

DESIGNER

HANDBOOK

SPECIFICATIONS

FOR

STAINLESS

STEEL



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INTRODUCTION

This designer handbook has been written to provide the designer, engineer, specification writer, producer and user of STAINLESS STEEL with a listing of all the current ASTM (American Society for Testing and Materials) standards. These standards are listed by mill shape (BAR, SHEET, WIRE, etc.) and by product (bolts, fittings). Stainless types are also listed, along with a selection of applicable society and military specifications.

ACKNOWLEDGMENT

An original version was initially published by the Committee of Stainless Steel Producers, American Iron and Steel Institute (AISI), Washington, D.C., and was used, with thanks, as a basis for this updated handbook.

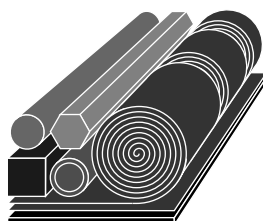
The 2001 Annual Book of ASTM Standards, Sections 1 and 13 were used as the reference base for listed ASTM specifications.

GENERAL INFORMATION

Stainless steel is not a single alloy, but rather the name applies to a group of iron based alloys containing a minimum of 10.5% chromium. Other elements are added and the chromium content is increased to improve corrosion resistance and/or enhance mechanical properties. There are over 50 stainless steel types originally recognized by the AISI and are detailed in a designer handbook, "Design Guidelines for the Selection and Use of Stainless Steel," available from the Specialty Steel Industry of North America (SSINA).

The assumption is made that the reader is well aware of the various types of stainless steels including the five metallurgical classifications (austenitic, ferritic, martensitic, austenitic/ferritic-or-duplex, and precipitation hardening). Where possible, these five classifications are generally shown with austenitic first. In some cases the ASTM reference is to the content rather than the classification. In those cases the basic content is listed (i.e., iron-chromium-nickel).

Specifications by type are listed by the types generally in use and do not cover all the stainless steel types that are available.



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ASTM STAINLESS STEEL STANDARDS

SPECIFICATIONS

A167	Plate, sheet and strip, chromium-nickel	A565	Bars, forgings and forging stock for high temperature service, martensitic
A176	Plate, sheet and strip, chromium	A579	Superstrength alloy forgings
A182	Forged flanges, fittings and valves	A580	Wire
A193	Bolts	A581	Wire, free-machining
A194	Nuts	A582	Bars, hot-rolled or cold-finished, free-machining
A213	Seamless ferritic and austenitic alloy boiler, superheater and heat exchanger tubes	A608	Centrifugally cast iron-chromium-nickel high alloy tubing for pressure application at high temperatures
A217	Castings, martensitic stainless and alloy	A632	Seamless and welded tubing, small diameter, for general service, austenitic
A240	Plate, sheet and strip for pressure vessels	A638	Iron-base superalloy bars, forgings and forging stock for high temperature service, precipitation hardening
A249	Tubes, welded boiler, superheater, heat-exchanger and condenser, austenitic	A666	Sheet, strip, plate and flat bar, for structural and architectural applications, austenitic
A263	Clad plate, sheet and strip, chromium	A688	Welded feedwater heater tubes, austenitic
A264	Clad plate, sheet and strip, chromium-nickel	A693	Plate, sheet and strip, precipitation hardening
A268	Tubing, seamless and welded, ferritic	A705	Forgings, age hardening
A269	Tubing, seamless and welded, austenitic	A733	Welded and seamless carbon steel and austenitic stainless steel pipe nipples
A270	Sanitary tubing, austenitic	A743	Castings, iron-chromium, iron-chromium-nickel and nickel-base, corrosion resistant, for general service
A276	Bars and shapes	A744	Castings, Iron-chromium-nickel, for severe service
A297	Castings, iron-chromium, iron-chromium-nickel, heat resistant, for general application	A747	Castings, precipitation hardening
A312	Pipe, austenitic	A756	Anti-friction bearing steel
A313	Spring wire, chromium-nickel	A757	Castings, ferritic and martensitic for pressure-containing and other applications for low temperature service
A314	Bars and billets for forging	A771	Tubing for breeder reactor core components, austenitic
A320	Bolting for low temperature service	A774	As-welded fittings for general corrosive service at low and moderate temperatures, austenitic
A336	Forgings for pressure and high temperature parts	A778	Welded tubular products, unannealed austenitic
A351	Castings for pressure-containing parts, austenitic, austenitic-ferritic (duplex)	A781	Castings, common requirements for general industrial use
A352	Castings for pressure-containing parts suitable for low temperature service, ferritic and martensitic	A789	Seamless and welded tubing for general service, ferritic/austenitic
A356	Heavy-walled castings for steam turbines	A790	Seamless and welded pipe, ferritic/austenitic
A358	Electric fusion welded pipe, austenitic	A791	Welded tubing, unannealed ferritic
A368	Wire strand	A793	Rolled floor plate, austenitic
A376	Pipe for high-temperature central station service, austenitic	A803	Welded feedwater heater tubes, ferritic
A403	Pipe fittings	A813	Single- or double-welded pipe, austenitic
A409	Welded large diameter pipe, austenitic	A814	Cold-worked welded pipe, austenