
A76 (1981)	A183 – Carbon Steel Track Bolts and Nuts
A77 (1935)	No Replacement
A78 (1947)	A283/A283M – Low and Intermediate Tensile Strength Carbon Steel Plates
A79 (1921)	A84 – Discontinued 1972; No Replacement
A80 (1927)	A107 – Discontinued 1968; Replaced by A575 – Steel Bars, Carbon, Merchant Quality, M-Grades, and A576 – Steel Bars, Carbon, Hot-Wrought, Special Quality A108 – Steel Bars, Carbon, Cold Finished, Standard Quality
A81 (1972)	No Replacement
A82/A82M (2013)	A1064/A1064M – Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
A83 (1967)	A192/A192M – Seamless Carbon Steel Boiler Tubes for High-Pressure Service
A84 (1972)	No Replacement
A85 (1953)	No Replacement
A86 (1963)	No Replacement
A87 (1947)	A27/A27M – Steel Castings, Carbon, for General Application
A88 (1933)	A48/A48M – Gray Iron Castings
A89 (1947)	A285/A285M – Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength
A91 (1940)	No Replacement
A92 (1937)	No Replacement
A93 (1965)	A525/A525M – Discontinued 1994; Replaced by A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process, and A924/A924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
A94 (1966)	No Replacement
A95 (1957)	A216/A216M – Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service
A96 (1965)	A193/A193M – Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
A97 (1935)	No Replacement
A98 (1992)	No Replacement
A103 (1939)	E32 – Discontinued 2015; No Replacement
A104 (1939)	E31 – Discontinued 1995; No Replacement
A107 (1968)	A575 – Steel Bars, Carbon, Merchant Quality, M-Grades A576 – Steel Bars, Carbon, Hot-Wrought, Special Quality
A109M (1998)	A109/A109M – Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled
A110 (1936)	A90/A90M – Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
A112 (1990)	No Replacement
A113 (1979)	No Replacement
A114 (1940)	No Replacement
A115 (1937)	No Replacement
A117 (1956)	A392 – Zinc-Coated Steel Chain-Link Fence Fabric
A118 (1933)	No Replacement

Discontinued	Replaced By
A119 (1942)	E44 – Discontinued 1993; Replaced by A919 – Discontinued 1999; Replaced by A941 – Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys
A120 (1987)	A53/A53M – Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
A122 (1963)	A475 – Zinc-Coated Steel Wire Strand
A124 (1940)	No Replacement
A127 (1949)	Redesignated A340 – Terminology of Symbols and Definitions Relating to Magnetic Testing
A129 (1969)	No Replacement
A130 (1937)	E30 – Discontinued 1995; No Replacement
A133 (1941)	A237 – Discontinued 1975; Replaced by A668/A668M – Steel Forgings, Carbon and Alloy, for General Industrial Use A238 – Discontinued 1989; Replaced by A730 – Discontinued 2004; Replaced by A668/A668M – Steel Forgings, Carbon and Alloy, for General Industrial Use
A136 (1945)	No Replacement
A137 (1943)	No Replacement
A138 (1945)	No Replacement
A140 (1935)	No Replacement
A141 (1967)	A502 – Rivets, Steel, Structural
A142 (1977)	A716 – Ductile Iron Culvert Pipe
A145 (1940)	A132 – Ferromolybdenum
A147 (1984)	No Replacement
A149 (1940)	A212 – Discontinued 1967; Replaced by A515/A515M – Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service, and A516/A516M – Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service
A150 (1940)	A212 – Discontinued 1967; Replaced by A515/A515M – Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service, and A516/A516M – Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service
A151 (1938)	No Replacement
A152 (1972)	No Replacement
A154 (1936)	A180 – Discontinued 1937; Replaced by A27/A27M – Steel Castings, Carbon, for General Application
A155 (1978)	A671/A671M – Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures A672/A672M – Electric-Fusion-Welded Steel Pipe for High-Pressure Service at Moderate Temperatures A691/A691M – Carbon and Alloy Steel Pipe, Electric Fusion-Welded for High-Pressure Service at High Temperatures
A156 (1936)	A146 – Molybdenum Oxide Products
A157 (1953)	A217/A217M – Steel Castings, Martensitic Stainless and Alloy, for Pressure-Containing Parts, Suitable for High-Temperature Service A351/A351 – Castings, Austenitic, for Pressure-Containing Parts
A158 (1953)	A335/A335M – Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
A160 (1969)	A617 – Discontinued 1999; Replaced by A996/A996M – Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
A161 (1999)	A192/A192M – Seamless Carbon Steel Boiler Tubes for High Pressure Service A209/A209M – Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes
A162 (1973)	No Replacement
A163 (1972)	No Replacement
A164 (1981)	B663 – Silver-Tungsten Carbide Electrical Contact Material
A165 (1988)	B766 – Electrodeposited Coatings of Cadmium
A166 (1968)	B456 – Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium
A167 (2014)	No Replacement
A168 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A169 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application

Discontinued	Replaced By
A170 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A171 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A172 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A173 (1954)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A174 (1940)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A175 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A176 (2015)	A240/A240M – Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
A177 (1989)	A666 – Annealed or Cold-Worked Austenitic Stainless Steel, Sheet, Strip, Plate, and Flat Bar
A180 (1937)	A27/A27M – Steel Castings, Carbon, for General Application
A185/A185M (2013)	A1064/A1064M – Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
A186 (1966)	A504/A504M – Wrought Carbon Steel Wheels
A187 (1943)	No Replacement
A188 (1943)	No Replacement
A189 (1972)	No Replacement
A190 (1962)	No Replacement
A191 (1942)	A239 – Practice for Locating the Thinnest Spot in a Zinc (Galvanized) Coating on Iron or Steel Articles1, 2
A195 (1966)	A502 – Rivets, Steel, Structural
A196 (1962)	No Replacement
A197M (1999)	A197/A197M – Cupola Malleable Iron
A198 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A199/A199M (1995)	A200 – Discontinued 1999; Replaced by A213/A213M – Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
A200 (1999)	A213/A213M – Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
A201 (1967)	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
A202/A202M (2004)	No Replacement
A205 (1967)	A233 – Discontinued 1970; No Replacement A251 – Discontinued 1970; No Replacement
A206 (1953)	A335/A335M – Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
A207 (1972)	No Replacement
A208 (1941)	A239 – Practice for Locating the Thinnest Spot in a Zinc (Galvanized) Coating on Iron or Steel Articles
A211 (1993)	No Replacement
A212 (1967)	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

Discontinued	Replaced By
A215 (1947)	A27/A27M – Steel Castings, Carbon, for General Application
A218 (1963)	A475 – Zinc-Coated Steel Wire Strand
A219 (1972)	B487 – Test Method for Measurement of Metal and Oxide Coating Thicknesses by Microscopical Examination of a Cross Section B499 – Test Method for Measurement of Coating Thicknesses by the Magnetic Method: Nonmagnetic Coatings on Magnetic Basis Metals B504 – Test Method for Measurement of Thickness of Metallic Coatings by the Coulometric Method B529 – Discontinued 1979; Replaced by B244 – Test Method for Measurement of Thickness of Anodic Coatings on Aluminum and of Other Nonconductive Coatings on Nonmagnetic Basis Metals with Eddy-Current Instruments B530 – Test Method for Measurement of Coating Thicknesses by the Magnetic Method: Electrodeposited Nickel Coatings on Magnetic and Nonmagnetic Substrates
A220M (1999)	A220/A220M – Pearlitic Malleable Iron
A221 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A222 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A223 (1947)	A296 – Discontinued 1980; Replaced by A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application, and A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service A297/A297M – Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat-Resistant, for General Application
A224 (1969)	G4 – Guide for Conducting Corrosion Tests in Field Applications
A226/A226M (1997)	No Replacement
A233 (1970)	No Replacement
A235 (1975)	A668/A668M – Steel Forgings, Carbon and Alloy, for General Industrial Use
A236 (1981)	No Replacement
A237 (1975)	A668/A668M – Steel Forgings, Carbon and Alloy, for General Industrial Use
A238 (1989)	A730 – Discontinued 2004; Replaced by A668/A668M – Steel Forgings, Carbon and Alloy, for General Industrial Use
A241 (1979)	A67 – Steel Tie Plates, Low-Carbon and High-Carbon Hot-Worked
A243 (1975)	A668/A668M – Steel Forgings, Carbon and Alloy, for General Industrial Use
A244 (1947)	A504/A504M – Wrought Carbon Steel Wheels
A245 (1972)	A570 – Discontinued 2000; Replaced by A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength A611 – Discontinued 2000; Replaced by A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
A246 (1958)	A245 – Discontinued 1972; Replaced by A570 – Discontinued 2000; Replaced by A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength A611 – Discontinued 2000; Replaced by A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
A248 (1972)	A273 – Discontinued 1975; Replaced by A711/A711M – Steel Forging Stock A274 – Discontinued 1975; Replaced by A711/A711M – Steel Forging Stock
A251 (1970)	No Replacement
A253 (1962)	No Replacement
A256 (1990)	No Replacement
A257 (1945)	A34/A34M – Practice for Sampling and Procurement Testing of Magnetic Materials
A258 (1945)	A34/A34M – Practice for Sampling and Procurement Testing of Magnetic Materials
A259 (1945)	A34/A34M – Practice for Sampling and Procurement Testing of Magnetic Materials
A260 (1966)	No Replacement
A261 (1959)	No Replacement
A267 (1954)	No Replacement
A271 (1999)	A213/A213M – Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes

Discontinued	Replaced By
A272 (1945)	E109 – Discontinued 1981; Replaced by E709 – Guide for Magnetic Particle Testing
A273 (1975)	A711/A711M – Steel Forging Stock
A274 (1975)	A711/A711M – Steel Forging Stock
A277 (1952)	A338 – Malleable Iron Flanges, Pipe Fittings, and Valve Parts for Railroad, Marine, and Other Heavy Duty Service at Temperatures Up to 650°F (345°C)
A278M (2001)	A278/A278M – Gray Iron Castings for Pressure-Containing Parts for Temperatures Up to 650oF (350oC)
A279 (1945)	G31 – Guide for Laboratory Immersion Corrosion Testing of Metals
A280 (1953)	A335/A335M – Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
A281 (1947)	A27/A27M – Steel Castings, Carbon, for General Application
A282 (1945)	A148/A148M – Steel Castings, High Strength, for Structural Purposes
A284/A284M (1992)	A283/A283M – Low and Intermediate Tensile Strength Carbon Steel Plates
A286 (1960)	A434 – Steel Bars, Alloy, Hot-Wrought or Cold-Finished, Quenched and Tempered
A287 (1955)	No Replacement
A292 (1968)	A469/A469M – Vacuum-Treated Steel Forgings for Generator Rotors
A293 (1984)	A470/A470M – Vacuum-Treated Carbon and Alloy Steel Forgings for Turbine Rotors and Shafts
A294 (1988)	A471/A471M – Vacuum-Treated Alloy Steel Forgings for Turbine Rotor Disks and Wheels
A296 (1980)	A743/A743M – Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion-Resistant, for General Application A744/A744M – Castings, Iron-Chromium-Nickel, Corrosion-Resistant, for Severe Service
A298 (1970)	No Replacement
A300 (1975)	No Replacement
A301 (1956)	A387/A387M – Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum
A303 (1970)	A570 – Discontinued 2000; Replaced by A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A305 (1968)	A615/A615M – Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement A616 – Discontinued 1999; Replaced by A996/A996M – Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement A617 – Discontinued 1999; Replaced by A996/A996M – Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
A306 (1975)	A663/A663M – Steel Bars, Carbon, Merchant Quality, Mechanical Properties A675/A675M – Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties
A310 (1949)	Redesignated A345 – Flat-Rolled Electrical Steels for Magnetic Applications
A315 (1952)	A335/A335M – Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
A316 (1969)	No Replacement
A317 (1975)	E381 – Method of Macroetch Testing Steel Bars, Billets, Blooms, and Forgings
A318 (1976)	A370 – Test Methods and Definitions for Mechanical Testing of Steel Products
A321 (2007)	No Replacement
A326 (1990)	No Replacement
A327M (2011)	A327/A327M – Test Methods for Impact Testing of Cast Irons
A329 (1965)	A551/A551M – Carbon Steel Tires for Railway and Rapid Transit Applications
A330 (1954)	A370 – Test Methods and Definitions for Mechanical Testing of Steel Products
A331 (2004)	A108 – Steel Bar, Carbon and Alloy, Cold-Finished
A332 (1965)	A689 – Carbon and Alloy Steel Bars for Springs
A337 (1955)	A392 – Zinc-Coated Steel Chain-Link Fence Fabric
A339 (1965)	A536 – Ductile Iron Castings
A344 (1977)	A370 – Test Methods and Definitions for Mechanical Testing of Steel Products A712 – Test Method for Electrical Resistivity of Soft Magnetic Alloys A717/A717M – Test Method for Surface Insulation Resistivity of Single-Strip Specimens A718 – Discontinued 1996; No Replacement A719/A719M – Test Method for Lamination Factor of Magnetic Materials A720/A720M – Test Method for Ductility of Nonoriented Electrical Steel
A346 (1998)	No Replacement
A347 (1996)	No Replacement
A349 (1984)	No Replacement
A357 (1973)	A387/A387M – Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum
A359 (1954)	A370 – Test Methods and Definitions for Mechanical Testing of Steel Products
A360 (1993)	No Replacement
A360M (1993)	No Replacement
A361/A361M (1995)	No Replacement

Discontinued	Replaced By
A362 (1977)	No Replacement
A364 (1959)	A434 – Steel Bars, Alloy, Hot-Wrought or Cold-Finished, Quenched and Tempered
A365 (1968)	A619/A619M – Discontinued 1997; No Replacement A620/A620M – Discontinued 2000; Replaced by A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
A366/A366M (2000)	A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
A371 (1969)	No Replacement
A373 (1966)	Combined with A36/A36M – Carbon Structural Steel
A374 (1971)	A606/A606M – Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance A607 – Discontinued 2000; Replaced by A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable, and A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A375 (1971)	A606/A606M – Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance A607 – Discontinued 2000; Replaced by A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable, and A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A378 (1955)	A345 – Flat-Rolled Electrical Steels for Magnetic Applications
A379 (1955)	A345 – Flat-Rolled Electrical Steels for Magnetic Applications
A382 (1971)	No Replacement
A383 (1996)	No Replacement
A386 (1984)	A123/A123M – Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
A393 (1974)	A262 – Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels
A395M (1998)	A395/A395M – Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures
A396 (1965)	A536 – Ductile Iron Castings
A397 (1958)	No Replacement
A398 (1969)	No Replacement
A399 (1969)	No Replacement
A402 (1958)	No Replacement
A404 (1974)	No Replacement
A405 (1995)	No Replacement
A406 (1965)	No Replacement
A407M (1989)	No Replacement
A408 (1968)	A615/A615M – Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
A410 (1976)	No Replacement
A412 (1988)	No Replacement
A415 (1970)	A569/A569M – Discontinued 2000; Replaced by A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A417 (2008)	No Replacement
A417M (1989)	No Replacement
A419 (1971)	No Replacement
A422 (1994)	No Replacement
A425 (1970)	A569/A569M – Discontinued 2000; Replaced by A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A429 (1976)	A276 – Stainless Steel Bars and Shapes
A430/A430M (1995)	A312/A312M – Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
A431 (1968)	A615/A615M – Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
A432 (1968)	A615/A615M – Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
A433 (1972)	No Replacement
A438 (2003)	No Replacement
A440 (1979)	No Replacement
A441/A441M (1988)	A572/A572M – High-Strength Low-Alloy Columbium-Vanadium Structural Steel
A442/A442M (1991)	No Replacement

Discontinued	Replaced By
A443 (1966)	Combined with A370 – Test Methods and Definitions for Mechanical Testing of Steel Products
A444/A444M (1995)	A929/A929M – Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe
A445 (1974)	A395/A395M – Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures
A446/A446M (1994)	A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process A924/A924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
A448 (1976)	No Replacement
A452 (1995)	No Replacement
A454 (1980)	No Replacement
A457 (1990)	No Replacement
A458 (1991)	No Replacement
A461 (1971)	A564/A564M – Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes A637 – Discontinued; Redesignated B637 – Precipitation-Hardening and Cold Worked Nickel Alloy Bars, Forgings, and Forging Stock for Moderate or High-Temperature Service A638 – Precipitation Hardening Iron Base Superalloy Bars, Forgings, and Forging Stock for High-Temperature Service A639 – Discontinued; Redesignated B639 – Precipitation Hardening Cobalt-Containing Alloys (UNS R30155 and UNS R30816) Rod, Bar, Forgings, and Forging Stock for High-Temperature Service
A462 (1970)	E165 – Practice for Liquid Penetrant Examination for General Industry
A464 (1968)	A376/A376M – Seamless Austenitic Steel Pipe for High-Temperature Service
A465 (1975)	No Replacement
A468 (1969)	A6/A6M – General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling A341/A341M – Test Method for Direct Current Magnetic Properties of Materials Using D-C Permeameters and the Ballistic Test Methods
A476M (2000)	A476/A476M – Ductile Iron Castings for Paper Mill Dryer Rolls
A477 (1991)	No Replacement
A486/A486M (1987)	No Replacement
A496/A496M (2013)	A1064/A1064M – Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
A497/A497M (2013)	A1064/A1064M – Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
A502 (1999)*	No Replacement
A509 (1983)	A788/A788M – Steel Forgings, General Requirements
A510M (2011)	A510/A510M – General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel
A518 M (1999)	A518/A518 M – Corrosion-Resistant High-Silicon Iron Castings
A520 (2000)	No Replacement
A525 (1994)	A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process A924/A924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
A525M (1994)	A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process A924/A924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
A526/A526M (1994)	A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process A924/A924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
A527/A527M (1994)	A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process A924/A924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
A528/A528M (1994)	A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process A924/A924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
A535 (1998)	No Replacement
A538/A538M (1989)	No Replacement
A539 (2004)	No Replacement
A544 (1991)	No Replacement
A545 (1991)	No Replacement
A546 (1991)	No Replacement
A547 (1991)	No Replacement
A548 (1991)	No Replacement
A549 (1991)	No Replacement
A552 (1974)	A689 – Carbon and Alloy Steel Bars for Springs
A557/A557M (1995)	A178/A178M – Electric-Resistance-Welded Carbon Steel and Carbon-Manganese Steel Boiler and Superheater Tubes

Discontinued	Replaced By
A558 (1969)	No Replacement
A559 (1969)	No Replacement
A566 (1984)	No Replacement
A567/A567M (1985)	No Replacement
A568M (1990)	A568/A568M – Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for
A569/A569M (2000)	A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A570/A570M (2000)	A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A571M (2001)	A571/A571M – Austenitic Ductile Iron Castings for Pressure-Containing Parts Suitable for Low-Temperature Service
A583 (2004)	No Replacement
A584 (2002)	A116 – Metallic-Coated, Steel Woven Wire Fence Fabric
A585 (2002)	A121 – Metallic-Coated Carbon Steel Barbed Wire
A590 (1984)	No Replacement
A591/A591M (2005)	A879/A879M – Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
A593 (1976)	No Replacement
A594 (1986)	No Replacement
A599 (1992)	A599/A599M – Tin Mill Products, Electrolytic Tin-Coated, Cold-Rolled Sheet
A605/A605M (1987)	No Replacement
A607 (2000)	A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable, and A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A611 (2000)	A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
A613 (1984)	No Replacement
A614 (1986)	No Replacement
A615M (1993)	A615/A615M – Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
A616/A616M (1999)	A996/A996M – Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
A617/A617M (1999)	A996/A996M – Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
A619/A619M (1997)	No Replacement
A620/A620M (2000)	A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
A621/A621M (1997)	No Replacement
A622/A622M (2000)	A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A624M (1995)	A624/A624M – Tin Mill Products, Electrolytic Tin Plate, Single Reduced
A625M (1992)	A625/A625M – Tin Mill Products, Black Plate, Single Reduced
A626M (1995)	A626/A626M – Tin Mill Products, Electrolytic Tin Plate, Double Reduced
A628 (1981)	No Replacement
A629 (2004)	A627 – Test Methods for Tool-Resisting Steel Bars, Flats, and Shapes for Detention and Correctional Facilities
A631 (1993)	A583 – Discontinued 2004; No Replacement
A634 (1977)	No Replacement
A635M (1990)	A635/A635M – Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Alloy, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability, General Requirements for
A637 (1981)	Redesignated B637 – Precipitation-Hardening and Cold Worked Nickel Alloy Bars, Forgings, and Forging Stock for Moderate or High-Temperature Service
A639 (1980)	Redesignated B639 – Precipitation Hardening Cobalt-Containing Alloys (UNS R30155 and UNS R30816) Rod, Bar, Forgings, and Forging Stock for High-Temperature Service
A641M (1997)	A641/A641M – Zinc-Coated (Galvanized) Carbon Steel Wire
A642/A642M (1994)	A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process A924/A924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
A643 (1982)	No Replacement
A647 (1981)	No Replacement
A650M (1988)	A650/A650M – Tin Mill Products, Black Plate, Double Reduced
A651 (1986)	No Replacement

Discontinued	Replaced By
A652 (1983)	No Replacement
A654 (1983)	No Replacement
A655 (1983)	No Replacement
A658/A658M (1988)	No Replacement
A661	Not Yet Assigned
A665 (1987)	A876 – Flat-Rolled, Grain-Oriented, Silicon-Iron, Electrical Steel, Fully Processed Types
A665M (1987)	A876 – Flat-Rolled, Grain-Oriented, Silicon-Iron, Electrical Steel, Fully Processed Types
A667M (1987)	A667/A667M – Centrifugally Cast Dual Metal (Gray and White Cast Iron) Cylinders
A669 (1983)	A789/A789M – Seamless and Welded Ferritic/Austenitic Stainless Steel Tubing for General Service
A670 (1979)	Redesignated B670 – Precipitation-Hardening Nickel Alloy (UNS N07718) Plate, Sheet, and Strip for High-Temperature Service
A676 (1990)	No Replacement
A677M (2000)	A677 – Nonoriented Electrical Steel Fully Processed Types
A678/A678M (2010)	No Replacement
A680/A680M (1986)	A684/A684M – Steel, Strip, High-Carbon, Cold-Rolled
A682/A682M (2009)	A684/A684M – Steel, Strip, High-Carbon, Cold-Rolled
A683M (1999)	A683 – Nonoriented Electrical Steel, Semiprocessed Types
A685 (1985)	A681 – Tool Steels Alloy
A687 (1999)	No Replacement
A692 (1995)	A209/A209M – Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes
A695 (2002)	No Replacement
A699 (1985)	No Replacement
A708 (1988)	No Replacement
A714 (2014)	No Replacement
A715 (2000)	A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable, and A1011/A1011M – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A718 (1996)	No Replacement
A725 (1988)	A876 – Flat-Rolled, Grain-Oriented, Silicon-Iron, Electrical Steel, Fully Processed Types
A725M (1988)	A876M – Discontinued 1998; Replaced by A876 – Flat-Rolled, Grain-Oriented, Silicon-Iron, Electrical Steel, Fully Processed Types
A726M (1998)	A726 – Cold-Rolled Magnetic Lamination Quality Steel, Semiprocessed Types
A728	Not Yet Assigned
A730 (2004)	A668/A668M – Steel Forgings, Carbon and Alloy, for General Industrial Use
A731/A731M (1995)	A268/A268M – Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service
A749M (1991)	A749/A749M – Steel, Strip, Carbon and High-Strength, Low-Alloy, Hot-Rolled, General Requirements for
A750 (2004)	No Replacement
A752 (2011)	A510/A510M – General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel
A752M (2011)	A510/A510M – General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel
A766/A766M (1989)	No Replacement
A771/A771M (2004)	No Replacement
A776	Not Yet Assigned
A777 (1995)	No Replacement
A782/A782M (2010)	No Replacement
A783 (1986)	No Replacement
A784 (1987)	No Replacement
A785 (1987)	No Replacement
A791/A791M (1995)	A268/A268M – Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service
A792M (1994)	A792/A792M – Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
A797 (1988)	No Replacement
A806/A806M (1995)	No Replacement
A808/A808M (2005)	A656/A656M – Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability
A812/A812M (1997)	No Replacement
A816/A816M (1994)	A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process A924/A924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process

Discontinued	Replaced By
A819 (1995)	A929/A929M – Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe
A825 (1989)	No Replacement
A826/A826M (2004)	No Replacement
A828	Not Yet Assigned
A831/A831M (2005)	No Replacement
A840/A840M (2011)	No Replacement
A843 (1987)	A876 – Flat-Rolled, Grain-Oriented, Silicon-Iron, Electrical Steel, Fully Processed Types
A845 (2005)	No Replacement
A846 (2005)	No Replacement
A850 (1990)	No Replacement
A851 (2002)	No Replacement
A852/A852M (2010)	No Replacement
A863 (1990)	No Replacement
A864/A864M (1997)	No Replacement
A868	Not Yet Assigned
A869	Not Yet Assigned
A870	Not Yet Assigned
A873/A873M (1997)	No Replacement
A874M (1999)	A874/A874M – Ferritic Ductile Iron Castings Suitable for Low-Temperature Service
A876M (1998)	A876 – Flat-Rolled, Grain-Oriented, Silicon-Iron, Electrical Steel, Fully Processed Types
A880 (2004)	No Replacement
A883/A883M (2006)	No Replacement
A885/A885M (2006)	No Replacement
A897M (2001)	A897/A897M – Austempered Ductile Iron Castings
A900	A900/A900M – Test Method for Lamination Factor of Amorphous Magnetic Strip
A907/A907M (2001)	A1018/A1018M – Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A916 (1995)	A929/A929M – Steel Sheet Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe
A919 (1999)	A941 – Terminology Relating to Steel, Stainless Steel, Related Alloys and Ferroalloys
A935/A935M (2001)	A1018/A1018M – Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A936/A936M (2001)	A1018/A1018M – Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
A946 (2012)	No Replacement
A948	Not listed
A953 (2005)	No Replacement
A954 (2005)	No Replacement
A963/A963M (2000)	A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
A969/A969M (2000)	A1008/A1008M – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
A984/A984M (2014)	No Replacement
A993 (2004)	No Replacement
A995	A995/A995M – Castings, Austenitic-Ferritic (Duplex) Stainless Steel, for Pressure-Containing Parts
A1005/A1005M (2014)	No Replacement
A1006/A1006M (2014)	No Replacement
A1019/A1019M (2012)	No Replacement
A1026 (2007)	No Replacement
A1027	Not listed
A1029	Not listed
A1041/A1041M (2013)	No Replacement
A1042/A1042M (2015)	No Replacement
A1050	Not listed
A1051	Not listed
A1052	Not listed

Discontinued	Replaced By
A1070	Not listed
A1091	Not listed
A1093	Not listed

*Note: A502-93 (Standard Specification for Steel Structural Rivets) was withdrawn in 1999. A502-03 (Standard Specification for Rivets, Steel, Structural) became an active standard, and has been reapproved in 2015.

AFNOR STANDARDS

Discontinued	Replaced By
NF A32-053:1992	No Replacement
NF A49-141:1978	No Replacement
NF A49-214:1978	No Replacement
NF A49-244:1993	EN 10217-7:2014
NF A49-247:1981	EN 10217-7:2014
NF A49-250:1979	No Replacement
NF A49-317:1980	EN 10297-2:2005

DIN STANDARD

Discontinued	Replaced By
DIN 1615:1984	No Replacement

BSI STANDARDS

Discontinued	Replaced By
BS 3605-1:1991 AMD 2:1997	EN 10216-5:2013
BS 3605-2:1991 AMD 1:1997	EN 10217-7:2014
BS 6258:1988 A1:1992	EN 10294-1:2005 and EN 10294-2:2012

EN STANDARDS

Discontinued	Replaced By
EN 10016-1	EN ISO 16120-1
EN 10016-2	EN ISO 16120-2
EN 10016-3	EN ISO 16120-3
EN 10016-4	EN ISO 16120-4
EN 10113-1	EN 10025-1, EN 10025-3, EN 10025-4
EN 10113-2	EN 10025-1, EN 10025-3
EN 10113-3	EN 10025-1, EN 10025-4
EN 10137-1	EN 10025-1, EN 10025-6
EN 10137-2	EN 10025-1, EN 10025-6
EN 10137-3	No Replacement
EN 10155	EN 10025-1, EN 10025-5
EN 10165	EN 10341
EN 10169-2	EN 10169
EN 10208-1	EN ISO 3183
EN 10208-2	EN ISO 3183
EN 10258	EN ISO 9445-1
EN 10259	EN ISO 9445-2
EN 10292	EN 10346
EN 10327	EN 10346
EN 12070	EN ISO 21952
EN 12072	EN ISO 14343

Discontinued	Replaced By
EN 1599	EN ISO 3580
EN 1600	EN ISO 3581
EN 1668	EN ISO 636
EN 440	EN ISO 14341
EN 50112	EN 50446
EN 756	EN ISO 14171
EN 758	EN ISO 17632

ISO Standards

Discontinued	Replaced By
ISO 3183-1:1996	EN ISO 3183
ISO 3183-2:1996	EN ISO 3183

JIS Standards

Standard	Date Withdrawn/Replaced by
JIS G 0204:2000	Withdrawn in: 2014-09-22 Replaced by: G 0203
JIS G 0301:1950	Withdrawn in: 1954-12-18
JIS G 0302:1956	Withdrawn in: 1966-11-01 Replaced by: G 1501; G 1511; G 1512; G1513
JIS G 0304:1951	Withdrawn in: 1957-10-30
JIS G 0305:1953	Withdrawn in: 1962-03-01
JIS G 0405:1950	Withdrawn in: 1959-12-01 Replaced by: G 4801
JIS G 0406:1950	Withdrawn in: 1959-12-01 Replaced by: G 4801
JIS G 0501:1952	Withdrawn in: 1955-02-12 Replaced by: G 3421; G 3422; G 3423
JIS G 0502:1952	Withdrawn in: 1955-02-12 Replaced by: G 3436; G 3437; G 3438
JIS G 0552:1998	Withdrawn in: 2005-01-20 Replaced by: G 0551
JIS G 0565:1992	Withdrawn in: 2007-01-20 Replaced by: Z 2320-1; Z 2320-2; Z 2320-3
JIS G 0574:1980	Withdrawn in: 2004-03-20
JIS G 0704:1977	Withdrawn in: 1980-03-01
JIS G 1202:1975	Withdrawn in: 1995-07-01 Replaced by: G 1253
JIS G 1203:1977	Withdrawn in: 1986-06-01 Replaced by: Z 2611
JIS G 1204:1978	Withdrawn in: 2004-03-20
JIS G 1230:1969	Withdrawn in: 1982-09-01 Replaced by: G 1257
JIS G 1231:1969	Withdrawn in: 1981-03-01 Replaced by: G 1236; G 1237
JIS G 1238:1992	Withdrawn in: 2005-02-20 Replaced by: G 1217
JIS G 1251:1976	Withdrawn in: 1995-07-01
JIS G 1252:1975	Withdrawn in: 1995-07-01 Replaced by: G 1253
JIS G 1254:1976	Withdrawn in: 1986-06-01 Replaced by: G 1256
JIS G 1255:1977	Withdrawn in: 1986-06-01 Replaced by: G 1256
JIS G 1257:1994	Withdrawn in: 2013-11-20
JIS G 1258:1999	Withdrawn in: 2007-07-20 Replaced by: G 1258-0; G 1258-1; G 1258-2; G 1258-3; G 1258-4; G 1258-5; G 1258-6; G 1258-7
JIS G 1315:1974	Withdrawn in: 1983-11-01
JIS G 1511:1976	Withdrawn in: 1986-02-01 Replaced by: G 1601
JIS G 1512:1976	Withdrawn in: 1986-02-01 Replaced by: G 1601
JIS G 1513:1976	Withdrawn in: 1986-02-01 Replaced by: G 1601
JIS G 1514:1976	Withdrawn in: 1986-02-01 Replaced by: G 1601
JIS G 1515:1976	Withdrawn in: 1986-02-01 Replaced by: G 1601
JIS G 1516:1976	Withdrawn in: 1986-02-01 Replaced by: G 1601
JIS G 1517:1975	Withdrawn in: 1985-03-01
JIS G 1518:1976	Withdrawn in: 1986-02-01 Replaced by: G 1602
JIS G 1519:1975	Withdrawn in: 1986-02-01 Replaced by: G 1602
JIS G 1520:1976	Withdrawn in: 1986-02-01 Replaced by: G 1602
JIS G 1521:1975	Withdrawn in: 1986-02-01 Replaced by: G 1602

Standard	Date Withdrawn/Replaced by
JIS G 1522:1975	Withdrawn in: 1986-02-01 Replaced by: G 1603
JIS G 1523:1975	Withdrawn in: 1986-02-01 Replaced by: G 1603
JIS G 1524:1976	Withdrawn in: 1986-02-01 Replaced by: G 1603
JIS G 1525:1975	Withdrawn in: 1986-02-01 Replaced by: G 1603
JIS G 1526:1976	Withdrawn in: 1986-02-01 Replaced by: G 1603
JIS G 1527:1976	Withdrawn in: 1986-02-01 Replaced by: G 1601
JIS G 1528:1968	Withdrawn in: 1986-02-01 Replaced by: G 1604
JIS G 1529:1975	Withdrawn in: 1985-03-01
JIS G 1530:1975	Withdrawn in: 1986-02-01 Replaced by: G 1603
JIS G 1531:1975	Withdrawn in: 1986-02-01 Replaced by: G 1602
JIS G 2201:1976	Withdrawn in: 2000-12-20
JIS G 2202:1976	Withdrawn in: 2000-12-20
JIS G 2203:1950	Withdrawn in: 1953-11-07 Replaced by: G 2201; G 2202
JIS G 2204:1950	Withdrawn in: 1953-11-07 Replaced by: G 2201; G 2202
JIS G 2205:1953	Withdrawn in: 1953-11-07 Replaced by: G 2201; G 2202
JIS G 2305:1969	Withdrawn in: 1978-12-01
JIS G 2317:1969	Withdrawn in: 1978-12-01
JIS G 3102:1964	Withdrawn in: 1965-07-01 Replaced by: G 4051
JIS G 3104:2004	Withdrawn in: 2011-02-21
JIS G 3107:1952	Withdrawn in: 1956-04-18 Replaced by: G 3111
JIS G 3110:1953	Withdrawn in: 1965-03-01 Replaced by: G 3112
JIS G 3111:2005	Withdrawn in: 2013-02-20
JIS G 3115-1:1995	Withdrawn in: 2000-06-20 Replaced by: G 3115
JIS G 3121:1951	Withdrawn in: 1955-02-12 Replaced by: G 3123
JIS G 3122:1952	Withdrawn in: 1955-02-12 Replaced by: G 3123
JIS G 3128:2009	Note: JIS G 3128:2009 no longer has Annexes attached to the standard, thus no longer containing the following grades that were included in DS67C: • Grade E355 Quality DD • Grade E355 Quality E • Grade E460 Quality CC • Grade E460 Quality DD • Grade E460 Quality E • Grade E550 Quality DD • Grade E550 Quality E • Grade E690 Quality DD • Grade E690 Quality E
JIS G 3211:1977	Withdrawn in: 1982-07-01 Replaced by: G 3202; G 3203; G 3204; G 3205
JIS G 3212:1977	Withdrawn in: 1982-07-01 Replaced by: G 3202; G 3203; G 3204; G 3205
JIS G 3213:1977	Withdrawn in: 1982-07-01 Replaced by: G 3202; G 3203; G 3204; G 3205
JIS G 3301:1965	Withdrawn in: 1967-07-01 Replaced by: G 3131
JIS G 3304:1950	Withdrawn in: 1956-07-17 Replaced by: G 3301
JIS G 3305:1953	Withdrawn in: 1956-07-17 Replaced by: G 3310
JIS G 3306:1954	Withdrawn in: 1956-07-17 Replaced by: G 3310
JIS G 3307:1965	Withdrawn in: 1967-07-01 Replaced by: G 3131
JIS G 3308:1957	Withdrawn in: 1969-08-06 Replaced by: G 3141
JIS G 3309:1950	Withdrawn in: 1953-05-08
JIS G 3310:1965	Withdrawn in: 1969-08-06 Replaced by: G 3141
JIS G 3391:1953	Withdrawn in: 1988-10-01
JIS G 3421:1951	Withdrawn in: 1955-02-12 Replaced by: G 3432; G 3433; G 3434; G 3435; G 3436
JIS G 3422:1951	Withdrawn in: 1955-02-12 Replaced by: G 3433
JIS G 3423:1951	Withdrawn in: 1955-02-12 Replaced by: G 3435
JIS G 3424:1951	Withdrawn in: 1955-02-12 Replaced by: G 3436
JIS G 3425:1951	Withdrawn in: 1955-02-12 Replaced by: G 3437
JIS G 3426:1951	Withdrawn in: 1955-02-12 Replaced by: G 3438
JIS G 3427:1951	Withdrawn in: 1955-02-12 Replaced by: G 3432
JIS G 3428:1950	Withdrawn in: 1956-04-18 Replaced by: G 3440
JIS G 3430:1952	Withdrawn in: 1957-10-30 Replaced by: G 3443

Standard	Date Withdrawn/Replaced by
JIS G 3431:1952	Withdrawn in: 1957-10-30 Replaced by: G 3443
JIS G 3432:1958	Withdrawn in: 1962-03-01 Replaced by: G 3452
JIS G 3433:1958	Withdrawn in: 1962-03-01 Replaced by: G 3454; G 3456
JIS G 3434:1958	Withdrawn in: 1962-03-01 Replaced by: G 3455
JIS G 3435:1958	Withdrawn in: 1962-03-01 Replaced by: G 3458; G 3459
JIS G 3436:1958	Withdrawn in: 1962-03-01 Replaced by: G 3461; G 3462; G 3463
JIS G 3437:1965	Withdrawn in: 1968-05-01
JIS G 3438:1958	Withdrawn in: 1962-03-01 Replaced by: G 3459; G 3461; G 3462; G 3463
JIS G 3439:1988	Withdrawn in: 1996-01-01
JIS G 3440:1956	Withdrawn in: 1961-02-01 Replaced by: G 3444; G 3445
JIS G 3443:2004	Withdrawn in: 2007-02-20 Replaced by: G 3443-1
JIS G 3451:1987	Withdrawn in: 2007-02-20 Replaced by: G 3443-2
JIS G 3491:1993	Withdrawn in: 2007-02-20
JIS G 3492:1993	Withdrawn in: 2004-03-20
JIS G 3501:1953	Withdrawn in: 1956-08-21 Replaced by: G 3505; G 3506
JIS G 3507:1991	Withdrawn in: 2005-01-20 Replaced by: G 3507-1
JIS G 3508:1991	Withdrawn in: 2005-01-20 Replaced by: G 3508-1
JIS G 3524:1953	Withdrawn in: 1957-10-30 Replaced by: Z 3211
JIS G 3526:1962	Withdrawn in: 1980-03-01
JIS G 3527:1951	Withdrawn in: 1954-01-30 Replaced by: G 3532
JIS G 3528:1951	Withdrawn in: 1954-01-30 Replaced by: G 3533
JIS G 3529:1951	Withdrawn in: 1954-01-30
JIS G 3530:1977	Withdrawn in: 1980-03-01
JIS G 3531:1977	Withdrawn in: 1980-03-01
JIS G 3534:1954	Withdrawn in: 1957-06-21 Replaced by: Z 3201
JIS G 3534:1988	Withdrawn in: 1994-06-01
JIS G 3539:1991	Withdrawn in: 2005-01-20 Replaced by: G 3507-2
JIS G 3541:1988	Withdrawn in: 1992-02-01
JIS G 3545:1991	Withdrawn in: 2005-01-20 Replaced by: G 3508-2
JIS G 3565:1988	Withdrawn in: 1994-06-01
JIS G 3566:1988	Withdrawn in: 1994-06-01 Replaced by: G 3561
JIS G 3567:1988	Withdrawn in: 1994-06-01 Replaced by: G 3560
JIS G 3568:1989	Withdrawn in: 1994-06-01 Replaced by: G 3560
JIS G 4102:1979	Withdrawn in: 2003-05-20 Replaced by: G 4053
JIS G 4103:1979	Withdrawn in: 2003-05-20 Replaced by: G 4053
JIS G 4104:1979	Withdrawn in: 2003-05-20 Replaced by: G 4053
JIS G 4105:1979	Withdrawn in: 2003-05-20 Replaced by: G 4053
JIS G 4106:1979	Withdrawn in: 2003-05-20 Replaced by: G 4053
JIS G 4201:1950	Withdrawn in: 1953-11-07 Replaced by: G 3102; G 4102; G 4103; G 4104; G 4105
JIS G 4202:2005	Withdrawn in: 2008-11-20 Replaced by: G 4053
JIS G 4301:1955	Withdrawn in: 1959-12-01 Replaced by: G 4303; G 4304; G 4305; G 4306; G 4307; G 4308; G 4309
JIS G 4302:1954	Withdrawn in: 1964-09-01 Replaced by: G 4311; G 4312
JIS G 4306:1988	Withdrawn in: 1991-11-01 Replaced by: G 4304
JIS G 4307:1987	Withdrawn in: 1991-11-01 Replaced by: G 4305
JIS G 4310:1999	Withdrawn in: 2012-01-20 Replaced by: G 4304; G 4305; G 4312
JIS G 4402:1953	Withdrawn in: 1956-04-18 Replaced by: G 4404
JIS G 4405:1954	Withdrawn in: 1956-04-18
JIS G 4406:1954	Withdrawn in: 1956-04-18
JIS G 4407:1954	Withdrawn in: 1956-04-18 Replaced by: G 4404
JIS G 4410:1984	Withdrawn in: 2005-07-20
JIS G 5521:1977	Withdrawn in: 1983-02-01
JIS G 5522:1977	Withdrawn in: 1983-02-01
JIS G 5523:1977	Withdrawn in: 1983-02-01
JIS G 5524:1977	Withdrawn in: 1989-01-01
JIS G 5701:1952	Withdrawn in: 1960-03-01 Replaced by: G 5702; G 5703; G 5704

Standard	Date Withdrawn/Replaced by
JIS G 5702:1988	Withdrawn in: 2000-02-20 Replaced by: G 5705
JIS G 5703:1988	Withdrawn in: 2000-02-20 Replaced by: G 5705
JIS G 5704:1988	Withdrawn in: 2000-02-20 Replaced by: G 5705
JIS G 7101:2000	Withdrawn in: 2014-09-22 Replaced by: G 3114
JIS G 7102:2000	Withdrawn in: 2013-11-20 Replaced by: G 3125
JIS G 7103:2000	Withdrawn in: 2014-02-20 Replaced by: G 3112
JIS G 7104:2000	Withdrawn in: 2014-02-20 Replaced by: G 3112
JIS G 7121:2000	Withdrawn in: 2013-11-20 Replaced by: G 3303
JIS G 7122:2000	Withdrawn in: 2013-11-20 Replaced by: G 3315
JIS G 7123:2000	Withdrawn in: 2013-11-20 Replaced by: G 3303
JIS G 7124:2000	Withdrawn in: 2013-11-20 Replaced by: G 3314
JIS G 7219:2003	Withdrawn in: 2013-11-20 Replaced by: G 3454
JIS G 7220:2003	Withdrawn in: 2013-11-20 Replaced by: G 3455; G 3456; G 3458; G 3461; G 3462
JIS G 7221:2003	Withdrawn in: 2013-11-20 Replaced by: G 3460; G 3464
JIS G 7222:2003	Withdrawn in: 2013-11-20 Replaced by: G 3459; G 3463
JIS G 7223:2003	Withdrawn in: 2013-11-20 Replaced by: G 3454
JIS G 7224:2003	Withdrawn in: 2013-11-20 Replaced by: G 3456; G 3461; G 3462
JIS G 7225:2003	Withdrawn in: 2013-11-20 Replaced by: G 3460; G 3464
JIS G 7226:2003	Withdrawn in: 2013-11-20 Replaced by: G 3459; G 3463; G 3468
JIS G 7301:1998	Withdrawn in: 2013-11-20
JIS G 7501:2000	Withdrawn in: 2014-02-20 Replaced by: G 4051; G 4052
JIS G 7503:2000	Withdrawn in: 2014-02-20 Replaced by: G 4051; G 4052; G 4053
JIS G 7601:2000	Withdrawn in: 2014-09-22 Replaced by: G 4311; G 4312; G 4901; G 4902
JIS G 7602:2000	Withdrawn in: 2014-09-22 Replaced by: G 4314
JIS G 7603:2000	Withdrawn in: 2014-09-22 Replaced by: G 4311
JIS G 7604:2000	Withdrawn in: 2014-09-22 Replaced by: G 4901; H 4553
JIS G 7605:2001	Withdrawn in: 2014-09-22 Replaced by: H 4551
JIS G 7751:2000	Withdrawn in: 2014-02-20 Replaced by: G 4801
JIS G 9071:1976	Withdrawn in: 1992-02-01
JIS G 9072:1976	Withdrawn in: 1992-02-01

Appendix

3

JIS STEEL AND RELATED STANDARDS

Standard	Title
G 3101:2015	Rolled steels for general structure
G 3103:2012	Carbon steel and molybdenum alloy steel plates for boilers and pressure vessels
G 3105:2004	Steel bars for chains
G 3106:2015	Rolled steels for welded structure
G 3108:2004	Rolled carbon steel for cold-finished steel bars
G 3109:2008	Steel bars for prestressed concrete
G 3112:2010	Steel bars for concrete reinforcement
G 3113:2006	Hot-rolled steel plate, sheet and strip for automobile structural uses
G 3114:2008	Hot-rolled atmospheric corrosion resisting steels for welded structure
G 3115:2010	Steel plates for pressure vessels for intermediate temperature service
G 3116:2013	Steel sheet, plates and strip for gas cylinders
G 3117:1987	Rerolled steel bars for concrete reinforcement
G 3118:2010	Carbon steel plates for pressure vessels for intermediate and moderate temperature services
G 3119:2013	Manganese-molybdenum and manganese-molybdenum-nickel alloy steel plates for boilers and pressure vessels
G 3120:2014	Manganese-molybdenum and manganese-molybdenum-nickel alloy steel plates quenched and tempered for pressure vessels
G 3123:2004	Cold finished carbon and alloy steel bars
G 3124:2015	High strength steel plates for pressure vessel for intermediate and moderate temperature service
G 3125:2010	Superior atmospheric corrosion resisting rolled steels
G 3126:2015	Carbon steel plates for pressure vessels for low temperature service
G 3127:2013	Nickel steel plates for pressure vessels for low temperature services
G 3128:2009	High yield strength steel plates for welded structure
G 3129:2005	High tensile strength steel for tower structural purposes
G 3131:2010	Hot-rolled mild steel plates, sheets and strip
G 3132:2011	Hot-rolled carbon steel strip for pipes and tubes
G 3133:2015	Decarburized steel sheet and strip for porcelain enamelling
G 3134:2006	Hot-rolled high strength steel plate, sheet and strip with improved formability for automobile structural uses
G 3135:2006	Cold-reduced high strength steel sheet and strip with improved formability for automobile structural uses
G 3136:2012	Rolled steels for building structure
G 3137:2008	Small diameter steel bars for prestressed concrete
G 3138:2005	Rolled steel bars for building structure
G 3141:2011	Cold-reduced carbon steel sheet and strip
G 3191:2012	Dimensions, mass and permissible variations of hot rolled steel bars and bar in coil
G 3192:2014	Dimensions, mass and permissible variations of hot rolled steel sections
G 3193:2008	Dimensions, mass and permissible variations of hot rolled steel plates, sheets and strips
G 3194:1998	Dimensions, mass and permissible variations of hot rolled flat steel
G 3199:2009	Specification for through-thickness characteristics of steel plate, wide flat and sections
G 3201:1988	Carbon steel forgings for general use
G 3202:1988	Carbon steel forgings for pressure vessels
G 3203:1988	Alloy steel forgings for pressure vessels for high-temperature service
G 3204:1988	Quenched and tempered alloy steel forgings for pressure vessels
G 3205:1988	Carbon and alloy steel forgings for pressure vessels for low-temperature service
G 3206:1993	High strength chromium-molybdenum alloy steel forgings for pressure vessels under high-temperature service
G 3214:1991	Stainless steel forgings for pressure vessels
G 3221:1988	Chromium molybdenum steel forgings for general use
G 3222:1988	Nickel chromium molybdenum steel forgings for general use
G 3223:1988	High tensile strength steel forgings for tower flanges
G 3251:1988	Carbon steel blooms and billets for forgings
G 3302:2010	Hot-dip zinc-coated steel sheet and strip
G 3303:2008	Tinplate and blackplate
G 3311:2010	Cold rolled special steel strip
G 3312:2012	Prepainted hot-dip zinc-coated steel sheet and strip
G 3313:2015	Electrolytic zinc-coated steel sheet and strip
G 3314:2010	Hot-dip aluminium-coated steel sheet and strip
G 3315:2008	Chromium coated tin free steel
G 3316:1987	Shapes and dimensions of corrugated steel sheets

Standard	Title
G 3317:2010	Hot-dip zinc-5% aluminium alloy-coated steel sheet and strip
G 3318:2012	Prepainted hot-dip zinc-5% aluminium alloy-coated steel sheet and strip
G 3320:1999	Coated stainless steel sheets
G 3321:2010	Hot-dip 55% aluminium-zinc alloy-coated steel sheet and strip
G 3322:2012	Prepainted hot-dip 55% aluminium-zinc alloy-coated steel sheet and strip
G 3350:2009	Light gauge steel sections for general structure
G 3351:1987	Expanded metals
G 3352:2014	Steel decks
G 3353:2011	Welded light gauge steel H sections for general structure
G 3429:2013	Seamless steel tubes for high pressure gas cylinders
G 3441:2015	Alloy steel tubes for machine purposes
G 3442:2015	Galvanized steel pipes for ordinary piping
G 3443-1:2014	Coated steel pipes for water service – Part 1: Pipes
G 3443-2:2014	Coated steel pipes for water service – Part 2: Fittings
G 3443-3:2014	Coated steel pipes for water service – Part 3: Long-life external plastic coatings
G 3443-4:2014	Coated steel pipes for water service – Part 4: Internal epoxy coatings
G 3444:2010	Carbon steel tubes for general structure
G 3445:2010	Carbon steel tubes for machine structure
G 3446:2012	Stainless steel pipes for machine and structural purposes
G 3447:2015	Stainless steel sanitary pipes
G 3448:2012	Light gauge stainless steel tubes for ordinary piping
G 3452:2014	Carbon steel pipes for ordinary piping
G 3454:2012	Carbon steel tubes for pressure service
G 3455:2012	Carbon steel pipes for high pressure service
G 3456:2014	Carbon steel pipes for high temperature service
G 3457:2012	Arc welded carbon steel pipes
G 3458:2013	Alloy steel pipes
G 3459:2012	Stainless steel pipes
G 3460:2013	Steel tubes for low temperature service
G 3461:2012	Carbon steel boiler and heat exchanger tubes
G 3462:2014	Alloy steel tubes for boiler and heat exchanger
G 3463:2012	Stainless steel boiler and heat exchanger tubes
G 3464:2013	Steel heat exchanger tubes for low temperature service
G 3465:2014	Seamless steel tubes for drilling
G 3466:2010	Carbon steel square and rectangular tubes for general structure
G 3467:2013	Steel tubes for fired heater
G 3468:2011	Large diameter welded stainless steel pipes
G 3469:2010	Polyethylene coated steel pipes
G 3471:2012	Corrugated steel pipe
G 3472:2013	Electric resistance welded carbon steel tubes for automobile
G 3473:2013	Carbon steel tubes for cylinder barrels
G 3474:2014	High strength steel tubes for steel tower
G 3475:2014	Carbon steel tubes for building structure
G 3502:2013	Piano wire rods
G 3503:2006	Wire rods for core wire of covered electrode
G 3505:2004	Low carbon steel wire rods
G 3506:2004	High carbon steel wire rods
G 3507-1:2010	Carbon steels for cold heading – Part 1: Wire rods
G 3507-2:2005	Carbon steels for cold heading – Part 2: Wires
G 3508-1:2010	Boron steels for cold heading – Part 1: Wire rods
G 3508-2:2005	Boron steels for cold heading – Part 2: Wires
G 3509-1:2010	Low-alloyed steels for cold heading – Part 1: Wire rods
G 3509-2:2003	Low-alloyed steels for cold heading – Part 2: Wires
G 3510:1992	Testing methods for steel tire cords
G 3521:1991	Hard drawn steel wires

Standard	Title
G 3522:2014	Piano wires
G 3523:1980	Core wires for covered electrode
G 3525:2013	Wire ropes
G 3532:2011	Low carbon steel wires
G 3533:1993	Barbed wires
G 3535:2012	Wire ropes for aircraft control
G 3536:2014	Steel wires and strands for prestressed concrete
G 3537:2011	Zinc-coated steel wire strands
G 3538:1994	Hard drawn steel wire for prestressed concrete
G 3540:2012	Wire ropes for mechanical control
G 3542:1993	Precoated color zinc-coated steel wires
G 3543:2005	Steel wire coated with colored plastics
G 3544:1993	Hot-dip aluminium-coated steel wires
G 3546:2012	Wire ropes with profile wires
G 3547:2015	Zinc-coated low carbon steel wires
G 3548:2011	Zinc-coated steel wires
G 3549:2000	Wire ropes for structure
G 3550:2003	Stainless steel wire ropes for structure
G 3551:2005	Welded steel wire and bar fabrics
G 3552:2007	Chain link wire netting
G 3553:2002	Crimped wire cloth
G 3554:2002	Hexagonal wire netting
G 3555:2004	Woven wire cloth
G 3556:2002	Industrial woven wire cloth
G 3557:2004	Stainless steel wire ropes for general purposes
G 3560:1994	Oil tempered wire for mechanical springs
G 3561:1994	Oil tempered wire for valve springs
G 3601:2012	Stainless-clad steels
G 3602:2012	Nickel and nickel alloy clad steels
G 3603:2012	Titanium clad steels
G 3604:2012	Copper and copper alloy clad steels
G 4051:2009	Carbon steels for machine structural use
G 4052:2008	Structural steels with specified hardenability bands
G 4053:2008	Low-alloyed steels for machine structural use
G 4107:2007	Alloy steel bolting materials for high temperature service
G 4108:2007	Alloy steel bars for special application bolting materials
G 4109:2013	Chromium-molybdenum alloy steel plates for boilers and pressure vessels
G 4110:2015	High strength chromium-molybdenum and chromium-molybdenum-vanadium alloy steel plates for pressure vessels under high-temperature service
G 4303:2012	Stainless steel bars
G 4304:2012	Hot-rolled stainless steel plate, sheet and strip
G 4305:2012	Cold-rolled stainless steel plate, sheet and strip
G 4308:2013	Stainless steel wire rods
G 4309:2013	Stainless steel wires
G 4311:2011	Heat-resisting steel bars and wire rods
G 4312:2011	Heat-resisting steel plate, sheet and strip
G 4313:2011	Cold rolled stainless steel strip for springs
G 4314:2013	Stainless steel wires for springs
G 4315:2013	Stainless steel wires for cold heading and cold forging
G 4316:1991	Stainless steel wire rods for welding
G 4317:2013	Hot-formed stainless steel sections
G 4318:1998	Cold finished stainless steel bars
G 4319:1991	Stainless steel blooms and billets for forgings
G 4320:2003	Cold-formed stainless steel sections
G 4321:2000	Stainless steel for building structure
G 4401:2009	Carbon tool steels

Standard	Title
G 4403:2006	High speed tool steels
G 4404:2006	Alloy tool steels
G 4801:2011	Spring steels
G 4802:2011	Cold-rolled steel strip for springs
G 4804:2008	Free-cutting steels
G 4805:2008	High carbon chromium bearing steels
G 4901:1999	Corrosion-resisting and heat-resisting superalloy bars
G 4902:1991	Corrosion-resisting and heat-resisting superalloy plates and sheets
G 4903:2008	Seamless nickel-chromium-iron alloy pipes
G 4904:2008	Seamless nickel-chromium-iron alloy heat exchanger tubes
G 5101:1991	Carbon steel castings
G 5102:1991	Steel castings for welded structure
G 5111:1991	High tensile strength carbon steel castings and low alloy steel castings for structural purposes
G 5121:2003	Corrosion-resistant cast steels for general applications
G 5122:2003	Heat-resistant cast steels and alloys for general applications
G 5131:2008	High manganese steel castings
G 5151:1991	Steel castings for high temperature and high pressure service
G 5152:1991	Steel castings for low temperature and high pressure service
G 5201:1991	Centrifugally cast steel pipes for welded structure
G 5202:1991	Centrifugally cast steel pipes for high temperature and high pressure service
G 5501:1995	Grey iron castings
G 5502:2001	Spheroidal graphite iron castings
G 5503:1995	Austempered spheroidal graphite iron castings
G 5504:2005	Heavy-walled ferritic spheroidal graphite iron castings for low temperature service
G 5510:2012	Austenitic iron castings
G 5511:1991	Low thermal expansive Fe-alloy castings
G 5525:2000	Cast-iron drainage pipes and fittings
G 5526:2014	Ductile iron pipes
G 5527:2014	Ductile iron fittings
G 5528:2014	Epoxy-powder coating for interior of ductile iron pipes and fittings
G 5705:2000	Malleable iron castings
G 5901:1974	Molding silica sand
G 5902:1974	Molding natural sand
G 5903:1975	Cast shot and grit
G 5904:1966	Testing method of cast shot and grit grain size
G 7105:2000	Heat-treatable steels, alloy steels and free-cutting steels – Part 18: Bright products of unalloyed and low alloy steels
G 7125:2003	Hollow steel bars for machining (ISO specifications)
G 7214:2000	Seamless nickel and nickel alloy tube
G 7215:2003	Plain end seamless steel tubes for mechanical application (ISO specifications)
G 7216:2003	Plain end seamless precision steel tubes – Technical conditions for delivery (ISO specifications)
G 7217:2003	Plain end welded precision steel tubes – Technical conditions for delivery (ISO specifications)
G 7218:2003	Plain end as-welded and sized precision steel tubes – Technical conditions for delivery (ISO specifications)
G 7302:2000	Zinc coatings for steel wire
G 7303:2000	Zinc-coated steel wire for fencing
G 7304:2000	Steel wire for mechanical springs – Part 1: General requirements
G 7305:2000	Steel wire for mechanical springs – Part 2: Cold-drawn carbon steel wire
G 7306:2000	Steel wire for mechanical springs – Part 3: Oil-hardened and tempered wire
G 7307:2000	Steel for the prestressing of concrete – Part 1: General requirements
G 7308:2000	Steel for the prestressing of concrete – Part 2: Cold-drawn wire
G 7309:2000	Steel for the prestressing of concrete – Part 3: Quenched and tempered wire
G 7310:2000	Steel for the prestressing of concrete – Part 4: Strand
G 7311:2000	Steel for the prestressing of concrete – Part 5: Hot-rolled steel bars with or without subsequent processing
G 7401:2000	Steels for cold heading and cold extruding
G 7502:2000	Wrought nitriding steels
G 7701:2000	Tool steels

Standard	Title
G 7821:2000	Cast carbon steels for general engineering purposes

Appendix 4

EN CURRENT STEEL STANDARDS

Standard	Title
EN 39:2001	Loose steel tubes for tube and coupler scaffolds - Technical delivery conditions
EN 502:2013	Roofing products from metal sheet - Specification for fully supported roofing products of stainless steel sheet
EN 505:2013	Roofing products from metal sheet - Specification for fully supported roofing products of steel sheet
EN 508-1:2014	Roofing and cladding products from metal sheet - Specification for self-supporting of steel, aluminium or stainless steel sheet - Part 1: Steel
EN 508-2:2008	Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet - Part 2: Aluminium
EN 508-3:2008	Roofing products from metal sheet - Specification for self-supporting products of steel, aluminium or stainless steel sheet - Part 3: Stainless steel
EN 523:2003	Steel strip sheaths for prestressing tendons - Terminology, requirements, quality control
EN 524-1:1997	Steel strip sheaths for prestressing tendons - Test methods - Part 1: Determination of shape and dimensions
EN 524-2:1997	Steel strip sheaths for prestressing tendons - Test methods - Part 2: Determination of flexural behaviour
EN 524-3:1997	Steel strip sheaths for prestressing tendons - Methods of test - Part 3: To-and-fro bending test
EN 524-4:1997	Steel strip sheaths for prestressing tendons - Test methods - Part 4: Determination of lateral load resistance
EN 524-5:1997	Steel strip sheaths for prestressing tendons - Test methods - Part 5: Determination of tensile load resistance
EN 524-6:1997	Steel strip sheaths for prestressing tendons - Test methods - Part 6: Determination of leaktightness (determination of water loss)
EN 544:2011	Bitumen shingles with mineral and/or synthetic reinforcements - Product specification and test methods
EN 1123-1:1999	Pipes and fittings of longitudinally welded hot-dip galvanized steel pipes with spigot and socket for waste water systems - Part 1: Requirements, testing, quality control
EN 1123-2:2006	Pipes and fittings of longitudinally welded hot-dip galvanized steel tube with spigot and socket for waste water systems - Part 2: Dimensions
EN 1123-3:2004	Pipes and fittings of longitudinally welded hot-dip galvanized steel pipes with spigot and socket for waste water systems - Part 3: Dimensions and special requirements for vacuum drainage systems and for drainage systems in ship-building
EN 1124-1:1999	Pipes and fittings of longitudinally welded stainless steel pipes with spigot and socket for waste water systems - Part 1: Requirements, testing, quality control
EN 1124-2:2014	Pipes and fittings of longitudinally welded stainless steel pipes with spigot and socket for waste water systems - Part 2: System S, forms and dimensions
EN 1124-3:2008	Pipes and fittings of longitudinally welded stainless steel pipes with spigot and socket for waste water systems - Part 3: System X - Dimensions
EN 1124-4:2013	Pipes and fittings of longitudinally welded stainless steel pipes with spigot and socket for wastewater systems - Part 4: Components for vacuum drainage systems and for drainage systems on ships
EN 1370:2011	Founding - Examination of surface condition
EN 1503-1:2000	Valves - Materials for bodies, bonnets and covers - Part 1: Steels specified in European Standards
EN 1503-2:2000	Valves - Materials for bodies, bonnets and covers - Part 2: Steels other than those specified in European Standards
EN 1503-3:2000	Valves - Materials for bodies, bonnets and covers - Part 3: Cast irons specified in European Standards
EN 1503-4:2002	Valves - Materials for bodies, bonnets and covers - Part 4: Copper alloys specified in European Standards
EN 1559-1:2011	Founding - Technical conditions of delivery - Part 1: General
EN 1559-2:2014	Founding - Technical conditions of delivery - Part 2: Additional requirements for steel castings
EN 1559-3:2011	Founding - Technical conditions of delivery - Part 3: Additional requirements for iron castings
EN 1559-4:2015	Founding - Technical conditions of delivery - Part 4: Additional requirements for aluminium alloy castings
EN 1559-5:1997	Founding - Technical conditions of delivery - Part 5: Additional requirements for magnesium alloy castings
EN 1559-6:1998	Founding - Technical conditions of delivery - Part 6: Additional requirements for zinc alloy castings
EN 1561:2011	Founding - Grey cast irons
EN 1562:2012	Founding - Malleable cast irons
EN 1563:2011	Founding - Spheroidal graphite cast irons
EN 1677-1:2000	Components for slings - Safety - Part 1: Forged steel components, Grade 8
EN 1677-2:2000	Components for slings - Safety - Part 2: Forged steel lifting hooks with latch, Grade 8
EN 1677-3:2001	Components for slings - Safety - Part 3: Forged steel self-locking hooks - Grade 8
EN 1677-4:2000	Components for slings - Safety - Part 4: Links, Grade 8
EN 1677-5:2001	Components for slings - Safety - Part 5: Forged steel lifting hooks with latch - Grade 4
EN 1677-6:2001	Components for slings - Safety - Part 6: Links - Grade 4
EN 1759-1:2004	Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, Class designated - Part 1: Steel flanges, NPS 1/2 to 24
EN 2515:1990	Rod ends, adjustable single fork and threaded shank - Dimensions and loads
EN 3305:1996	Screws, 100° countersunk reduced head, offset cruciform recess, close tolerance normal shank, short thread, in alloy steel, cadmium plated - Classification: 1 100 MPa (at ambient temperature)/235 °C
EN 10024:1995	Hot rolled taper flange I sections - Tolerances on shape and dimensions
EN 10025-1:2004	Hot rolled products of structural steels - Part 1: General technical delivery conditions
EN 10025-2:2004	Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels

Standard	Title
EN 10025-3:2004	Hot rolled products of structural steels - Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels
EN 10025-4:2004	Hot rolled products of structural steels - Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels
EN 10025-5:2004	Hot rolled products of structural steels - Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance
EN 10025-6:2004	Hot rolled products of structural steels - Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition
EN 10027-1:2005	Designation systems for steels - Part 1: Steel names
EN 10027-2:2015	Designation systems for steels - Part 2: Numerical system
EN 10028-1:2007	Flat products made of steels for pressure purposes - Part 1: General requirements
EN 10028-2:2009	Flat products made of steels for pressure purposes - Part 2: Non-alloy and alloy steels with specified elevated temperature properties
EN 10028-3:2009	Flat products made of steels for pressure purposes - Part 3: Weldable fine grain steels, normalized
EN 10028-4:2009	Flat products made of steels for pressure purposes - Part 4: Nickel alloy steels with specified low temperature properties
EN 10028-5:2009	Flat products made of steels for pressure purposes - Part 5: Weldable fine grain steels, thermomechanically rolled
EN 10028-6:2009	Flat products made of steels for pressure purposes - Part 6: Weldable fine grain steels, quenched and tempered
EN 10028-7:2007	Flat products made of steels for pressure purposes - Part 7: Stainless steels
EN 10029:2010	Hot-rolled steel plates 3 mm thick or above - Tolerances on dimensions and shape
EN 10034:1993	Structural steel I and H sections - Tolerances on shape and dimensions
EN 10048:1996	Hot rolled narrow steel strip - Tolerances on dimensions and shape
EN 10051:2010	Continuously hot-rolled strip and plate/sheet cut from wide strip of non-alloy and alloy steels - Tolerances on dimensions and shape
EN 10055:1995	Hot rolled steel equal flange tees with radiused root and toes - Dimensions and tolerances on shape and dimensions
EN 10056-1:1998	Structural steel equal and unequal leg angles - Part 1: Dimensions
EN 10056-2:1993	Structural steel equal and unequal leg angles - Part 2: Tolerances on shape and dimensions
EN 10067:1996	Hot rolled bulb flats - Dimensions and tolerances on shape, dimensions and mass
EN 10079:2007	Definition of steel products
EN 10080:2005	Steel for the reinforcement of concrete - Weldable reinforcing steel - General
EN 10083-1:2006	Steels for quenching and tempering - Part 1: General technical delivery conditions
EN 10083-2:2006	Steels for quenching and tempering - Part 2: Technical delivery conditions for non-alloy steels
EN 10083-3:2006	Steels for quenching and tempering - Part 3: Technical delivery conditions for alloy steels
EN 10084:2008	Case hardening steels - Technical delivery conditions
EN 10085:2001	Nitriding steel - Technical delivery conditions
EN 10087:1998	Free cutting steels - Technical delivery conditions for semi-finished products, hot-rolled bars and rods
EN 10088-1:2014	Stainless steels - Part 1: List of stainless steels
EN 10088-2:2014	Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes
EN 10088-3:2014	Stainless steels - Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes
EN 10088-4:2009	Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes
EN 10088-5:2009	Stainless steels - Part 5: Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes
EN 10089:2002	Hot-rolled steels for quenched and tempered springs - Technical delivery conditions
EN 10090:1998	Valve steels and alloys for internal combustion engines
EN 10095:1999	Heat resisting steel and nickel alloys
EN 10106:2007	Cold rolled non-oriented electrical steel sheet and strip delivered in the fully processed state
EN 10107:2014	Grain-oriented electrical steel strip and sheet delivered in the fully processed state
EN 10111:2008	Continuously hot rolled low carbon steel sheet and strip for cold forming - Technical delivery conditions
EN 10120:1996	Steel sheet and strip for welded gas cylinders
EN 10130:2006	Cold rolled low carbon steel flat products for cold forming - Technical delivery conditions
EN 10131:2006	Cold rolled uncoated and zinc or zinc-nickel electrolytically coated low carbon and high yield strength steel flat products for cold forming - Tolerances on dimensions and shape
EN 10132-1:2000	Cold rolled narrow steel strip for heat treatment - Technical delivery conditions - Part 1: General
EN 10132-2:2000	Cold rolled narrow steel strip for heat treatment - Technical delivery conditions - Part 2: Case hardening steels
EN 10132-3:2000	Cold rolled narrow steel strip for heat treatment - Technical delivery conditions - Part 3: Steels for quenching and tempering
EN 10132-4:2000	Cold rolled narrow steel strip for heat treatment - Technical delivery conditions - Part 4: Spring steels and other applications

Standard	Title
EN 10139:1997	Cold rolled uncoated mild steel narrow strip for cold forming - Technical delivery conditions
EN 10140:2006	Cold rolled narrow steel strip - Tolerances on dimensions and shape
EN 10143:2006	Continuously hot-dip metal coated steel sheet and strip - Tolerances on dimensions and shape
EN 10149-1:2013	Hot rolled flat products made of high yield strength steels for cold forming - Part 1: General technical delivery conditions
EN 10149-2:2013	Hot rolled flat products made of high yield strength steels for cold forming - Part 2: Technical delivery conditions for thermomechanically rolled steels
EN 10149-3:2013	Hot rolled flat products made of high yield strength steels for cold forming - Part 3: Technical delivery conditions for normalized or normalized rolled steels
EN 10151:2002	Stainless steel strip for springs - Technical delivery conditions
EN 10152:2009	Electrolytically zinc coated cold rolled steel flat products for cold forming - Technical delivery conditions
EN 10160:1999	Ultrasonic testing of steel flat product of thickness equal or greater than 6 mm (reflection method)
EN 10162:2003	Cold rolled steel sections - Technical delivery conditions - Dimensions and cross-sectional tolerances
EN 10163-1:2004	Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections - Part 1: General requirements
EN 10163-2:2004	Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections - Part 2: Plate and wide flats
EN 10163-3:2004	Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections - Part 3: Sections
EN 10164:2004	Steel products with improved deformation properties perpendicular to the surface of the product - Technical delivery conditions
EN 10169:2010	Continuously organic coated (coil coated) steel flat products - Technical delivery conditions
EN 10202:2001	Cold reduced tinmill products - Electrolytic tinplate and electrolytic chromium/chromium oxide coated steel
EN 10204:2004	Metallic products - Types of inspection documents
EN 10205:1991	Cold reduced blackplate in coil form for the production of tinplate or electrolytic chromium/chromium oxide coated steel
EN 10207:2005	Steels for simple pressure vessels - Technical delivery requirements for plates, strips and bars
EN 10209:2013	Cold rolled low carbon steel flat products for vitreous enamelling - Technical delivery conditions
EN 10210-1:2006	Hot finished structural hollow sections of non-alloy and fine grain steels - Part 1: Technical delivery conditions
EN 10210-2:2006	Hot finished structural hollow sections of non-alloy and fine grain steels - Part 2: Tolerances, dimensions and sectional properties
EN 10213:2007	Steel castings for pressure purposes
EN 10216-1:2013	Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 1: Non-alloy steel tubes with specified room temperature properties
EN 10216-2:2013	Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 2: Non-alloy and alloy steel tubes with specified elevated temperature properties
EN 10216-3:2013	Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 3: Alloy fine grain steel tubes
EN 10216-4:2013	Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 4: Non-alloy and alloy steel tubes with specified low temperature properties
EN 10216-5:2013	Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 5: Stainless steel tubes
EN 10217-1:2002	Welded steel tubes for pressure purposes - Technical delivery conditions - Part 1: Non-alloy steel tubes with specified room temperature properties
EN 10217-2:2002	Welded steel tubes for pressure purposes - Technical delivery conditions - Part 2: Electric welded non-alloy and alloy steel tubes with specified elevated temperature properties
EN 10217-3:2002	Welded steel tubes for pressure purposes - Technical delivery conditions - Part 3: Alloy fine grain steel tubes
EN 10217-4:2002	Welded steel tubes for pressure purposes - Technical delivery conditions - Part 4: Electric welded non-alloy steel tubes with specified low temperature properties
EN 10217-5:2002	Welded steel tubes for pressure purposes - Technical delivery conditions - Part 5: Submerged arc welded non-alloy and alloy steel tubes with specified elevated temperature properties
EN 10217-6:2002	Welded steel tubes for pressure purposes - Technical delivery conditions - Part 6: Submerged arc welded non-alloy steel tubes with specified low temperature properties
EN 10217-7:2014	Welded steel tubes for pressure purposes - Technical delivery conditions - Part 7: Stainless steel tubes
EN 10218-1:2012	Steel wire and wire products - General - Part 1: Test methods
EN 10218-2:2012	Steel wire and wire products - General - Part 2: Wire dimensions and tolerances
EN 10219-1:2006	Cold formed welded structural hollow sections of non-alloy and fine grain steels - Part 1: Technical delivery conditions
EN 10219-2:2006	Cold formed welded structural hollow sections of non-alloy and fine grain steels - Part 2: Tolerances, dimensions and sectional properties
EN 10221:1995	Surface quality classes for hot-rolled bars and rods - Technical delivery conditions
EN 10222-1:1998	Steel forgings for pressure purposes - Part 1: General requirements for open die forgings
EN 10222-2:1999	Steel forgings for pressure purposes - Part 2: Ferritic and martensitic steels with specified elevated temperature properties
EN 10222-3:1998	Steel forgings for pressure purposes - Part 3: Nickel steels with specified low-temperature properties
EN 10222-4:1998	Steel forgings for pressure purposes - Part 4: Weldable fine-grain steels with high proof strength

Standard	Title
EN 10222-5:1999	Steel forgings for pressure purposes - Part 5: Martensitic, austenitic and austenitic-ferritic stainless steels
EN 10223-1:2012	Steel wire and wire products for fencing and netting - Part 1: Zinc and zinc-alloy coated steel barbed wire
EN 10223-2:2012	Steel wire and wire products for fencing and netting - Part 2: Hexagonal steel wire netting for agricultural, insulation and fencing purposes
EN 10223-3:2013	Steel wire and wire products for fencing and netting - Part 3: Hexagonal steel wire mesh products for civil engineering purposes
EN 10223-4:2012	Steel wire and wire products for fencing and netting - Part 4: Steel wire welded mesh fencing
EN 10223-5:2012	Steel wire and wire products for fencing and netting - Part 5: Steel wire woven hinged joint and knotted mesh fencing
EN 10223-6:2012	Steel wire and wire products for fencing and netting - Part 6: Steel wire chain link fencing
EN 10223-7:2012	Steel wire and wire products for fencing and netting - Part 7: Steel wire welded panels for fencing
EN 10224:2002	Non-alloy steel tubes and fittings for the conveyance of aqueous liquids including water for human consumption - Technical delivery conditions
EN 10225:2009	Weldable structural steels for fixed offshore structures - Technical delivery conditions
EN 10228-1:1999	Non-destructive testing of steel forgings - Part 1: Magnetic particle inspection
EN 10228-2:1998	Non-destructive testing of steel forgings - Part 2: Penetrant testing
EN 10228-3:1998	Non-destructive testing of steel forgings - Part 3: Ultrasonic testing of ferritic or martensitic steel forgings
EN 10228-4:1999	Non-destructive testing of steel forgings - Part 4: Ultrasonic testing of austenitic and austenitic-ferritic stainless steel forgings
EN 10238:2009	Automatically blast-cleaned and automatically prefabrication primed structural steel products
EN 10240:1997	Internal and/or external protective coatings for steel tubes - Specification for hot dip galvanized coatings applied in automatic plants
EN 10241:2000	Steel threaded pipe fittings
EN 10243-1:1999	Steel die forgings - Tolerances on dimensions - Part 1: Drop and vertical press forgings
EN 10243-2:1999	Steel die forgings - Tolerances on dimensions - Part 2: Upset forgings made on horizontal forging machines
EN 10244-1:2009	Steel wire and wire products - Non-ferrous metallic coatings on steel wire - Part 1: General principles
EN 10244-2:2009	Steel wire and wire products - Non-ferrous metallic coatings on steel wire - Part 2: Zinc or zinc alloy coatings
EN 10244-3:2001	Steel wire and wire products - Non-ferrous metallic coatings on steel wire - Part 3: Aluminium coatings
EN 10244-4:2001	Steel wire and wire products - Non-ferrous metallic coatings on steel wire - Part 4: Tin coatings
EN 10244-5:2001	Steel wire and wire products - Non-ferrous metallic coatings on steel wire - Part 5: Nickel coatings
EN 10244-6:2001	Steel wire and wire products - Non-ferrous metallic coatings on steel wire - Part 6: Copper, bronze or brass coatings
EN 10245-1:2011	Steel wire and wire products - Organic coatings on steel wire - Part 1: General rules
EN 10245-2:2011	Steel wire and wire products - Organic coatings on steel wire - Part 2: PVC finished wire
EN 10245-3:2011	Steel wire and wire products - Organic coatings on steel wire - Part 3: PE coated wire
EN 10245-4:2011	Steel wire and wire products - Organic coatings on steel wire - Part 4: Polyester coated wire
EN 10245-5:2011	Steel wire and wire products - Organic coatings on steel wire - Part 5: Polyamide coated wire
EN 10248-1:1995	Hot rolled sheet piling of non alloy steels - Part 1: Technical delivery conditions
EN 10248-2:1995	Hot rolled sheet piling of non alloy steels - Part 2: Tolerances on shape and dimensions
EN 10249-1:1995	Cold formed sheet piling of non alloy steels - Part 1: Technical delivery conditions
EN 10249-2:1995	Cold formed sheet piling of non alloy steels - Part 2: Tolerances on shape and dimensions
EN 10250-1:1999	Open die steel forgings for general engineering purposes - Part 1: General requirements
EN 10250-2:1999	Open die steel forgings for general engineering purposes - Part 2: Non-alloy quality and special steels
EN 10250-3:1999	Open die steel forgings for general engineering purposes - Part 3: Alloy special steels
EN 10250-4:1999	Open die steel forgings for general engineering purposes - Part 4: Stainless steels
EN 10251:1997	Magnetic materials - Methods of determination of the geometrical characteristics of electrical steel sheet and strip
EN 10252:1997	Magnetic materials - Methods of measurement of magnetic properties of magnetic steel sheet and strip at medium frequencies
EN 10253-1:1999	Butt-welding pipe fittings - Part 1: Wrought carbon steel for general use and without specific inspection requirements
EN 10253-2:2007	Butt-welding pipe fittings - Part 2: Non-alloy and ferritic alloy steels with specific inspection requirements
EN 10253-3:2008	Butt-welding pipe fittings - Part 3: Wrought austenitic and austenitic-ferritic (duplex) stainless steels without specific inspection requirements
EN 10253-4:2008	Butt-welding pipe fittings - Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements
EN 10254:1999	Steel closed die forgings - General technical delivery conditions
EN 10255:2004	Non-alloy steel tubes suitable for welding and threading - Technical delivery conditions
EN 10257-1:2011	Zinc or zinc alloy coated non-alloy steel wire for armouring either power cables or telecommunication cables - Part 1: Land cables
EN 10257-2:2011	Zinc or zinc alloy coated non-alloy steel wire for armouring either power cables or telecommunication cables - Part 2: Submarine cables
EN 10263-1:2001	Steel rod, bars and wire for cold heading and cold extrusion - Part 1: General technical delivery conditions
EN 10263-2:2001	Steel rod, bars and wire for cold heading and cold extrusion - Part 2: Technical delivery conditions for steels not

Standard	Title
	intended for heat treatment after cold working
EN 10263-3:2001	Steel rod, bars and wire for cold heading and cold extrusion - Part 3: Technical delivery conditions for case hardening steels
EN 10263-4:2001	Steel rod, bars and wire for cold heading and cold extrusion - Part 4: Technical delivery conditions for steels for quenching and tempering
EN 10263-5:2001	Steel rod, bars and wire for cold heading and cold extrusion - Part 5: Technical delivery conditions for stainless steels
EN 10264-1:2012	Steel wire and wire products - Steel wire for ropes - Part 1: General requirements
EN 10264-2:2012	Steel wire and wire products - Steel wire for ropes - Part 2: Cold drawn non alloy steel wire for ropes for general applications
EN 10264-3:2012	Steel wire and wire products - Steel wire for ropes - Part 3: Round and shaped non alloyed steel wire for high duty applications
EN 10264-4:2012	Steel wire and wire products - Steel wire for ropes - Part 4: Stainless steel wire
EN 10267:1998	Ferritic-pearlitic steels for precipitation hardening from hot-working temperatures
EN 10268:2006	Cold rolled steel flat products with high yield strength for cold forming - Technical delivery conditions
EN 10269:2013	Steels and nickel alloys for fasteners with specified elevated and/or low temperature properties
EN 10270-1:2011	Steel wire for mechanical springs - Part 1: Patented cold drawn unalloyed spring steel wire
EN 10270-2:2011	Steel wire for mechanical springs - Part 2: Oil hardened and tempered spring steel wire
EN 10270-3:2011	Steel wire for mechanical springs - Part 3: Stainless spring steel wire
EN 10271:1998	Electrolytically zinc-nickel (ZN) coated steel flat products - Technical delivery conditions
EN 10272:2007	Stainless steel bars for pressure purposes
EN 10273:2007	Hot rolled weldable steel bars for pressure purposes with specified elevated temperature properties
EN 10277-1:2008	Bright steel products - Technical delivery conditions - Part 1: General
EN 10277-2:2008	Bright steel products - Technical delivery conditions - Part 2: Steels for general engineering purposes
EN 10277-3:2008	Bright steel products - Technical delivery conditions - Part 3: Free-cutting steels
EN 10277-4:2008	Bright steel products - Technical delivery conditions - Part 4: Case-hardening steels
EN 10277-5:2008	Bright steel products - Technical delivery conditions - Part 5: Steels for quenching and tempering
EN 10278:1999	Dimensions and tolerances of bright steel products
EN 10279:2000	Hot rolled steel channels - Tolerances on shape, dimensions and mass
EN 10283:2010	Corrosion resistant steel castings
EN 10293:2015	Steel castings - Steel castings for general engineering uses
EN 10294-1:2005	Hollow bars for machining - Technical delivery conditions - Part 1: Non alloy and alloy steels
EN 10294-2:2012	Hollow bars for machining - Technical delivery conditions - Part 2: Stainless steels with specified machinability properties
EN 10295:2002	Heat resistant steel castings
EN 10296-1:2003	Welded circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 1: Non-alloy and alloy steel tubes
EN 10296-2:2005	Welded circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel
EN 10297-1:2003	Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 1: Non-alloy and alloy steel tubes
EN 10297-2:2005	Seamless circular steel tubes for mechanical and general engineering purposes - Technical delivery conditions - Part 2: Stainless steel
EN 10302:2008	Creep resisting steels, nickel and cobalt alloys
EN 10303:2001	Thin magnetic steel sheet and strip for use at medium frequencies
EN 10305-1:2010	Steel tubes for precision applications - Technical delivery conditions - Part 1: Seamless cold drawn tubes
EN 10305-2:2010	Steel tubes for precision applications - Technical delivery conditions - Part 2: Welded cold drawn tubes
EN 10305-3:2010	Steel tubes for precision applications - Technical delivery conditions - Part 3: Welded cold sized tubes
EN 10305-4:2011	Steel tubes for precision applications - Technical delivery conditions - Part 4: Seamless cold drawn tubes for hydraulic and pneumatic power systems
EN 10305-5:2010	Steel tubes for precision applications - Technical delivery conditions - Part 5: Welded cold sized square and rectangular tubes
EN 10305-6:2005	Steel tubes for precision applications - Technical delivery conditions - Part 6: Welded cold drawn tubes for hydraulic and pneumatic power systems
EN 10312:2002	Welded stainless steel tubes for the conveyance of aqueous liquids including water for human consumption - Technical delivery conditions
EN 10324:2004	Steel wire and wire products - Hose reinforcement wire
EN 10325:2006	Steel - Determination of yield strength increase by the effect of heat treatment [Bake-Hardening-Index]
EN 10340:2007	Steel castings for structural uses
EN 10341:2006	Cold rolled electrical non-alloy and alloy steel sheet and strip delivered in the semi-processed state
EN 10343:2009	Steels for quenching and tempering for construction purposes - Technical delivery conditions
EN 10346:2015	Continuously hot-dip coated steel flat products for cold forming - Technical delivery conditions

Standard	Title
EN 10347:2006	Guidance for forming of structural steels in processing
EN 12007-1:2012	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 1: General functional requirements
EN 12007-2:2012	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 2: Specific functional requirements for polyethylene (MOP up to and including 10 bar)
EN 12007-3:2015	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 3: Specific functional requirements for steel
EN 12007-4:2012	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 4: Specific functional requirements for renovation
EN 12007-5:2014	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 5: Service lines - Specific functional requirements
EN 12269-1:2000	Determination of the bond behaviour between reinforcing steel and autoclaved aerated concrete by the "beam test" - Part 1: Short term test
EN 12269-2:2010	Determination of the bond behaviour between reinforcing steel and autoclaved aerated concrete by the beam test - Part 2: Long term test
EN 12385-1:2002	Steel wire ropes - Safety - Part 1: General requirements
EN 12385-2:2002	Steel wire ropes - Safety - Part 2: Definitions, designation and classification
EN 12385-3:2004	Steel wire ropes - Safety - Part 3: Information for use and maintenance
EN 12385-4:2002	Steel wire ropes - Safety - Part 4: Stranded ropes for general lifting applications
EN 12385-5:2002	Steel wire ropes - Safety - Part 5: Stranded ropes for lifts
EN 12385-6:2004	Steel wire ropes - Safety - Part 6: Stranded ropes for mine shafts
EN 12385-7:2002	Steel wire ropes - Safety - Part 7: Locked coil ropes for mine shafts
EN 12385-8:2002	Steel wire ropes - Safety - Part 8: Stranded hauling and carrying-hauling ropes for cableway installations designed to carry persons
EN 12385-9:2002	Steel wire ropes - Safety - Part 9: Locked coil carrying ropes for cableway installations designed to carry persons
EN 12385-10:2003	Steel wire ropes - Safety - Part 10: Spiral ropes for general structural applications
EN 12513:2011	Founding - Abrasion resistant cast irons
EN 12536:2000	Welding consumables - Rods for gas welding of non alloy and creep-resisting steels - Classification
EN 13262:2004	Railway applications - Wheelsets and bogies - Wheels - Product requirement
EN 13411-1:2002	Terminations for steel wire ropes - Safety - Part 1: Thimbles for steel wire rope slings
EN 13411-2-2001	Terminations for steel wire ropes - Safety - Part 2: Splicing of eyes for wire rope slings
EN 13411-3:2004	Terminations for steel wire ropes - Safety - Part 3: Ferrules and ferrule-securing
EN 13411-4:2011	Terminations for steel wire ropes - Safety - Part 4: Metal and resin socketing
EN 13411-5:2003	Terminations for steel wire ropes - Safety - Part 5: U-bolt wire rope grips
EN 13411-6:2004	Terminations for steel wire ropes - Safety - Part 6: Asymmetric wedge socket
EN 13674-1:2011	Railway applications - Track - Rail - Part 1: Vignole railway rails 46 kg/m and above
EN 13674-2:2006	Railway applications - Track - Rail - Part 2: Switch and crossing rails used in conjunction with Vignole railway rails 46 kg/m and above
EN 13674-3:2006	Railway applications - Track - Rail - Part 3: Check rails
EN 13674-4:2006	Railway applications - Track - Rail - Part 4: Vignole railway rails from 27 kg/m to, but excluding 46 kg/m
EN 13835:2012	Founding - Austenitic cast irons
EN 14195:2014	Metal framing components for gypsum board systems - Definitions, requirements and test methods
EN 14783:2013	Fully supported metal sheet and strip for roofing, external cladding and internal lining - Product specification and requirements
EN 50446:2006	Straight thermocouple assembly with metal or ceramic protection tube and accessories

Appendix 5

EN ISO CURRENT STEEL STANDARDS

Standard	Title
EN ISO 636:2008	Welding consumables - Rods, wires and deposits for tungsten inert gas welding of non-alloy and fine-grain steels - Classification
EN ISO 683-17:2014	Heat-treated steels, alloy steels and free-cutting steels - Part 17: Ball and roller bearing steels
EN ISO 1127:1996	Stainless steel tubes - Dimensions, tolerances and conventional masses per unit length
EN ISO 3183:2012	Petroleum and natural gas industries - Steel pipe for pipeline transportation systems
EN ISO 3580:2011	Welding consumables - Covered electrodes for manual metal arc welding of creep-resisting steels - Classification
EN ISO 3581:2012	Welding consumables - Covered electrodes for manual metal arc welding of stainless and heat-resisting steels - Classification
EN ISO 3766:2003	Construction drawings - Simplified representation of concrete reinforcement
EN ISO 4957:1999	Tool steels
EN ISO 7153-1:2000	Surgical instruments - Metallic Materials - Part 1: Stainless steel
EN ISO 9445-1:2010	Continuously cold-rolled stainless steel - Tolerances on dimensions and form - Part 1: Narrow strip and cut lengths
EN ISO 9445-2:2010	Continuously cold-rolled stainless steel - Tolerances on dimensions and form - Part 2: Wide strip and plate/sheet
EN ISO 10893-1:2011	Non-destructive testing of steel tubes - Part 1: Automated electromagnetic testing of seamless and welded (except submerged arc-welded) steel tubes for the verification of hydraulic leaktightness
EN ISO 10893-2:2011	Non-destructive testing of steel tubes - Part 2: Automated eddy current testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of imperfections
EN ISO 10893-3:2011	Non-destructive testing of steel tubes - Part 3: Automated full peripheral flux leakage testing of seamless and welded (except submerged arc-welded) ferromagnetic steel tubes for the detection of longitudinal and/or transverse imperfections
EN ISO 10893-4:2011	Non-destructive testing of steel tubes - Part 4: Liquid penetrant inspection of seamless and welded steel tubes for the detection of surface imperfections
EN ISO 10893-5:2011	Non-destructive testing of steel tubes - Part 5: Magnetic particle inspection of seamless and welded ferromagnetic steel tubes for the detection of surface imperfections
EN ISO 10893-6:2011	Non-destructive testing of steel tubes - Part 6: Radiographic testing of the weld seam of welded steel tubes for the detection of imperfections
EN ISO 10893-7:2011	Non-destructive testing of steel tubes - Part 7: Digital radiographic testing of the weld seam of welded steel tubes for the detection of imperfections
EN ISO 10893-8:2011	Non-destructive testing of steel tubes - Part 8: Automated ultrasonic testing of seamless and welded steel tubes for the detection of laminar imperfections
EN ISO 10893-9:2011	Non-destructive testing of steel tubes - Part 9: Automated ultrasonic testing for the detection of laminar imperfections in strip/plate used for the manufacture of welded steel tubes
EN ISO 10893-10:2011	Non-destructive testing of steel tubes - Part 10: Automated full peripheral ultrasonic testing of seamless and welded (except submerged arc-welded) steel tubes for the detection of longitudinal and/or transverse imperfections
EN ISO 10893-11:2011	Non-destructive testing of steel tubes - Part 11: Automated ultrasonic testing of the weld seam of welded steel tubes for the detection of longitudinal and/or transverse imperfections
EN ISO 10893-12:2011	Non-destructive testing of steel tubes - Part 12: Automated full peripheral ultrasonic thickness testing of seamless and welded (except submerged arc-welded) steel tubes
EN ISO 11960:2014	Petroleum and natural gas industries - Steel pipes for use as casing or tubing for wells
EN ISO 14171:2010	Welding consumables - Solid wire electrodes, tubular cored electrodes and electrode/flux combinations for submerged arc welding of non alloy and fine grain steels - Classification
EN ISO 14341:2011	Welding consumables - Wire electrodes and weld deposits for gas shielded metal arc welding of non alloy and fine grain steels - Classification
EN ISO 14343:2009	Welding consumables - Wire electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels - Classification
EN ISO 16120-1:2011	Non-alloy steel wire rod for conversion to wire - Part 1: General requirements
EN ISO 16120-2:2011	Non-alloy steel wire rod for conversion to wire - Part 2: Specific requirements for general-purpose wire rod
EN ISO 16120-3:2011	Non-alloy steel wire rod for conversion to wire - Part 3: Specific requirements for rimmed and rimmed substitute, low-carbon steel wire rod
EN ISO 16120-4:2011	Non-alloy steel wire rod for conversion to wire - Part 4: Specific requirements for wire rod for special applications
EN ISO 17632:2008	Welding consumables - Tubular cored electrodes for gas shielded and non-gas shielded metal arc welding of non-alloy and fine grain steels - Classification
EN ISO 21952:2012	Welding consumables - Wire electrodes, wires, rods and deposits for gas shielded arc welding of creep-resisting steels - Classification

Appendix

6

ISO IRON AND STEEL PRODUCT STANDARDS

Standard	Title
ISO 65:1981	Carbon steel tubes suitable for screwing in accordance with ISO 7-1
ISO 404:1992	Steel and steel products -- General technical delivery requirements
ISO 559:1991	Steel tubes for water and sewage
ISO 630:1995	Structural steels -- Plates, wide flats, bars, sections and profiles
ISO 630-2:2000	Structural steels – Part 2: Technical delivery requirements for hot-finished hollow sections
ISO 657-1:1989	Hot-rolled steel sections -- Part 1: Equal-leg angles -- Dimensions
ISO 657-2:1989	Hot-rolled steel sections -- Part 2: Unequal-leg angles -- Dimensions
ISO 657-5:1976	Hot-rolled steel sections -- Part 5: Equal-leg angles and unequal-leg angles -- Tolerances for metric and inch series
ISO 657-11:1980	Hot-rolled steel sections -- Part 11: Sloping flange channel sections (Metric series) -- Dimensions and sectional properties
ISO 657-14:2000	Hot-rolled steel sections -- Part 14: Hot-finished structural hollow sections -- Dimensions and sectional properties
ISO 657-15:1980	Hot-rolled steel sections -- Part 15: Sloping flange beam sections (Metric series) -- Dimensions and sectional properties
ISO 657-16:1980	Hot-rolled steel sections -- Part 16: Sloping flange column sections (metric series) -- Dimensions and sectional properties
ISO 657-18:1980	Hot-rolled steel sections -- Part 18: L sections for shipbuilding (metric series) -- Dimensions, sectional properties and tolerances
ISO 657-19:1980	Hot-rolled steel sections -- Part 19: Bulb flats (metric series) -- Dimensions, sectional properties and tolerances
ISO 657-21:1983	Hot-rolled steel sections -- Part 21: T-sections with equal depth and flange width -- Dimensions
ISO 683-1:1987	Heat-treatable steels, alloy steels and free-cutting steels -- Part 1: Direct-hardening unalloyed and low-alloyed wrought steel in form of different black products
ISO 683-9:1988	Heat-treatable steels, alloy steels and free-cutting steels -- Part 9: Wrought free-cutting steels
ISO 683-10:1987	Heat-treatable steels, alloy steels and free-cutting steels -- Part 10: Wrought nitriding steels
ISO 683-11:1987	Heat-treatable steels, alloy steels and free-cutting steels -- Part 11: Wrought case-hardening steels
ISO 683-14:2004	Heat-treatable steels, alloy steels and free-cutting steels -- Part 14: Hot-rolled steels for quenched and tempered springs
ISO 683-15:1992	Heat-treatable steels, alloy steels and free-cutting steels -- Part 15: Valve steels for internal combustion engines
ISO 683-17:1999	Heat-treated steels, alloy steels and free-cutting steels -- Part 17: Ball and roller bearing steels
ISO 683-18:1996	Heat-treatable steels, alloy steels and free- cutting steels -- Part 18: Bright products of unalloyed and low alloy steels
ISO 722:1991	Rock drilling equipment -- Hollow drill steels in bar form, hexagonal and round
ISO 1035-1:1980	Hot-rolled steel bars -- Part 1: Dimensions of round bars
ISO 1035-2:1980	Hot-rolled steel bars -- Part 2: Dimensions of square bars
ISO 1035-3:1980	Hot-rolled steel bars -- Part 3: Dimensions of flat bars
ISO 1035-4:1982	Hot-rolled steel bars -- Part 4: Tolerances
ISO 1052:1982	Steels for general engineering purposes
ISO 1127:1992	Stainless steel tubes -- Dimensions, tolerances and conventional masses per unit length
ISO 1129:1980	Steel tubes for boilers, superheaters and heat exchangers -- Dimensions, tolerances and conventional masses per unit length
ISO 1834:1999	Short link chain for lifting purposes -- General conditions of acceptance
ISO 1835:1980	Short link chain for lifting purposes -- Grade M (4), non-calibrated, for chain slings etc.
ISO 1837:2003	Lifting hooks -- Nomenclature
ISO 2037:1992	Stainless steel tubes for the food industry
ISO 2232:1990	Round drawn wire for general purpose non-alloy steel wire ropes and for large diameter steel wire ropes -- Specifications
ISO 2262:1984	General purpose thimbles for use with steel wire ropes -- Specification
ISO 2308:1972	Hooks for lifting freight containers of up to 30 tonnes capacity -- Basic requirements
ISO 2408:2004	Steel wire ropes for general purposes -- Minimum requirements
ISO 2415:2004	Forged shackles for general lifting purposes -- Dee shackles and bow shackles
ISO 2531:1998	Ductile iron pipes, fittings, accessories and their joints for water or gas applications
ISO 2532:1974	Steel wire ropes -- Vocabulary
ISO 2605-3:1985	Steel products for pressure purposes -- Derivation and verification of elevated temperature properties -- Part 3: An alternative procedure for deriving the elevated temperature yield or proof stress properties when data are limited
ISO 2701:1977	Drawn wire for general purpose non-alloy steel wire ropes -- Terms of acceptance
ISO 2937:1974	Plain end seamless steel tubes for mechanical application
ISO 2938:1974	Hollow steel bars for machining
ISO 3056:1986	Non-calibrated round steel link lifting chain and chain slings -- Use and maintenance
ISO 3075:1980	Short link chain for lifting purposes -- Grade S (6) non calibrated, for chain slings etc.
ISO 3076:1984	Short link chain for lifting purposes -- Grade T (8), non-calibrated, for chain slings etc.

Standard	Title
ISO 3077:2001	Short-link chain for lifting purposes -- Grade T, (types T, DAT and DT), fine-tolerance hoist chain
ISO 3108:1974	Steel wire ropes for general purposes -- Determination of actual breaking load
ISO 3183:2007	Petroleum and natural gas industries -- Steel pipe for pipeline transportation systems
ISO 3189-1:1985	Sockets for wire ropes for general purposes -- Part 1: General characteristics and conditions of acceptance
ISO 3189-2:1985	Sockets for wire ropes for general purposes -- Part 2: Special requirements for sockets produced by forging or machined from the solid
ISO 3189-3:1985	Sockets for wire ropes for general purposes -- Part 3: Special requirements for sockets produced by casting
ISO 3266:1984	Eyebolts for general lifting purposes
ISO 3304:1985	Plain end seamless precision steel tubes -- Technical conditions for delivery
ISO 3305:1985	Plain end welded precision steel tubes -- Technical conditions for delivery
ISO 3306:1985	Plain end as-welded and sized precision steel tubes -- Technical conditions for delivery
ISO 3545-1:1989	Steel tubes and fittings -- Symbols for use in specifications -- Part 1: Tubes and tubular accessories with circular cross-section
ISO 3545-2:1989	Steel tubes and fittings -- Symbols for use in specifications -- Part 2: Square and rectangular hollow sections
ISO 3573:1999	Hot-rolled carbon steel sheet of commercial and drawing qualities
ISO 3574:1999	Cold-reduced carbon steel sheet of commercial and drawing qualities
ISO 3575:2005	Continuous hot-dip zinc-coated carbon steel sheet of commercial and drawing qualities
ISO 3755:1991	Cast carbon steels for general engineering purposes
ISO 4019:2001	Structural steels -- Cold-formed, welded, structural hollow sections -- Dimensions and sectional properties
ISO 4101:1983	Drawn steel wire for elevator ropes -- Specifications
ISO 4179:2005	Ductile iron pipes for pressure and non-pressure pipelines -- Centrifugal cement mortar lining -- General requirements
ISO 4200:1991	Plain end steel tubes, welded and seamless -- General tables of dimensions and masses per unit length
ISO 4308-1:2003	Cranes and lifting appliances -- Selection of wire ropes -- Part 1: General
ISO 4308-2:1988	Cranes and lifting appliances -- Selection of wire ropes -- Part 2: Mobile cranes -- Coefficient of utilization
ISO 4309:2004	Cranes -- Wire ropes -- Care, maintenance, installation, examination and discard
ISO 4344:2004	Steel wire ropes for lifts -- Minimum requirements
ISO 4345:1988	Steel wire ropes -- Fibre main cores -- Specification
ISO 4346:1977	Steel wire ropes for general purposes -- Lubricants -- Basic requirements
ISO 4778:1981	Chain slings of welded construction -- Grades M (4), S (6) and T (8)
ISO 4779:1986	Forged steel lifting hooks with point and eye for use with steel chains of grade M(4)
ISO 4885:1996	Ferrous products -- Heat treatments -- Vocabulary
ISO 4950-1:1995	High yield strength flat steel products -- Part 1: General requirements
ISO 4950-2:1995	High yield strength flat steel products -- Part 2: Products supplied in the normalized or controlled rolled condition
ISO 4950-3:1995	High yield strength flat steel products -- Part 3: Products supplied in the heat-treated (quenched + tempered) condition
ISO 4951-1:2001	High yield strength steel bars and sections -- Part 1: General delivery requirements
ISO 4951-2:2001	High yield strength steel bars and sections -- Part 2: Delivery conditions for normalized, normalized rolled and as-rolled steels
ISO 4951-3:2001	High yield strength steel bars and sections -- Part 3: Delivery conditions for thermomechanically-rolled steels
ISO 4952:2006	Structural steels with improved atmospheric corrosion resistance
ISO 4954:1993	Steels for cold heading and cold extruding
ISO 4955:2005	Heat-resistant steels
ISO 4957:1999	Tool steels
ISO 4960:1999	Cold-reduced carbon steel strip with a carbon content over 0,25 %
ISO 4978:1983	Flat rolled steel products for welded gas cylinders
ISO 4986:1992	Steel castings -- Magnetic particle inspection
ISO 4987:1992	Steel castings -- Penetrant inspection
ISO 4990:2003	Steel castings -- General technical delivery requirements
ISO 4991:2005	Steel castings for pressure purposes
ISO 4993:1987	Steel castings -- Radiographic inspection
ISO 4995:2001	Hot-rolled steel sheet of structural quality
ISO 4996:2007	Hot-rolled steel sheet of high yield stress structural quality
ISO 4997:2007	Cold-reduced carbon steel sheet of structural quality
ISO 4998:2005	Continuous hot-dip zinc-coated carbon steel sheet of structural quality
ISO 4999:2005	Continuous hot-dip terne (lead alloy) coated cold-reduced carbon steel sheet of commercial, drawing and structural qualities
ISO 5000:2005	Continuous hot-dip aluminium-silicon-coated cold-reduced carbon steel sheet of commercial and drawing qualities

Standard	Title
ISO 5001:2007	Cold-reduced carbon steel sheet for vitreous enamelling
ISO 5002:1999	Hot-rolled and cold-reduced electrolytic zinc-coated carbon steel sheet of commercial and drawing qualities
ISO 5252:1991	Steel tubes -- Tolerance systems
ISO 5256:1985	Steel pipes and fittings for buried or submerged pipe lines -- External and internal coating by bitumen or coal tar derived materials
ISO 5949:1983	Tool steels and bearing steels -- Micrographic method for assessing the distribution of carbides using reference photomicrographs
ISO 5950:2000	Continuous electrolytic tin-coated cold-reduced carbon steel sheet of commercial and drawing qualities
ISO 5951:2001	Hot-rolled steel sheet of higher yield strength with improved formability
ISO 5952:2005	Continuously hot-rolled steel sheet of structural quality with improved atmospheric corrosion resistance
ISO 5954:1998	Cold-reduced carbon steel sheet according to hardness requirements
ISO 6303:1981	Pressure vessel steels not included in ISO 2604, Parts 1 to 6 -- Derivation of long-time stress rupture properties
ISO 6316:2000	Hot-rolled steel strip of structural quality
ISO 6317:2000	Hot-rolled carbon steel strip of commercial and drawing qualities
ISO 6594:2006	Cast iron drainage pipes and fittings -- Spigot series
ISO 6758:1980	Welded steel tubes for heat exchangers
ISO 6759:1980	Seamless steel tubes for heat exchangers
ISO 6761:1981	Steel tubes -- Preparation of ends of tubes and fittings for welding
ISO 6929:1987	Steel products -- Definitions and classification
ISO 6930-1:2001	High yield strength steel plates and wide flats for cold forming -- Part 1: Delivery conditions for thermomechanically-rolled steels
ISO 6930-2:2004	High yield strength steel plates and wide flats for cold forming -- Part 2: Delivery condition for normalized, normalized rolled and as-rolled steels
ISO 6931-1:1994	Stainless steels for springs -- Part 1: Wire
ISO 6931-2:2005	Stainless steels for springs -- Part 2: Narrow strip
ISO 6932:2001	Cold-reduced carbon steel strip with a maximum carbon content of 0,25 %
ISO 6934-1:1991	Steel for the prestressing of concrete -- Part 1: General requirements
ISO 6934-2:1991	Steel for the prestressing of concrete -- Part 2: Cold-drawn wire
ISO 6934-3:1991	Steel for the prestressing of concrete -- Part 3: Quenched and tempered wire
ISO 6934-4:1991	Steel for the prestressing of concrete -- Part 4: Strand
ISO 6934-5:1991	Steel for the prestressing of concrete -- Part 5: Hot-rolled steel bars with or without subsequent processing
ISO 6935-1:1991	Steel for the reinforcement of concrete -- Part 1: Plain bars
ISO 6935-2:1991	Steel for the reinforcement of concrete -- Part 2: Ribbed bars
ISO 6935-3:1992	Steel for the reinforcement of concrete -- Part 3: Welded fabric
ISO 6984:1990	Round non-alloy steel wires for stranded wire ropes for mine hoisting -- Specifications
ISO 7153-1:1991	Surgical instruments -- Metallic materials -- Part 1: Stainless steel Amd 1:1999
ISO 7186:1996	Ductile iron products for sewage applications
ISO 7452:2002	Hot-rolled structural steel plates -- Tolerances on dimensions and shape
ISO/TR 7468:1981	Summary of average stress rupture properties of wrought steels for boilers and pressure vessels
ISO 7531:1987	Wire rope slings for general purposes -- Characteristics and specifications
ISO 7592:1983	Calibrated round steel link lifting chains -- Guidelines to proper use and maintenance
ISO 7593:1986	Chain slings assembled by methods other than welding -- Grade T(8)
ISO 7597:1987	Forged steel lifting hooks with point and eye for use with steel chains of grade T(8)
ISO 7598:1988	Stainless steel tubes suitable for screwing in accordance with ISO 7-1
ISO 7778:1983	Steel plate with specified through-thickness characteristics
ISO 7788:1985	Steel -- Surface finish of hot-rolled plates and wide flats -- Delivery requirements
ISO 7900:2006	Steel wire and wire products for fences -- Zinc-and zinc-alloy-coated steel barbed wire
ISO 7989-1:2006	Steel wire and wire products -- Non-ferrous metallic coatings on steel wire -- Part 1: General principles
ISO 7989-2:2007	Steel wire and wire products -- Non-ferrous metallic coatings on steel wire -- Part 2: Zinc or zinc-alloy coating
ISO 8179-1:2004	Ductile iron pipes -- External zinc-based coating -- Part 1: Metallic zinc with finishing layer
ISO 8179-2:1995	Ductile iron pipes -- External zinc coating -- Part 2: Zinc rich paint with finishing layer
ISO 8180:2006	Ductile iron pipes -- Polyethylene sleeving for site application
ISO 8458-1:2002	Steel wire for mechanical springs -- Part 1: General requirements
ISO 8458-2:2002	Steel wire for mechanical springs -- Part 2: Patented cold-drawn non-alloy steel wire
ISO 8458-3:2002	Steel wire for mechanical springs -- Part 3: Oil-hardened and tempered wire
ISO 8539:1986	Forged steel lifting components for use with grade T(8) chain
ISO 8792:1986	Wire rope slings -- Safety criteria and inspection procedures for use

Standard	Title
ISO 8793:1986	Steel wire ropes -- Ferrule-secured eye terminations
ISO 8794:1986	Steel wire ropes -- Spliced eye terminations for slings
ISO 9034:1987	Hot-rolled structural steel wide flats -- Tolerances on dimensions and shape
ISO 9095:1990	Steel tubes -- Continuous character marking and colour coding for material identification
ISO 9302:1994	Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes -- Electromagnetic testing for verification of hydraulic leak-tightness
ISO 9303:1989	Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes -- Full peripheral ultrasonic testing for the detection of longitudinal imperfections
ISO 9304:1989	Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes -- Eddy current testing for the detection of imperfections
ISO 9305:1989	Seamless steel tubes for pressure purposes -- Full peripheral ultrasonic testing for the detection of transverse imperfections
ISO 9327-1:1999	Steel forgings and rolled or forged bars for pressure purposes -- Technical delivery conditions -- Part 1: General requirements
ISO 9327-2:1999	Steel forgings and rolled or forged bars for pressure purposes -- Technical delivery conditions -- Part 2: Non-alloy and alloy (Mo, Cr and CrMo) steels with specified elevated temperature properties
ISO 9327-3:1999	Steel forgings and rolled or forged bars for pressure purposes -- Technical delivery conditions -- Part 3: Nickel steels with specified low temperature properties
ISO 9327-4:1999	Steel forgings and rolled or forged bars for pressure purposes -- Technical delivery conditions -- Part 4: Weldable fine grain steels with high proof strength
ISO 9327-5:1999	Steel forgings and rolled or forged bars for pressure purposes -- Technical delivery conditions -- Part 5: Stainless steels
ISO 9328-1:2003	Steel flat products for pressure purposes -- Technical delivery conditions -- Part 1: General requirements
ISO 9328-2:2004	Steel flat products for pressure purposes -- Technical delivery conditions -- Part 2: Non-alloy and alloy steels with specified elevated temperature properties
ISO 9328-3:2004	Steel flat products for pressure purposes -- Technical delivery conditions -- Part 3: Weldable fine grain steels, normalized
ISO 9328-4:2004	Steel flat products for pressure purposes -- Technical delivery conditions -- Part 4: Nickel-alloy steels with specified low temperature properties
ISO 9328-5:2004	Steel flat products for pressure purposes -- Technical delivery conditions -- Part 5: Weldable fine grain steels, thermomechanically rolled
ISO 9328-6:2004	Steel flat products for pressure purposes -- Technical delivery conditions -- Part 6: Weldable fine grain steels, quenched and tempered
ISO 9328-7:2004	Steel flat products for pressure purposes -- Technical delivery conditions -- Part 7: Stainless steels
ISO 9329-1:1989	Seamless steel tubes for pressure purposes -- Technical delivery conditions -- Part 1: Unalloyed steels with specified room temperature properties
ISO 9329-2:1997	Seamless steel tubes for pressure purposes -- Technical delivery conditions -- Part 2: Unalloyed and alloyed steels with specified elevated temperature properties
ISO 9329-3:1997	Seamless steel tubes for pressure purposes -- Technical delivery conditions -- Part 3: Unalloyed and alloyed steels with specified low temperature properties
ISO 9329-4:1997	Seamless steel tubes for pressure purposes -- Technical delivery conditions -- Part 4: Austenitic stainless steels
ISO 9330-1:1990	Welded steel tubes for pressure purposes -- Technical delivery conditions -- Part 1: Unalloyed steel tubes with specified room temperature properties
ISO 9330-2:1997	Welded steel tubes for pressure purposes -- Technical delivery conditions -- Part 2: Electric resistance and induction welded unalloyed and alloyed steel tubes with specified elevated temperature properties
ISO 9330-3:1997	Welded steel tubes for pressure purposes -- Technical delivery conditions -- Part 3: Electric resistance and induction welded unalloyed and alloyed steel tubes with specified low temperature properties
ISO 9330-4:2000	Welded steel tubes for pressure purposes -- Technical delivery conditions -- Part 4: Submerged arc-welded unalloyed and alloyed steel tubes with specified elevated temperature properties
ISO 9330-5:2000	Welded steel tubes for pressure purposes -- Technical delivery conditions -- Part 5: Submerged arc-welded unalloyed and alloyed steel tubes with specified low temperature properties
ISO 9330-6:1997	Welded steel tubes for pressure purposes -- Technical delivery conditions -- Part 6: Longitudinally welded austenitic stainless steel tubes
ISO 9364:2006	Continuous hot-dip aluminium/zinc-coated steel sheet of commercial, drawing and structural qualities
ISO 9402:1989	Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes -- Full peripheral magnetic transducer/flux leakage testing of ferromagnetic steel tubes for the detection of longitudinal imperfections
ISO 9442:1988	Steel -- Hot-rolled ribbed and grooved flats for spring leaves -- Tolerances and dimensions
ISO 9443:1991	Heat-treatable and alloy steels -- Surface quality classes for hot-rolled round bars and wire rods -- Technical delivery conditions
ISO 9444:2002	Continuously hot-rolled stainless steel strip, plate/sheet and cut lengths -- Tolerances on dimensions and form
ISO 9445:2002	Continuously cold-rolled stainless steel narrow strip, wide strip, plate/sheet and cut lengths -- Tolerances on dimensions and form
ISO 9473-1:2006	Textile machinery and accessories -- Strip steel for dents of reeds -- Part 1: Cold rolled strip steel
ISO 9473-2:2006	Textile machinery and accessories -- Strip steel for dents of reeds -- Part 2: Hardened strip steel

Standard	Title
ISO 9477:1992	High strength cast steels for general engineering and structural purposes
ISO 9598:1989	Seamless steel tubes for pressure purposes -- Full peripheral magnetic transducer/flux leakage testing of ferromagnetic steel tubes for the detection of transverse imperfections
ISO 9764:1989	Electric resistance and induction welded steel tubes for pressure purposes -- Ultrasonic testing of the weld seam for the detection of longitudinal imperfections
ISO 9765:1990	Submerged arc-welded steel tubes for pressure purposes -- Ultrasonic testing of the weld seam for the detection of longitudinal and/or transverse imperfections
ISO 9975:1990	Round non-alloy steel wires for locked coil mine winding ropes -- Specifications
ISO 10124:1994	Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes -- Ultrasonic testing for the detection of laminar imperfections
ISO 10144:1991	Certification scheme for steel bars and wires for the reinforcement of concrete structures
ISO 10332:1994	Seamless and welded (except submerged arc-welded) steel tubes for pressure purposes -- Ultrasonic testing for the verification of hydraulic leak-tightness
ISO 10384:2001	Hot-rolled carbon steel sheet for machinery
ISO 10425:2003	Steel wire ropes for the petroleum and natural gas industries -- Minimum requirements and terms of acceptance
ISO 10474:1991	Steel and steel products -- Inspection documents
ISO 10543:1993	Seamless and hot-stretch-reduced welded steel tubes for pressure purposes -- Full peripheral ultrasonic thickness testing
ISO 10544:1992	Cold-reduced steel wire for the reinforcement of concrete and the manufacture of welded fabric
ISO 10763:1994	Hydraulic fluid power -- Plain-end, seamless and welded precision steel tubes -- Dimensions and nominal working pressures
ISO 10799:2001	Structural steels -- Cold-formed, welded, structural hollow sections -- Technical delivery requirements
ISO 10803:1999	Design method for ductile iron pipes
ISO 11054:2006	Cutting tools -- Designation of high-speed steel groups
ISO 11082:1992	Certification scheme for welded fabric for the reinforcement of concrete structures
ISO 11484:1994	Steel tubes for pressure purposes -- Qualification and certification of non-destructive testing (NDT) personnel
ISO 11496:1993	Seamless and welded steel tubes for pressure purposes -- Ultrasonic testing of tube ends for the detection of laminar imperfections
ISO/TR 11637:1997	Boron treated engineering steels for quenching and tempering
ISO 11692:1994	Ferritic-pearlitic engineering steels for precipitation hardening from hot-working temperatures
ISO 11949:1995	Cold-reduced electrolytic tinplate
ISO 11950:1995	Cold-reduced electrolytic chromium/chromium oxide-coated steel
ISO 11951:1995	Cold-reduced blackplate in coil form for the production of tinplate or electrolytic chromium/chromium oxide-coated steel
ISO 11960:2004	Petroleum and natural gas industries -- Steel pipes for use as casing or tubing for wells
ISO 11961:1996	Petroleum and natural gas industries -- Steel pipes for use as drill pipe -- Specification
ISO 11970:2001	Specification and approval of welding procedures for production welding of steel castings
ISO 11971:1997	Visual examination of surface quality of steel castings
ISO 11972:1998	Corrosion-resistant cast steels for general applications
ISO 11973:1999	Heat-resistant cast steels and alloys for general applications
ISO 12094:1994	Welded steel tubes for pressure purposes -- Ultrasonic testing for the detection of laminar imperfections in strips/plates used in the manufacture of welded tubes
ISO 12095:1994	Seamless and welded steel tubes for pressure purposes -- Liquid penetrant testing
ISO 12096:1996	Submerged arc-welded steel tubes for pressure purposes -- Radiographic testing of the weld seam for the detection of imperfections
ISO/TR 12662:1997	Certification scheme for prestressing steels
ISO 13521:1999	Austenitic manganese steel castings
ISO 13583-1:2000	Centrifugally cast steel and alloy products -- Part 1: General testing and tolerances
ISO 13583-2:2003	Centrifugally cast steel and alloy products -- Part 2: Heat resistant materials
ISO 13663:1995	Welded steel tubes for pressure purposes -- Ultrasonic testing of the area adjacent to the weld seam for the detection of laminar imperfections
ISO 13664:1997	Seamless and welded steel tubes for pressure purposes -- Magnetic particle inspection of the tube ends for the detection of laminar imperfections
ISO 13665:1997	Seamless and welded steel tubes for pressure purposes -- Magnetic particle inspection of the tube body for the detection of surface imperfections
ISO 13680:2000	Petroleum and natural gas industries -- Corrosion-resistant alloy seamless tubes for use as casing, tubing and coupling stock -- Technical delivery conditions
ISO 13887:2004	Cold-reduced steel sheet of higher yield strength with improved formability
ISO 13976:2005	Hot-rolled steel sheet in coils of structural quality and heavy thickness
ISO 14590:2005	Cold-reduced steel sheet of high tensile strength and low yield point with improved formability

Standard	Title
ISO 14654:1999	Epoxy-coated steel for the reinforcement of concrete
ISO 14655:1999	Epoxy-coated strand for the prestressing of concrete
ISO 14656:1999	Epoxy powder and sealing material for the coating of steel for the reinforcement of concrete
ISO 14657:2005	Zinc-coated steel for the reinforcement of concrete
ISO 14737:2003	Cast non-alloy and low alloy steels for general applications
ISO 14788:2005	Continuous hot-dip zinc-5 % aluminium alloy coated steel sheet
ISO/TR 15461:1997	Steel forgings -- Testing frequency, sampling conditions and test methods for mechanical tests
ISO/TR 15510:2003	Stainless steels -- Chemical composition
ISO 15630-1:2002	Steel for the reinforcement and prestressing of concrete -- Test methods -- Part 1: Reinforcing bars, wire rod and wire
ISO 15630-2:2002	Steel for the reinforcement and prestressing of concrete -- Test methods -- Part 2: Welded fabric
ISO 15630-3:2002	Steel for the reinforcement and prestressing of concrete -- Test methods -- Part 3: Prestressing steel
ISO 16120-1:2001	Non-alloy steel wire rod for conversion to wire -- Part 1: General requirements
ISO 16120-2:2001	Non-alloy steel wire rod for conversion to wire -- Part 2: Specific requirements for general purpose wire rod
ISO 16120-3:2001	Non-alloy steel wire rod for conversion to wire -- Part 3: Specific requirements for rimmed and rimmed-substitute, low-carbon steel wire rod
ISO 16120-4:2001	Non-alloy steel wire rod for conversion to wire -- Part 4: Specific requirements for wire rod for special applications
ISO 16143-1:2004	Stainless steels for general purposes -- Part 1: Flat products
ISO 16143-2:2004	Stainless steels for general purposes -- Part 2: Semi-finished products, bars, rods and sections
ISO 16143-3:2005	Stainless steels for general purposes -- Part 3: wire
ISO 16160:2005	Continuously hot-rolled steel sheet products -- Dimensional and shape tolerances
ISO 16162:2005	Continuously cold-rolled steel sheet products -- Dimensional and shape tolerances
ISO 16163:2005	Continuously hot-dipped coated steel sheet products -- Dimensional and shape tolerances
ISO 16172:2006	Continuous hot-dip metallic-coated steel sheet for corrugated steel pipe
ISO 16650:2004	Bead wire
ISO 20723:2004	Structural steels -- Surface condition of hot-rolled sections -- Delivery requirements
ISO 20805:2005	Hot-rolled steel sheet in coils of higher yield strength with improved formability and heavy thickness for cold forming
ISO 23717:2006	Steel wire and wire products -- Hose reinforcement wire
ISO 24314:2006	Structural steels -- Structural steels for building with improved seismic resistance -- Technical delivery conditions

Appendix

7

ASTM A941-15 STANDARD TERMINOLOGY RELATING TO STEEL, STAINLESS STEEL, RELATED ALLOYS, AND FERROALLOYS

Designation: A941 – 15

Standard Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys[1]

This standard is issued under the fixed designation A941; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This standard is a compilation of definitions of terms related to steel, stainless steel, related alloys, and ferroalloys.

1.2 When a term is used in an ASTM document for which Committee A01 is responsible, it is included herein only when judged, after review by Subcommittee A01.92, to be a generally usable term.

1.3 Some definitions include a discussion section, which is a mandatory part of the definition and contains additional information that is relevant to the meaning of the defined term.

1.4 Definitions of terms specific to a particular standard will appear in that standard and will supersede any definitions of identical terms in this standard.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E112 Test Methods for Determining Average Grain Size

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

Ac_{cm}, Ac_1, Ac_3, Ac_4—See **transformation temperature**.

Ae_{cm}, Ae_1, Ae_3, Ae_4—See **transformation temperature**.

age hardening, *n*—hardening by **aging**, usually after rapid cooling or **cold working**.

age hardening, *n*—see **precipitation hardening**.

aging, *n*—a change in the properties of certain **steels** that occurs at ambient or moderately elevated temperatures after hot working or a heat treatment (**quench aging, natural aging,** or **artificial aging**) or after a cold-working operation (**strain aging**).

DISCUSSION—The change in properties is often, but not always, due to **precipitation hardening**, but never involves a change in the chemical composition of the **steel**.

alloy steel, *n*—a **steel**, other than a **stainless steel**, that conforms to a specification that requires one or more of the following elements, by mass percent, to have a minimum content equal to or greater than: 0.30 for aluminum; 0.0008 for boron; 0.30 for chromium; 0.30 for cobalt; 0.40 for copper; 0.40 for lead; 1.65 for manganese; 0.08 for molybdenum; 0.30 for nickel; 0.06 for niobium (columbium); 0.60 for silicon; 0.05 for titanium; 0.30 for tungsten (wolfram); 0.10 for vanadium; 0.05 for zirconium; or 0.10 for any other alloying element, except sulphur, phosphorus, carbon, and nitrogen.

annealing, *n*—a generic term covering any of several **heat treatments**.

DISCUSSION—This treatment is used for purposes such as reducing hardness, improving machinability, facilitating **cold working**, producing a desired microstructure, or obtaining desired mechanical, physical, or other properties. Where applicable, it is preferred that the following more specific terms be used: **box annealing, bright annealing, full annealing, intermediate annealing, isothermal annealing, process annealing, spheroidizing**, and **subcritical annealing**. The term "**annealing**," without qualification, implies **full annealing**. Any process of **annealing** will usually reduce stresses; however, if the treatment is applied for the sole purpose of stress reduction, it should be designated **stress relieving**.

Ar_{cm}, Ar_1, Ar_3, Ar_4—See **transformation temperature**.

artificial aging, *n*—**aging** above room temperature.

atmospheric corrosion resistance, *n*—the ability to resist degradation or alteration of material through chemical reaction with the surrounding atmosphere.

DISCUSSION—This term generally pertains to carbon steel, low alloy steel, or micro-alloyed steel.

austempering, *n*—**heat treatment** involving **quenching** a steel object from a temperature above the **transformation range** in a medium maintained at a temperature above the **martensite range** sufficiently fast to avoid the formation of high temperature transformation products, and then holding it at that temperature until transformation is complete.

austenitizing, *n*—forming austenite by heating a steel object above the **transformation range**.

[1] This terminology is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.92 on Terminology.

Current edition approved Nov. 1, 2015. Published December 2015. Originally approved in 1995. Last previous edition approved in 2013 as A941-13b. DOI: 10.1520/A0941-15.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

***A Summary of Changes section appears at the end of this standard**

baking, *n*—heating to a low temperature in order to remove gases.

batch furnace, *n*—a heating device within which steel objects are held stationary or oscillated during the thermal processing cycle.

blank carburizing, *n*—simulating the **carburizing** operation without introducing carbon.

DISCUSSION—This is usually accomplished by using an inert material in place of the carburizing agent, or by applying a suitable protective coating on the object being heat treated.

blank nitriding, *n*—simulating the nitriding operation without introducing nitrogen.

DISCUSSION—This is usually accomplished by using an inert material in place of the nitriding agent, or by applying a suitable protective coating on the object being heat treated.

bluing, *n*—subjecting the scale-free surface of a steel object to the action of air, steam, or other agents at a suitable temperature, thereby forming a thin blue film of oxide and improving the object's appearance and corrosion resistance.

DISCUSSION—This term is ordinarily applied to sheet, strip, or finished parts. It is used also to denote the heating of springs after fabrication in order to improve their properties.

box annealing, *n*—**annealing** in a sealed container under conditions that minimize oxidation.

DISCUSSION—The charge is usually heated slowly to a temperature below the **transformation range**, but sometimes above or within it, and is then cooled slowly.

bright annealing, *n*—**annealing** in a protective medium to prevent discoloration of the bright surface.

capped steel, *n*—a **rimmed steel** in which, during ingot solidification, the rimming action was limited by mechanical or chemical means.

carbon potential, *n*—the carbon content at the surface of a specimen of pure iron in equilibrium with the carburizing medium considered, and under the conditions specified.

carbon restoration, *n*—replacing the carbon lost from the surface layer in previous processing by carburizing this layer to substantially the original carbon level.

carbon steel, *n*—a **steel** that conforms to a specification that prescribes a maximum limit, by **heat analysis** in mass percent, of not more than: 2.00 for carbon and 1.65 for manganese, but does not prescribe a minimum limit for chromium, cobalt, molybdenum, nickel, niobium (columbium), tungsten (wolfram), vanadium, or zirconium.

DISCUSSION—Except as required above, it is permissible for carbon steel specifications to prescribe limits (minimum or maximum, or both) for each specified alloying element, subject to the following restrictions for the heat analysis limits in mass percent:

(a) for wrought carbon steel products, the specified maximum limit is not to exceed: 0.10 for aluminum, 0.60 for silicon, and 0.050 for titanium;

(b) for carbon steel castings, the specified maximum limit is not to exceed: 0.10 for aluminum, 1.00 for silicon, and 0.050 for titanium.

(c) for **carbon steels** that are required to be rephosphorized, the specified minimum limit for phosphorus is not to be less than 0.040;

(d) for **carbon steels** that are required to be resulfurized, the specified minimum limit for sulfur is not to be less than 0.060;

(e) for **carbon steels** that are not required to be rephosphorized or resulfurized, the specified maximum limit is not to exceed: 0.60 for copper, 0.050 for phosphorus, and 0.060 for sulfur; and

(f) for **carbon steels** that are required to contain boron, copper, or lead, the specified minimum limit is not to exceed: 0.0005 for boron, 0.35 for copper, and 0.25 for lead.

carbonitriding, *n*—**case hardening** in which a suitable steel object is heated above Ac_1 in a gaseous atmosphere of such composition as to cause simultaneous absorption of carbon and nitrogen by the surface and, by diffusion, to create a concentration gradient.

carburizing, *n*—a process in which an austenitized steel object is brought into contact with a carbonaceous environment of sufficient carbon potential to cause absorption of carbon at the surface and, by diffusion, to create a concentration gradient.

case, *n—in case hardening*, the outer portion that has been made harder than the **core** as a result of altered composition or microstructure, or both, from treatments such as **carburizing, nitriding**, and **induction hardening**.

case hardening, *n*—a generic term covering any of several processes applicable to **steel** that change the chemical composition or microstructure, or both, of the surface layer.

DISCUSSION—The processes commonly used are: **carburizing** and **quench hardening**; **nitriding**; and **carbonitriding**. It is preferred that the applicable specific process name be used.

cast analysis—Deprecated term. Use the preferred term **heat analysis**.

cementation, *n*—the introduction of one or more elements into the outer portion of a steel object by means of diffusion at high temperature.

certificate of compliance, *n—in manufactured products*, a document that states that the product was manufactured, sampled, tested, and inspected in accordance with the requirements of the specification (including year of issue) and any other requirements specified in the purchase order or contract, and has been found to meet such requirements.

DISCUSSION—A single document, containing test report information and certificate of compliance information, may be used.

certifying organization, *n—in product specifications*, the entity responsible for the conformance and certification of the product to the specification requirements.

check analysis—Deprecated term. Use the preferred term **product analysis**.

coarse grain practice, *n*—a steelmaking practice for other than **stainless steel** that is intended to produce a **killed steel** in which aluminum, niobium (columbium), titanium, and vanadium are **residual elements**.

cold working, *n*—mechanical deformation of a metal at temperatures below its **recrystallization temperature**.

cold treatment, *n*—exposing a steel object to temperatures below room temperature for the purpose of obtaining desired conditions or properties, such as dimensional or structural stability.

conditioning heat treatment, *n*—a preliminary **heat treatment** used to prepare a steel object for a desired reaction to a subsequent **heat treatment**.

continuous-conveyance furnace, *n*—a heating device through which steel objects are intentionally moved at a constant rate during the thermal processing cycle.

controlled cooling, *n*—cooling a steel object from an elevated temperature in a predetermined manner to avoid hardening, cracking, or internal damage, or to produce a desired microstructure or mechanical properties.

core, *n—in case hardening,* the interior portion of unaltered composition or microstructure, or both, of a case hardened steel object.

core, *n—in clad products,* the central portion of a multilayer composite metallic material.

critical cooling rate, *n*—the slowest rate of continuous cooling at which austenite can be cooled from above the **transformation range** to prevent its transformation above M_s.

cycle annealing, *n*—**annealing** employing a predetermined and closely controlled time-temperature cycle to produce specific properties or a specific microstructure.

decarburization, *n*—the loss of carbon from the surface of a steel object as a result of its being heated in a medium that reacts with the carbon.

defect, *n*—an imperfection of sufficient magnitude to warrant rejection based on the specified requirements.

differential heating, *n*—heating that intentionally produces a temperature gradient within a steel object such that, after cooling, a desired stress distribution or variation in properties is present within the object.

diffusion coating, *n*—any process whereby a base metal is either coated with another metal and heated to a sufficient temperature in a suitable environment, or exposed to a gaseous or liquid medium containing the other metal, thereby causing diffusion of the coating or other metal into the base metal, with a resultant change in the composition and properties of its surface.

direct quenching, *n—in thermochemical processing*, **quenching** immediately following the thermochemical treatment.

direct quenching, *n—in thermomechanical processing*, **quenching** immediately following the final hot deformation.

document, *n*—a written, printed, or electronic record that provides information, evidence, or official statements.

double aging, *n*—employment of two different aging treatments, in sequence, to control the type of precipitate formed from a supersaturated alloy matrix in order to obtain the desired properties.

DISCUSSION—the first aging treatment, sometimes referred to as intermediate or stabilizing, is usually carried out at a higher temperature than the second.

double tempering, *n*—a treatment in which a quench-hardened steel object is given two complete tempering cycles at substantially the same temperature for the purpose of ensuring completion of the tempering reaction and promoting stability of the resultant microstructure.

electronic data interchange, *n*—the computer to computer exchange of business information in a standardized format.

ellipsis, *n—in a tabular entry*, three periods (...) that indicate that there is no requirement.

ferritizing anneal, *n*—a **heat treatment** that produces a predominantly ferritic matrix in a steel object.

ferroalloy, *n*—an alloy of iron and one or more other metals, for use as an addition to the molten metal during the manufacture of **steels**, nickel alloys, or cobalt alloys.

ferrous material, *n*—metals and alloys that contain iron as the principal component.

DISCUSSION—The iron content is not always stated in the specification and is not always determined by chemical analysis. The iron content may be taken to be 100 % minus the sum of the mean values permitted by the specification for all other elements having a specified range or a specified maximum. For conformance purposes, the mean value for iron, whether specified or calculated, is compared on an individual basis to the mean values permitted by the specification for each of the other elements having a specified range or a specified maximum. If an element other than iron is not specified, but is listed as remainder or balance, then, for conformance purposes the mean value for iron is compared to the calculated value for that other element.

fine grain practice, *n*—a steelmaking practice for other than **stainless steel** that is intended to produce a **killed steel** that is capable of meeting the requirements specified for fine austenitic grain size.

DISCUSSION—It normally involves the addition of one or more austenitic grain refining elements in amounts that have been established by the steel producer as being sufficient. Austenitic grain refining elements include, but are not limited to, aluminum, niobium (columbium), titanium, and vanadium.

flame annealing, *n*—**annealing** in which the heat is applied directly by a flame.

flame hardening, *n*—a process in which only the surface layer of a suitable steel object is heated by flame to above Ac_3 or Ac_{cm}, and then the object is **quenched**.

fog quenching, *n*—**quenching** in a mist.

full annealing, *n*—**annealing** a steel object by **austenitizing** it and then cooling it slowly through the **transformation range**.

DISCUSSION—The austenitizing temperature is usually above Ac_3 for hypoeutectoid steels and between Ac_1 and Ac_{cm} for hypereutectoid steels.

grain growth, *n*—an increase in the grain size of a steel object, usually as a result of exposure to elevated temperatures.

grain size, *n*—the dimensions of the grains or crystals in a polycrystalline metal, exclusive of twinned regions and subgrains when present.

DISCUSSION—**Grain size** is usually estimated or measured on the cross section of an aggregate of grains, and designated by an ASTM grain size number. (See Test Methods E112.)

graphitization annealing, *n*—**annealing** a steel object in such a way that some or all of the carbon is precipitated as graphite.

hardenability, *n*—the property that determines the depth and distribution of hardness induced by **quenching** a steel object.

hardening, *n*—increasing the hardness by suitable treatment, usually involving heating and cooling.

DISCUSSION—Where applicable, it is preferred that the following more specific terms be used: **age hardening**, **case hardening**, **flame hardening**, **induction hardening**, **precipitation hardening**, and **quench hardening**.

heat, *n*—a generic term denoting a specific **lot** of **steel**, based upon steelmaking and casting considerations.

DISCUSSION—Where it is necessary to be more definitive, the following more specific terms are used: **primary heat**, **multiple heat**, and **remelted heat**. In product specifications, the term **heat** generally is used, without qualification, to mean the **primary**, **multiple**, or **remelted heat**, whichever is applicable.

heat analysis, *n*—the chemical analysis determined by the steel producer as being representative of a specific **heat** of **steel**.

DISCUSSION—Where the analysis reported by the steel producer is not sufficiently complete for conformance with the heat analysis requirements of the applicable product specification to be fully assessed, the **manufacturer** may complete the assessment of conformance with such heat analysis requirements by using a product analysis for the **specified elements** that were not reported by the steel producer, provided that product analysis tolerances are not applied and the **heat analysis** is not altered.

heat number, *n*—the alpha, numeric, or alphanumeric designator used to identify a specific **heat** of **steel**.

heat treatment, *n*—heating and cooling a steel object in such a way as to obtain desired conditions or properties.

DISCUSSION—Heating for the sole purpose of hot working is excluded from the meaning of this definition.

high-strength low-alloy steel, *n*—a **steel**, other than a **carbon steel** or an **interstitial-free steel**, that conforms to a specification that requires the minimum content for each specified alloying element to be lower than the applicable limit in the definition for **alloy steel**, and the yield point or yield strength of the product to be at least 36 ksi or 250 MPa.

homogeneous carburizing, *n*—a process that converts a low-carbon steel to one of substantially uniform and higher carbon content throughout the section, so that a specific response to **hardening** may be obtained.

homogenizing, *n*—holding a steel object at high temperature to eliminate or decrease chemical segregation by diffusion.

hot-cold working, *n*—the mechanical deformation of austenitic and precipitation hardening steels at a temperature just below the **recrystallization temperature** to increase the yield strength and hardness by plastic deformation or precipitation hardening effects induced by plastic deformation, or both.

hot-finished, *n*—the condition of a product that has been cooled directly after the last **hot-working** operation, without **cold-working** (except for straightening or flattening), and independent of the temperature at which hot-working was completed.

DISCUSSION—The tolerances and surface finish of hot-finished product can be different from those of cold-finished, cold-drawn, or cold-rolled product.

hot quenching, *n*—an imprecise term used to cover a variety of quenching procedures in which the quenching medium is maintained at a prescribed temperature above 160 °F or 70 °C.

hot working, *n*—mechanical deformation of a metal at temperatures above its **recrystallization temperature**.

imperfection, *n*—a material discontinuity or irregularity that is detectable by **inspection**.

inclusion shape control, *n*—the addition of elements during steel making in order to affect the inclusion morphology.

induction hardening, *n*—*in surface hardening*, a process in which only the surface layer of a suitable steel object is heated by electrical induction to above Ac_3 or Ac_{cm}, and then the object is **quenched**.

induction hardening, *n*—*in through hardening*, a process in which a suitable steel object is heated by electrical induction to above Ac_3 or Ac_{cm} throughout its section, and then the object is **quenched**.

induction heating, *n*—heating by electrical induction.

inspection, *n*—the process of measuring, examining, testing, gaging, or otherwise comparing the unit of product with the applicable requirements.

intermediate annealing, *n*—**annealing** wrought steel objects at one or more stages during manufacture prior to final thermal treatment.

interrupted aging, *n*—**aging** at two or more temperatures, by steps, and cooling to room temperature after each step.

interrupted quenching, *n*—**quenching** in which the object being quenched is removed from the quenching medium while the object is at a temperature substantially higher than that of the quenching medium.

interstitial-free steel, *n*—a **steel** that has essentially all of its carbon and nitrogen chemically combined with stabilization elements rather than being present interstitially.

DISCUSSION—The heat analysis limits (minimum or maximum, or both) that are permitted to be prescribed in interstitial-free steel specifications are as given in the definition for **carbon steel**, except that the 0.050 % maximum limit for titanium does not apply.

isothermal annealing, *n*—**austenitizing** a steel object and then cooling it to, and holding it at, a temperature at which austenite transforms to a ferrite-carbide aggregate.

isothermal transformation, *n*—a change in phase at any constant temperature.

killed steel, *n*—a **steel** deoxidized to such a level that essentially no reaction occurred between carbon and oxygen during solidification.

laser beam welding, *n*—a welding process that uses a laser beam as the heat source.

lot, *n*—a definite quantity of product manufactured under conditions that are considered uniform.

low-alloy steel, *n*—a **steel**, other than a **carbon steel** or an **interstitial-free steel**, that conforms to a specification that requires the minimum content for each specified alloying element to be lower than the applicable limit in the definition for **alloy steel**.

M_f , M_s**—**See **transformation temperature**.

manufacturer, *n*—the organization responsible for the conversion of materials into products meeting the requirements of a product specification.

maraging, *n*—a precipitation hardening treatment applied to a special group of **alloy steels** to precipitate one or more intermetallic compounds in a matrix of essentially carbon-free martensite.

martempering, *n*— **quenching** an austenitized steel object in a medium at a temperature in the upper part of, or slightly above, the **martensite range**, holding it in the medium until its temperature is substantially uniform throughout, and then cooling it in air through the **martensite range**.

martensite range, *n*—the temperature interval between M_s and M_f.

microalloyed steel, *n*—a **low-alloy steel** that conforms to a specification that requires the presence of one or more carbide-, nitride-, or carbonitride-forming elements, generally in individual concentrations less than 0.15 mass percent, to enhance strength.

DISCUSSION—The most common microalloying elements are niobium (columbium), titanium, and vanadium.

multiple heat, *n*—two or more molten **primary heats**, in whole or in part, combined in a common ladle or in a common non-oscillating mold.

DISCUSSION—A **multiple heat** is identified by a single **heat number** representative of the **multiple heat**, or by the individual **heat numbers** of the **primary heats** contained in the **multiple heat**. The **heat analysis** of a **multiple heat** identified by a single **heat number** is the weighted average analysis of the individual **primary heats** contained in the **multiple heat**. Two or more molten **primary heats** sequentially strand cast (poured into an oscillating mold) constitute a series of individual **heats**, not a **multiple heat**.

natural aging, *n*—spontaneous aging of a super-saturated solid solution at room temperature.

nickel alloy, *n*—a material that conforms to a specification that requires by mass percent more nickel than any other element.

DISCUSSION—In castings, the nickel content requirement is not normally stated in the specification and is not normally determined by chemical analysis, but is taken to be 100 % minus the sum of the mean values permitted by the specification for all other elements having a specified range or a specified maximum.

nitriding, *n*—introducing nitrogen into a solid steel object by holding it at a suitable temperature in contact with a nitrogenous environment.

nonferrous material, *n*—metals and alloys that do not contain iron as the principal component.

normalizing, *v*—reheating a steel object to a temperature above the **transformation range** and then cooling it in air to a temperature substantially below the transformation range to achieve both grain refinement and improved homogenization.

overaging, *n*—**aging** under conditions of time and temperature greater than those required to obtain maximum change in a certain property, so that the property is altered away from the maximum.

overheating, *n*—heating a steel object to such a high temperature that excessive grain growth occurs.

DISCUSSION—Unlike burning, it may be possible to restore the original properties/microstructure by further heat treatment or mechanical working, or a combination thereof.

patenting, *n—in wire making,* heating a medium-carbon or high-carbon steel before wire drawing, or between drafts, to a temperature above the **transformation range**, and then cooling it in air, or a bath of molten lead or salt, to a temperature below Ae_1.

plate-as-rolled, *n*—the quantity of plate product rolled at one time, either from an individual slab or directly from an ingot.

DISCUSSION—This term does not refer to the surface condition or the heat-treatment state of the material; a **plate-as-rolled** may be in the as-rolled condition, or may have received one or more surface treatments or **heat treatments**, or both.

post-weld heat treatment, *n*—heating weldments immediately after welding, to provide **tempering**, **stress relieving**, or a controlled rate of cooling to prevent formation of a hard or brittle microstructure.

precipitation hardening, *n*—**hardening** caused by the precipitation of a constituent from a supersaturated solid solution.

precipitation heat treatment, *n*—**artificial aging** in which a constituent precipitates from a supersaturated solid solution.

preheating, *n*—heating before welding, a mechanical treatment, or some further thermal treatment.

preheating, *n—for tool steels*, heating to an intermediate temperature immediately before final **austenitizing**.

primary heat, *n*—the product of a single cycle of a batch melting process.

DISCUSSION—In the investment casting industry, the term *master heat* is used.

process annealing, *n*—*in the sheet and wire industries*, heating a steel object to a temperature close to, but below, Ac_1 and then cooling it, in order to soften it for further cold working.

product analysis, *n*—a chemical analysis of a specimen taken from the semi-finished product or the finished product.

progressive aging, *n*—**aging** by increasing the temperature in steps, or continuously, during the aging cycle.

quench aging, *n*—**aging** associated with **quenching** after **solution heat treatment**.

quench hardening, *n*—**hardening** a steel object by **austenitizing** it, and then cooling it rapidly enough that some or all of the austenite transforms to martensite.

DISCUSSION—The austenitizing temperature is usually above Ac_3 for hypoeutectoid steels and between Ac_1 and Ac_{cm} for hypereutectoid steels.

quenching, *n*—rapid cooling in a fluid at a rate sufficient to preserve or produce desired material characteristics.

DISCUSSION—Where applicable, it is preferred that the following more specific terms be used: **fog quenching, hot quenching, interrupted quenching, selective quenching, spray quenching,** and **time quenching**. Quenching is often used in solution heat treatment of austenitic steels to retain certain constituents in solution. Quenching is also used for ferritic steels to develop desired characteristics (such as microstructure or toughness) in thicker sections that can otherwise only be achieved in thinner sections. Liquids and gasses are both fluids.

recrystallization, *n*—the formation of a new grain structure through a nucleation and growth process.

DISCUSSION—This is commonly produced by subjecting a steel object, which may be strained, to suitable conditions of time and temperature.

recrystallization annealing, *n*—**annealing** a cold-worked steel object to produce a new grain structure without a change in phase.

recrystallization temperature, *n*—the approximate minimum temperature at which recrystallization of a cold-worked steel object occurs within a specified time.

remelted heat, *n*—the product of the remelting of a **primary heat**, in whole or in part.

DISCUSSION—In the investment casting industry, the term *sub-heat* is used.

residual element, *n*—*in* ***steel***, a specified or unspecified element, not intentionally added, originating in the raw materials, refractories, or surrounding atmospheres used in steel making.

rimmed steel, *n*—a **steel** that contained sufficient oxygen to generate carbon monoxide at the boundary between the solid metal and the remaining molten metal during solidification, resulting in an outer layer low in carbon.

secondary hardening, *n*—the hardening phenomenon that occurs during high-temperature **tempering** of certain **steels** containing one or more carbide-forming alloying elements.

selective heating, *n*—intentionally heating only certain portions of a steel object.

selective quenching, *n*—**quenching** only certain portions of a steel object.

semicontinuous-conveyance furnace, *n*—a heating device through which steel objects are intentionally moved in accordance with a predetermined start-stop-start pattern during the thermal processing cycle.

semikilled steel, *n*—an incompletely deoxidized **steel** that contained sufficient oxygen to form enough entrapped carbon monoxide during solidification to offset solidification shrinkage.

shell hardening, *n*—a surface hardening process in which a suitable steel object, when heated through and quench hardened, develops a martensitic layer or shell that closely follows the contour of the piece and surrounds a **core** of essentially pearlitic transformation product.

DISCUSSION—This result is accomplished by a proper balance between section size, **hardenability**, and severity of quench.

slack quenching, *n*—the incomplete **hardening** of a steel object due to **quenching** from the austenitizing temperature at a rate slower than the **critical cooling rate** for the particular steel composition, resulting in the formation of one or more transformation products in addition to martensite.

snap temper, *n*—a precautionary interim stress-relieving treatment applied to a high-hardenability steel immediately after **quenching** to prevent cracking because of delay in **tempering** it at the prescribed higher temperature.

soaking, *n*—prolonged holding at a selected temperature.

solution heat treatment, *n*—heating a steel object to a suitable temperature, holding it at that temperature long enough to cause one or more constituents to enter into solid solution, and then cooling it rapidly enough to hold such constituents in solution.

specified element, *n*—*in* ***steel***, an element controlled to a specified minimum, maximum, or range, in accordance with the requirements of the applicable product specification.

spheroidizing, *n*—heating and cooling a steel object to produce a spheroidal or globular form of carbide in its microstructure.

DISCUSSION—Spheroidizing methods commonly used are the following: (1) prolonged holding at a temperature just below Ae_1; (2) heating and cooling alternately between temperatures that are just above, and just below, Ae_1; (3) heating to a temperature above Ae_1 or Ae_3 and then cooling very slowly in the furnace or holding at a temperature just below Ae_1; (4) cooling, from the minimum temperature at which all carbide is dissolved, at a rate suitable to prevent the reformation of a carbide network, and then reheating in accordance with Method (1) or (2) above. (Applicable to hypereutectoid steels containing a carbide network.)

spray quenching, *n*—**quenching** in a spray of liquid.

stabilized stainless steel, *n*—a **stainless steel** that conforms to a specification that prescribes limits (minimum or range) for niobium (columbium), tantalum, titanium, or a combination thereof.

DISCUSSION—Such limits are sometimes expressed as a function of the carbon and nitrogen contents. In an appropriately annealed condition, a **stabilized stainless steel** will resist sensitization to intergranular corrosion associated with the precipitation of chromium carbide at grain boundaries as a result of thermal exposure, such as **annealing, stress relieving** , welding, or high temperature service. Resistance to sensitization to intergranular corrosion is dependent upon the corrosivity of the environment. The condition of being stabilized with respect to sensitization is frequently demonstrated by passing one or more standard corrosion tests for sensitization.

stabilizing treatment, *n*—any treatment intended to stabilize the microstructure or dimensions of a steel object.

stainless steel, *n*—a **steel** that conforms to a specification that requires, by mass percent, a minimum chromium content of 10.5 or more, and a maximum carbon content of less than 1.20.

steel, *n*—a material that conforms to a specification that requires, by mass percent, more iron than any other element and a maximum carbon content of generally less than 2.

DISCUSSION—The iron content requirement is not normally stated in the specification and is not normally determined by chemical analysis, but is taken to be 100 % minus the sum of the mean values permitted by the specification for all other elements having a specified range or a specified maximum. For conformance purposes, this calculated value for iron is compared on an individual basis to the mean values permitted by the specification for each of the other elements having a specified range or a specified maximum. Some chromium-containing steels may contain more than 2 % carbon; however, 2 % carbon is generally considered to be the demarcation between **steel** and cast iron.

strain aging, *n*—**aging** induced by cold working.

strain hardening, *n*—an increase in hardness and strength of a metal caused by plastic deformation at temperatures below its **recrystallization temperature**. (Syn. *work hardening*)

stress relieving, *n*—heating a steel object to a suitable temperature, holding it long enough to reduce residual stresses, and then cooling it slowly enough to minimize the development of new residual stresses.

subcritical annealing, *n*—**annealing** at a temperature slightly below Ac_1.

surface hardening, *n*—a generic term covering any of several processes that, by **quench hardening** only, produce in a steel object a surface layer that is harder or more wear resistant than the **core**.

DISCUSSION—There is no significant alteration of the chemical composition of the surface layer. Where applicable, it is preferred that the following more specific terms be used: **induction hardening, flame hardening**, and **shell hardening**.

temper brittleness, *n*—brittleness that results when certain **steels** are held within, or are cooled slowly through, a certain range of temperature below the **transformation range**.

tempering, *n*—reheating a quench hardened or normalized steel object to a temperature below Ac_1, and then cooling it at any desired rate.

test record, *n*—a document or electronic record that contains the observations and derived data obtained by applying a given test method.

test report, *n*—a document that presents the applicable qualitative or quantitative results obtained by applying one or more given test methods.

DISCUSSION—A single document, containing test report information and certificate of compliance information, may be used.

Thermal-Mechanical Control Process (TMCP), *n*—a rolling process that produces a fine-grained ferritic steel by a particular combination of controls on the manufacturing process, from slab reheating to post-rolling cooling, thereby achieving enhanced mechanical properties.

DISCUSSION—(TMCP) requires appropriate selection of chemical composition and accurate control of steel temperature and rolling reduction.

thermochemical treatment, *n*—a **heat treatment** carried out in a medium suitably chosen to produce a change in the chemical composition of the steel object by exchange with the medium.

time quenching, *n*—interrupted **quenching** in which the duration of holding in the quenching medium is controlled.

transformation ranges, *n*—those ranges of temperature within which austenite forms during heating and transforms during cooling.

DISCUSSION—The two ranges are distinct, sometimes overlapping but never coinciding. The limiting temperatures of the ranges are dependent upon the steel composition and the rate of change of temperature, particularly during cooling.

transformation temperature, *n*—the temperature at which a change in phase occurs, with the limiting temperatures of the **transformation ranges** designated using the following symbols:

Ac_{cm}—the temperature at which the solution of cementite in austenite is completed during heating.

Ac_1—the temperature at which austenite begins to form during heating.

Ac_3—the temperature at which transformation of ferrite to austenite is completed during heating.

Ac_4—the temperature at which austenite transforms to delta ferrite during heating.

Ae_1, Ae_3, Ae_{cm}, Ae_4—the temperatures of phase change at equilibrium.

Ar_{cm}—the temperature at which precipitation of cementite starts during cooling.

Ar_1—the temperature at which transformation of austenite to ferrite or to ferrite plus cementite is completed during cooling.

Ar_3—the temperature at which austenite begins to transform to ferrite during cooling.

Ar_4—the temperature at which delta ferrite transforms to austenite during cooling.

M_f—the temperature at which transformation of austenite to martensite is substantially completed during cooling.

M_s—the temperature at which transformation of austenite to martensite starts during cooling.

DISCUSSION—All of the above changes, except the formation of martensite, occur at lower temperatures during cooling than during heating, and are dependent upon the rate of change of temperature.

unspecified element, *n—in* ***steel***, an element not controlled to a specified minimum, maximum, or range, in accordance with the requirements of the applicable product specification.

SUMMARY OF CHANGES

Committee A01 has identified the location of selected changes to this standard since the last issue (A941–13b) that may impact the use of this standard. (Approved November 1, 2015.)

(1) Added the term *ferrous material* (3.1).

(2) Edited the term *annealing* (3.1).

Appendix

8

ASTM E527-12 STANDARD PRACTICE FOR NUMBERING METALS AND ALLOYS IN THE UNIFIED NUMBERING SYSTEM (UNS)

Designation: E527 – 12

Standard Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)[1]

This standard is issued under the fixed designation E527; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This practice (Note 1) covers a unified numbering system (UNS) for metals and alloys that have a "commercial standing" (see Note 2), and covers the procedure by which such numbers are assigned. Section 2 describes the system of alphanumeric designations or "numbers" established for each family of metals and alloys. Section 3 outlines the organization established for administering the system. Section 5 describes the procedure for requesting number assignment to metals and alloys for which UNS numbers have not previously been assigned.

NOTE 1—UNS designations are not to be used for metals and alloys that are not registered under the system described herein, or for any metal or alloy whose composition differs from those registered.

NOTE 2—The terms "commercial standing," "production usage," and other similar terms are intended to apply to metals and alloys in active commercial production and use, although the actual amount of such use will depend, among other things, upon the type of metals and alloys involved and their application.

The various standardizing organizations involved with the individual industries apply their own established criteria to define the status of a metal or alloy in terms of when a UNS designation number will be assigned. For instance, ASTM Committee A01 requires details of heat analysis, mechanical properties, and processing requirements for addition of a new grade or alloy to its specifications. The Copper Development Association requires that the material be "in commercial use (without tonnage limits);" the Aluminum Association requires that the alloy be "offered for sale (not necessarily in commercial use);" the SAE Aerospace Materials Division calls for "repetitive procurement by at least two users."

Thus, while no universal definition for usage criteria is established, the UNS numbers are intended to identify metals and alloys that are generally in regular production and use. A UNS number will not ordinarily be issued for a material that has just been conceived or that is still in only experimental trial.

2. Description of Numbers (or Codes) Established for Metals and Alloys

2.1 The UNS establishes 18 series of numbers for metals and alloys, as shown in Table 1. Each UNS number consists of a single letter-prefix followed by five digits. In most cases the letter is suggestive of the family of metals identified; for example, A for aluminum, P for precious metals, and S for stainless steels.

2.2 Whereas some of the digits in certain UNS number groups have special assigned meaning, each series is independent of the others in such significance; this practice permits greater flexibility and avoids complicated and lengthy UNS numbers.

NOTE 3—This arrangement of alphanumeric six-character numbers is a compromise between the thinking that identification numbers should indicate many characteristics of the material, and the belief that numbers should be short and uncomplicated to define only the chemical composition and leaving the other properties to the specifications involved.

2.3 Wherever feasible, identification "numbers" from previous systems are incorporated into the UNS numbers. For example: carbon steel, originally identified by "American Iron and Steel Institute (AISI) 1020," is covered by "UNS G10200," and free cutting brass, presently identified by "Copper Development Association (CDA) C36000," is covered by "UNS C36000." Table 2 shows the secondary division of some primary series of numbers.

[1] This practice is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.91 on Editorial.

Current edition approved Oct. 15, 2012. Published November 2012. Originally approved in 1974. Last previous edition approved in 2007 as E527–07. DOI: 10.1520/E0527-12.

***A Summary of Changes section appears at the end of this standard**

TABLE 1 Primary Series of Numbers

Nonferrous Metals and Alloys	
A00001–A99999	aluminum and aluminum alloys
C00001–C99999	copper and copper alloys
E00001–E99999	rare earth and rare earth-like metals and alloys (18 items; see Table 2)
L00001–L99999	low melting metals and alloys (15 items; see Table 2)
M00001–M99999	miscellaneous nonferrous metals and alloys (12 items; see Table 2)
N00001–N99999	nickel and nickel alloys
P00001–P99999	precious metals and alloys (8 items; see Table 2)
R00001–R99999	reactive and refractory metals and alloys (14 items; see Table 2)
Z00001–Z99999	zinc and zinc alloys
Ferrous Metals and Alloys	
D00001–D99999	specified mechanical properties steels
F00001–F99999	cast irons
G00001–G99999	carbon and alloy steels
H00001–H99999	H-steels
J00001–J99999	cast steels (except tool steels)
K00001–K99999	miscellaneous steels and ferrous alloys
S00001–S99999	heat and corrosion resistant (stainless) steels
T00001–T99999	tool steels
W00001–W99999	welding filler metals, covered and tubular electrodes, classified by weld deposit composition (see Table 2)

TABLE 2 Secondary Division of Some Series of Numbers

E00001–E99999 Rare Earth and Rare Earth-Like Metals and Alloys	
E00000–E00999	actinium
E01000–E20999	cerium
E21000–E45999	mixed rare earths[A]
E46000–E47999	dysprosium
E48000–E49999	erbium
E50000–E51999	europium
E52000–E55999	gadolinium
E56000–E57999	holmium
E58000–E67999	lanthanum
E68000–E68999	lutetium
E69000–E73999	neodymium
E74000–E77999	praseodymium
E78000–E78999	promethium
E79000–E82999	samarium
E83000–E84999	scandium
E85000–E86999	terbium
E87000–E87999	thulium
E88000–E89999	ytterbium
E90000–E99999	yttrium
L00001–L99999 Low-Melting Metals and Alloys	
L00001–L00999	bismuth
L01001–L01999	cadmium
L02001–L02999	cesium
L03001–L03999	gallium
L04001–L04999	indium
L06001–L06999	lithium
L07001–L07999	mercury
L08001–L08999	potassium
L09001–L09999	rubidium
L10001–L10999	selenium
L11001–L11999	sodium
L12001–L12999	thallium
L13001–L13999	tin
L50001–L59999	lead
M00001–M99999 Miscellaneous Nonferrous Metals and Alloys	
M00001–M00999	antimony
M01001–M01999	arsenic
M02001–M02999	barium
M03001–M03999	calcium
M04001–M04999	germanium
M05001–M05999	plutonium
M06001–M06999	strontium
M07001–M07999	tellurium
M08001–M08999	uranium

TABLE 2 *Continued*

M10001–M19999	magnesium
M20001–M29999	manganese
M30001–M39999	silicon
P00001–P99999 Precious Metals and Alloys	
P00001–P00999	gold
P01001–P01999	iridium
P02001–P02999	osmium
P03001–P03999	palladium
P04001–P04999	platinum
P05001–P05999	rhodium
P06001–P06999	ruthenium
P07001–P07999	silver
R00001–R99999 Reactive and Refractory Metals and Alloys	
R01001–R01999	boron
R02001–R02999	hafnium
R03001–R03999	molybdenum
R04001–R04999	niobium (columbium)
R05001–R05999	tantalum
R06001–R06999	thorium
R07001–R07999	tungsten
R08001–R08999	vanadium
R10001–R19999	beryllium
R20001–R29999	chromium
R30001–R39999	cobalt
R40001–R49999	rhenium
R50001–R59999	titanium
R60001–R69999	zirconium
W00001–W99999 Welding Filler Metals Classified by Weld Deposit Composition	
W00001–W09999	carbon steel with no significant alloying elements
W10000–W19999	manganese-molybdenum low alloy steels
W20000–W29999	nickel low alloy steels
W30000–W39999	austenitic stainless steels
W40000–W49999	ferritic stainless steels
W50000–W59999	chromiun low alloy steels
W60000–W69999	copper base alloys
W70000–W79999	surfacing alloys
W80000–W89999	nickel base alloys

[A] Alloys in which the rare earths are used in the ratio of their natural occurrence (that is, unseparated rare earths). In this mixture, cerium is the most abundant of the rare earth elements.

2.4 Welding filler metals fall into two general categories: those whose compositions are determined by the filler metal analysis (e.g. solid bare wire or rods and cast rods) and those whose composition is determined by the weld deposit analysis (e.g. covered electrodes, flux-cored and other composite wire electrodes). The latter are assigned to a primary series with the letter W as shown in Table 1. The solid bare wire and rods continue to be assigned in the established number series according to their composition.

NOTE 4—The assignment of UNS designations rests solely with the industry organizations listed herin. Readers are *not* to make their own assignments of numbers from such listings, as this may create a risk of duplication and conflict.

2.5 ASTM and SAE periodically publish up-to-date listings of all UNS numbers assigned to specific metals and alloys, with appropriate reference information on each.[2] Many trade associations also publish similar listings related to materials of primary interest to their organizations.

3. Organization for Administering the UNS for Metals and Alloys

3.1 The organization for administering the UNS consists of the following:

3.1.1 *Advisory Board*—The Advisory Board has approximately 20 volunteer members who are affiliated with major producing and using industries, trade associations, government agencies, and standards societies, and who have extensive experience with identification, classification, and specification of materials. The Board is the administrative arm of SAE and ASTM on all matters pertaining to the UNS. It coordinates thinking on the format of each series of numbers and the administration of each by selected experts. It sets up ground rules for determining eligibility of any material for a UNS number, for requesting such numbers, and for appealing unfavorable rulings. It is the final referee on matters of disagreement between requesters and assigners.

3.1.2 *Several Number-Assigning Offices*— UNS number assigners for certain materials are set up at trade associations which have successfully administered their own numbering systems; for other materials, assigners are located at offices of

[2] Request the most recent version of ASTM DS 56 and SAE HS 1086, *Unified Numbering System for Metals and Alloys*, (a joint ASTM–SAE publication), PCN 05-056001-01.

SAE. Each of these assigners has the responsibility for administering a specific series of numbers, as shown in Table 3. Each considers requests for assignment of new UNS numbers, and informs applicants of the action taken. Trade association UNS number assigners report immediately to SAE details of each number assignment. Assigners collaborate with designated consultants when considering requests for assignment of new numbers.

3.1.3 *Corps of Volunteer Consultants*— Consultants are selected by the Advisory Board to provide expert knowledge of a specific field of materials. Since they are utilized primarily by the Board and the SAE number assigners, they are not listed in this recommended practice. At the request of the SAE number assigner, a consultant considers a request for a new number in the light of the ground rules established for the material involved, decides whether a new number is justified, and informs the SAE number assigner accordingly. This utilization of experts (consultants and number assigners) is intended to ensure prompt and fair consideration of all requests. It permits each decision to be based on current knowledge of the needs of a specific industry of producers and users.

3.1.4 *Staff at SAE*—Staff members at SAE maintain master listings of all UNS numbers assigned.

3.1.5 In addition, established SAE and ASTM committees which normally deal with standards and specifications for the materials covered by the UNS, and other knowledgeable persons, are called upon by the Advisory Board for advice when considering appeals of unfavorable rulings in the matter of UNS number assignments.

4. Significance and Use

4.1 The UNS provides a means of correlating many nationally used numbering systems currently administered by societies, trade associations, and individual users and producers of metals and alloys, thereby avoiding confusion caused by use of more than one identification number for the same material; and by the opposite situation of having the same number assigned to two or more entirely different materials. It

TABLE 3 Number Assigners and Areas of Responsibility

The Aluminum Association, Inc. 1425 Wilson Boulevard, Suite 600 Arlington, VA 22209 Attention: Office for Unified Numbering System for Metals Telephone: (703) 358-2960 www.aluminum.org	Aluminum and Aluminum Alloys UNS Number Series: A00001–A99999
American Welding Society 550 N. W. LeJeune Road P.O. Box 351040 Miami, FL 33126 Attention: Office for Unified Numbering System for Metals Telephone: (305) 443-9353 www.aws.org	Welding Filler Metals UNS Number Series: W00001–W99999
Copper Development Association 260 Madison Avenue, 16th Floor New York, NY 10016 Attention: Office for Unified Numbering System for Metals Telephone: (212) 251-7200 www.copper.org	Copper and Copper Alloys UNS Number Series: C00001–C99999
Society of Automotive Engineers 400 Commonwealth Drive Warrendale, PA 15096 Attention: Office for Unified Numbering System for Metals Telephone: (724) 776-4841 www.sae.org	Carbon and Alloy Steels UNS Number Series: G00001–G99999 H-Steels UNS Number Series: H00001–H99999 Tool Steels UNS Number Series: T00001–T99999 Miscellaneous Nonferrous Metals and Alloys UNS Number Series: M00001–M99999 Cast Steels UNS Number Series: J00001–J99999 Heat and Corrosion Resistant (Stainless) Steels UNS Number Series: S00001–S99999 Zinc and Zinc Alloys UNS Number Series: Z00001–Z99999 Precious Metals and Alloys UNS Number Series: P00001–P99999 Cast Irons UNS Number Series: F00001–F99999 Nickel and Nickel Alloys UNS Number Series: N00001–N99999 Steels Specified by Mechanical Properties UNS Number Series: D00001–D99999 Reactive and Refractory Metals and Alloys UNS Number Series: R00001–R99999

also provides the uniformity necessary for efficient indexing, record keeping, data storage and retrieval, and cross referencing.

4.2 A UNS number is not in itself a specification, since it establishes no requirements for form, condition, quality, etc. It is a unified identification of metals and alloys for which controlling limits have been established in specifications published elsewhere.

NOTE 5—Organizations that issue specifications should report to appropriate UNS number-assigning offices (3.1.2) any specification changes that affect descriptions shown in published UNS listings.

5. Procedure for Requesting Number Assignment to Metals and Alloys Not Already Covered by UNS Numbers (or Codes)

5.1 UNS numbers are assigned only to metals and alloys that have a commercial standing (as defined in Note 2).

5.2 The need for a new number should always be verified by determining from the latest complete listing of already assigned UNS numbers that a usable number is or is not available.

NOTE 6—In assigning UNS numbers, and consequently in searching complete listings of numbers, the predominant element of the metal or alloy usually determines the prefix letter of the series to which it is assigned. In certain instances where no one element predominates, arbitrary decisions are made as to what prefix letter to use, depending on the producing industry and other factors.

5.3 For a new UNS number to be assigned, the composition (or other properties, as applicable) must be significantly different from that of any metal or alloy which has already been assigned a UNS number.

5.3.1 In the case of metals or alloys that are normally identified or specified by chemical composition, the chemical composition limits must be reported.

5.3.2 In the case of metals or alloys that are normally identified or specified by mechanical (or other) properties, such properties and limits thereof must be reported. Only those chemical elements and limits, if any, which are significant in defining such materials need be reported.

5.4 Requests for new numbers shall be submitted on "Application for UNS Number Assignment" forms (see Fig. 1 and Fig. 2). Copies of these are available from any UNS number-assigning office (see Table 3) or facsimiles may be made of the one herein.

5.5 All instructions on the printed application form should be read carefully and all information provided as indicated.

NOTE 7—The application form is designed to serve also as a data input sheet to facilitate processing each request through to final print-out of the data on electronic data-processing equipment and to minimize transcription errors at number-assigning offices and data-processing centers.

5.6 To further assist in assigning UNS numbers, the requester is encouraged to suggest a possible UNS number in each request, giving appropriate consideration to any existing number presently used by a trade association, standards society, producer, or user.

5.7 Each completed application form shall be sent to the UNS number-assigning office having responsibility for the series of numbers that appears to most closely relate to the material described on the form (see Table 3).

6. Keywords

6.1 aluminum alloy numbering system; aluminum alloy UNS numbering; cast iron numbering system; cast iron UNS numbering; copper alloy numbering system; copper alloy UNS numbering; ferrous alloys numbering system; ferrous alloys UNS numbering; nickel alloy numbering system; nickel alloy UNS numbering; reactive metals and alloys numbering system; reactive metals and alloys UNS numbering; refractory metals and alloys numbering system; refractory metals and alloys UNS numbering; steel alloy numbering system; steel alloy UNS numbering; stainless steel alloy numbering system; stainless steel alloy UNS numbering; unified numbering system; UNS metal and alloy numbering system; weld filler metal numbering system; weld filler metal numbering; welding electrode numbering system; welding electrode UNS numbering

E527 – 12

APPLICATION FOR UNS NUMBER ASSIGNMENT
and
Data Input Sheet for Entering a Specific Material in the
SAE-ASTM Unified Numbering System for Metals and Alloys
(See Reverse Side for Instructions for Completing This Form)

Material Description _____

_____

_____

_____

_____ Suggested UNS No. _____

* UNS Assigned Description _____

_____

_____

_____

_____ * UNS Assigned No. _____

* Chemical Composition

Aluminum	Al	_____	Indium	In	_____	Selenium	Se	_____
Antimony	Sb	_____	Iridium	Ir	_____	Silicon	Si	_____
Arsenic	As	_____	Iron	Fe	_____	Silver	Ag	_____
Beryllium	Be	_____	Lead	Pb	_____	Sulfur	S	_____
Bismuth	Bi	_____	Lithium	Li	_____	Tantalum	Ta	_____
Boron	B	_____	Magnesium	Mg	_____	Tellurium	Te	_____
Cadmium	Cd	_____	Manganese	Mn	_____	Thorium	Th	_____
Carbon	C	_____	Mercury	Hg	_____	Tin	Sn	_____
Chromium	Cr	_____	Molybdenum	Mo	_____	Titanium	Ti	_____
Cobalt	Co	_____	Nickel	Ni	_____	Tungsten	W	_____
Columbium	Cb	_____	Nitrogen	N	_____	Uranium	U	_____
Copper	Cu	_____	Oxygen	O	_____	Vanadium	V	_____
Germanium	Ge	_____	Phosphorus	P	_____	Zinc	Zn	_____
Gold	Au	_____	Platinum	Pt	_____	Zirconium	Zr	_____
Hafnium	Hf	_____	Rhenium	Re	_____	Other		_____
Hydrogen	H	_____	Rhodium	Rh	_____			

_____

_____

_____

* Cross References

AA _____
ACI _____
AISI _____
ANSI _____
AMS _____
ASME _____
ASTM _____
AWS _____
CDA _____
FED _____
MIL SPEC _____
SAE _____
OTHERS _____

Requesting Person and Organization (full address) _____

_____ Date of Request _____

* Assigning Org _____ * Date of UNS Assignment _____

Assigner's Name and Office_____

Applicant do not write in shaded areas. * These items for Computer Operator.

NOTE—Reverse side of Fig. 1 is located on the next page.

FIG. 1 Sample Application Form.

General:
Before attempting to complete this form, the applicant should be thoroughly familiar with the objectives of the UNS and the "ground rules" for assigning numbers, as stated in SAE J 1086 and ASTM E527, Section 5.

Material Description:
Identify the base element; the single alloying element that constitutes 50 % or more of the total alloy content; other distinguishing predominant characteristics (such as "casting"); and common or generic names if any (such as "ounce metal" or "Waspalloy"). When no single element makes up 50 % or more of the total alloy content, list in deceasing order of abundance the two alloying elements that together constitute the largest portion of the total alloy contents; except that if no two elements make up at least 50 % of the total alloy content, list the three most abundant, and so on. Instead of "iron," use "steel" to identify the base element of those iron-low-carbon alloys commonly known as steels.
When mechanical properties or physical characteristics are the primary defining criteria and chemical composition is secondary or nonsignificant, enter such properties and characteristics with the appropriate values or limits for each.

Suggested UNS No.:
While applicant's suggestion may or may not be the one finally assigned, it will assist proper identification of the material by the UNS Number Assigner.

Chemical Composition:
Enter limits such as 0.13–0.18 (*not* .13–.18 or 0.13 to 0.18) 1.5 max, 0.040 min, and balance. In space designated "other," enter information such as "Each 0.05 max, Total 0.15 max," and "Sn plus Pb 2.0 min."

Cross References:
Letter-symbols listed indicated widely known trade associations and standards-issuing organizations. Enter after appropriate symbols any known specification numbers or identification numbers issued by such groups to cover material equivalent to, similar to, or closely resembling the subject material.
Examples: SAE J 404 (50B44), AISI 415, ASTM A638 (660)
In space designated "other," enter any pertinent numbers issued by groups not listed above. In these instances, the full name and address of the issuing group shall be included.

SUBMIT COMPLETED FORM TO APPROPRIATE UNS NUMBER ASSIGNER, AS LISTED IN SAE J 1086 AND ASTM E527

FIG. 2 Sample Application Form (Reverse Side).

SUMMARY OF CHANGES

Committee A01 has identified the location of selected changes to this practice since the last issue, E527 –07, that may impact the use of this practice. (Approved October 15, 2012)

(*1*) Added "EN" and "ISO" to list of cross reference organizations shown in Fig. 1.

Appendix

9

SI QUICK REFERENCE GUIDE

SI QUICK REFERENCE GUIDE:
International System of Units (SI)
*The Modern Metric System**

UNITS

The International System of Units (SI) is based on seven base units:

Base Units

Quantity	*Name*	*Symbol*
length	metre	m
mass	kilogram	kg
time	second	s
electric current	ampere	A
thermodynamic temperature	kelvin	K
amount of substance	mole	mol
luminous intensity	candela	cd

and a number of derived units which are combinations of base units and which may have special names and symbols:

Examples of Derived Units

Quantity	*Expression*	*Name*	*Symbol*
acceleration			
angular	rad/s^2		
linear	m/s^2		
angle			
plane	dimensionless	radian	rad
solid	dimensionless	steradian	sr
area	m^2		
Celsius temperature	K	degree Celsius	°C
density			
heat flux	W/m^2		
mass	kg/m^3		
current	A/m^2		
energy, enthalpy			
work, heat	N·m	joule	J
specific	J/kg		
entropy			
heat capacity	J/K		
specific	J/(kg·K)		
flow, mass	kg/s		
flow, volume	m^3/s		
force	$kg·m/s^2$	newton	N
frequency			
periodic	1/s	hertz	Hz
rotating	rev/s		
inductance	Wb/A	henry	H
magnetic flux	V·s	weber	Wb
mass flow	kg/s		
moment of a force	N·m		
potential, electric	W/A	volt	V
power, radiant flux	J/s	watt	W
pressure, stress	N/m^2	pascal	Pa
resistance, electric	V/A	ohm	Ω
thermal conductivity	W/(m·K)		
velocity			
angular	rad/s		
linear	m/s		
viscosity			
dynamic (absolute) (μ)	Pa·s		
kinematic (ν)	m^2/s		
volume	m^3		
volume, specific	m^3/kg		

* *For compete information see IEEE/ASTM SI-10.*

SYMBOLS

Symbol	*Name*	*Quantity*	*Formula*
A	ampere	electric current	base unit
Bq	becquerel	activity (of a radio nuclide)	1/s
C	coulomb	electric charge	A·s
°C	degree Celsius	temperature interval	°C = K
cd	candela	luminous intensity	base unit
F	farad	electric capacitance	C/V
Gy	gray	absorbed dose	J/kg
g	gram	mass	kg/1000
H	henry	inductance	Wb/A
Hz	hertz	frequency	1/s
ha	hectare*	area	10 000 m^2
J	joule	energy, work, heat	N·m
K	kelvin	temperature	base unit
kg	kilogram	mass	base unit
L	litre	volume	m^3/1000
lm	lumen	luminous flux	cd·sr
lx	lux	illuminance	lm/m^2
m	metre	length	base unit
mol	mole	amount of substance	base unit
N	newton	force	kg·m/s^2
Ω	ohm	electric resistance	V/A
Pa	pascal	pressure, stress	N/m^2
rad	radian	plane angle	m/m (dimensionless)
S	siemens	electric conductance	A/V
Sv	sievert	dose equivalent	J/kg
s	second	time	base unit
sr	steradian	solid angle	m^2/m^2 (dimensionless)
T	tesla	magnetic flux density	Wb/m^2
t	tonne, metric ton	mass	1000 kg; Mg
V	volt	electric potential	W/A
W	watt	power, radiant flux	J/s
Wb	weber	magnetic flux	V·s
	* allowed with SI		

Use of Symbols

The correct use of symbols is important because an incorrect symbol may change the meaning of a quantity. Some SI symbols are listed in the Symbol table.

SI has no abbreviations—only symbols. Therefore, no periods follow a symbol except at the end of a sentence.

Examples: A, *not* amp; s *not* sec; SI, *not* S.I.

Symbols appear in lower case unless the unit name has been taken from a proper name. In this case the first letter of the symbol is capitalized.

Examples: m, metre; Pa, pascal; W, watt

Exception: L, litre

Symbols and prefixes are printed in upright (roman) type regardless of the type style in surrounding text.

Example: . . . *a distance* of 73 km *between* . . .

Unit symbols are the same whether singular or plural.

Examples: 1 mm, 100 mm; 1 kg, 65 kg

Leave a space between the value and the symbol.

Examples: 115 W, *not* 115W; 0.75 L, *not* 0.75L
88 °C, *not* 88°C or 88° C

Exception: No space is left between the numerical value and symbol for degree of plane angle.

Examples: 73°, *not* 73 °

Note: Symbol for coulomb is C; for degree Celsius it is °C

Do not mix symbols and names in the same expression.

Examples: radians per second or rad/s,
not radians/second; *not* radians/s
m/s or metres per second,
not metres/second; *not* metres/s
J/kg or joules per kilogram,
not joules/kilogram; *not* joules/kg

Symbol for product—use the raised dot (·)

Examples: N·m; mPa·s; W/(m^2·K)

Symbol for quotient—use one of the following forms:

Examples: m/s or $^m/_s$ or use the negative exponent

Note: Use only one solidus (/) per expression and parentheses to avoid any ambiguity.

PREFIXES

Most prefixes indicate orders of magnitude in steps of 1000 and provide a convenient way to express large and small numbers and to eliminate nonsignificant digits and leading zeroes in decimal fractions.

Examples: 64 000 watts is the same as 64 kilowatts*
0.057 metre is the same as 57 millimetres
16 000 metres is the same as 16 kilometres*
*except for intended accuracy

Prefix	*Symbol*	*Represents*
yotta	Y	10^{24}
zetta	Z	10^{21}
exa	E	10^{18}
peta	P	10^{15}
tera	T	10^{12}
giga	G	10^{9}
mega	M	10^{6}
kilo	k	10^{3}
hecto	h*	10^{2}
deka	da*	10^{1}
deci	d*	10^{-1}
centi	c*	10^{-2}
milli	m	10^{-3}
micro	μ	10^{-6}
nano	n	10^{-9}
pico	p	10^{-12}
femto	f	10^{-15}
atto	a	10^{-18}
zepto	z	10^{-21}
yocto	y	10^{-24}
	* allowed with SI	

To realize the full benefit of the prefixes when expressing a quantity by numerical value, choose a prefix so that the number lies between 0.1 and 1000. For simplicity, give preference to prefixes representing 1000 raised to an integral power (i.e., mm, μm, km).

**Exceptions:* In expressing area and volume, the prefixes hecto, deka, deci, and centi may be required; for example, cubic decimetre (L), square hectometre (hectare), cubic centimetre.

Tables of values of the same quantity.

Comparison of values.

For certain quantities in particular applications. For example, the millimetre is used for linear dimensions in architectural and engineering drawings even when the values lie far outside the range of 0.1 mm to 1000 mm; the centimetre is usually used for anatomical measurements and clothing sizes.

Compound Units. A compound unit is a derived unit expressed with two or more units. The prefix is attached to a unit in the numerator.

Examples: V/m *not* mV/mm
MJ/kg *not* kJ/g

Compound prefixes formed by a combination of two or more prefixes are not used. Use only one prefix.

Examples: 2 nm *not* 2 mμm;
6 m^3*not* 6 kL;
6 mPa *not* 6 kkPA

Exponential Powers. An exponent attached to a symbol containing a prefix indicates that the multiple (of the unit with its prefix) is raised to the power of 10 expressed by the exponent.

Examples: 1 $mm^3 = (10^{-3}\ m)^3 = 10^{-9}\ m^3$
1 $ns^{-1} = (10^{-9}\ s)^{-1} = 10^{9}\ s^{-1}$
1 $mm^2/s = (10^{-3}\ m)^2/s = 10^{-6}\ m^2/s$

NUMBERS

International practice separates the digits of large numbers into groups of three, counting from the decimal to the left and to the right, and inserts a space to separate the groups. In numbers of four digits, the space is not necessary except for the uniformity in tables.

Examples: 6.358 568; 85 365; 51 845 953; 88 000;
0.246 113 562; 7 258

Small Numbers. When writing a number between one and minus one, put a zero before the decimal marker.

Note: This applies to large numbers which have an exponent: as -0.1 × 10^6. This rule is given colloquially as "never use a naked decimal point."

Decimal Marker. The recommended decimal marker is a dot on the line (period). (In some countries, a comma is used as the decimal marker.)

Because **billion** means a million million in most countries but a thousand million in the United States, avoid using billion in technical writing.

DO'S AND DON'TS

The units in the international system of units are called SI units—*not* Metric Units and *not* SI Metric Units.

Non-SI units include inch-pound units, old metric units and many other units. Inch=pound units (IP) refers to sets of units which contain inches and pounds. These include so-called customary units, US customary units, conventional units, imperial units, and English units.

Treat all spelled out names as nouns. Therefore, do not capitalize the first letter of a unit except at the beginning of a sentence or in capitalized material such as a title.

Examples: watt; pascal; ampere; volt; newton; kelvin
Exception: Always capitalize the first letter of Celsius.

Do not begin a sentence with a unit symbol—either rearrange the unit names or write the unit name in full.

Use plurals for spelled out unit names when required by the rules of grammar.

Examples: metre—metres; henry—henries;
kilogram—kilograms; kelvin—kelvins
Irregular: hertz—hertz; lux—lux; siemens—siemens

Do not put a space or hyphen between the prefix and unit name.

Examples: kilometre *not* kilo metre or kilo-metre;
milliwatt *not* milli watt or milli-watt

When a prefix ends with a vowel and the unit name begins with a vowel, retain and pronounce both vowels.

Example: kiloampere
Exceptions: hectare; kilohm; megohm

When a derived unit name is formed by multiplication, leave a space between units that are multiplied.

Examples: newton metre, *not* newton-metre;
volt ampere, *not* volt-ampere

Use the modifier squared or cubed after the unit name.

Example: metre per second squared
Exception: For area or volume the modifier may be placed before the units.
Example: square millimetre; cubic metre

When derived units are formed by division, use the word *per*, not a solidus (/).

Examples: metre per second, *not* metre/second; watt per square metre, *not* watt/square meter

SELECTED CONVERSION FACTORS

CAUTION: These conversion values are rounded to three or four significant figures, which is sufficiently accurate for most applications. When making conversions, remember that a converted value is no more precise than the original value. Round off the final value to the same number of significant figures as those in the original value. See ANSI SI 10 for additional conversions with more significant figures.

Multiply	*By*	*To Obtain*
acre	0.4047	ha
atmosphere, standard	*101.325	kPa
bar	*100	kPa
barrel (42 US gal, petroleum)	159	L
Btu, (International Table)	1.055	kJ
Btu/lb·°F (specific heat, C^P)	4.184	kJ/(kg·K)
bushel	0.03524	m^3
calorie, kilogram (kilocalorie)	4.187	kJ
candle, candlepower	*1.0	cd
centipoise, dynamic viscosity, μ	*1.00	mPa·s
centistokes, kinematic viscosity, ν	*1.00	mm^2/s
ft	*0.3048	m
ft	*304.8	mm
ft/min, fpm	*0.00508	m/s
ft/s, fps	*0.3048	m/s
ft of water	2.99	kPa
ft^2	0.09290	m^2
ft^2/s, kinematic viscosity, ν	92 900	mm^2/s
ft^3	28.32	L
ft^3	0.02832	m^3
ft^3/h, cfh	7.866	mL/s
ft^3/min, cfm	0.4719	L/s
ft^3/s, cfs	28.32	L/s
footcandle	10.76	lx
ft·lb_f (torque or moment)	1.36	N·m
ft·lb_f (work)	1.36	J
ft·lb_f/lb (specific energy)	2.99	J/kg
ft·lb_f/min (power)	0.0226	W
gallon, US (*231 in^3)	3.785	L
gph	1.05	mL/s
gpm	0.0631	L/s
gpm/ft^2	0.6791	L/(s·m^2)
gr/gal	17.1	g/m^3
horsepower (550 ft·lb_f/s)	0.746	kW
inch	*25.4	mm
in of mercury (60°F)	3.377	kPa

Multiply	*By*	*To Obtain*
in of water (60°F)	248.8	Pa
in·lb_f (torque or moment)	113	mN·m
in^2	645	mm^2
in^3 (volume)	16.4	mL
in^3 (section modulus)	16 400	mm^3
in^4 (section moment)	416 200	mm^4
km/h	0.278	m/s
kWh	*3.60	MJ
kip/in^2 (ksi)	6.895	MPa
litre	*0.001	m^3
micron (μm) of mercury (60°F)	133	mPa
mil (0.001 in.)	*25.4	mm
mile	1.61	km
mile, nautical	1.85	km
mph	1.61	km/h
mph	0.447	m/s
millibar	*0.100	kPa
mm of mercury (60°F)	0.133	kPa
mm of water (60°F)	9.80	Pa
ounce (mass, avoirdupois)	28.35	g
ounce (force of thrust)	0.278	N
ounce (liquid, US)	29.6	mL
ounce (avoirdupois) per gallon	7.49	kg/m^3
pint (liquid, US)	473	mL
pound		
lb_m (mass)	0.4536	kg
lb_m (mass)	453.6	g
lb_f (force or thrust)	4.45	N
lb_m/ft (uniform load)	1.49	kg/m
lb_m/(ft·h) (dynamic viscosity, μ)	0.413	mPa·s
lb_m/(ft·s) (dynamic viscosity, μ)	1490	mPa·s
lb_f·s/ft^2 (dynamic viscosity, μ)	47 880	mPa·s
lb_m/min	0.00756	kg/s
lb_m/h	0.126	g/s
lb_f/ft^2	47.9	Pa
lb_m/ft^2	4.88	kg/m^2
lb_m/ft^3 (density, ρ)	16.0	kg/m^3
lb_m/gallon	120	kg/m^3
ppm (by mass)	*1.00	mg/kg
psi	6.895	kPa
quad (10^{15} Btu)	1.06	EJ
quart (liquid, US)	0.946	L
rpm	0.105	rad/s
tablespoon (approx.)	15	mL
teaspoon (approx.)	5	mL
therm (100,000 Btu)	105.5	MJ
ton, short (2000 lb)	0.907	Mg; t (tonne)
yd	*0.9144	m
yd^2	0.836	m^2
yd^3	0.7646	m^3

* Conversion factor is exact.

Note: In this list the kelvin (K) expresses temperature intervals. The degree Celsius symbol (C) may be used for this purpose as well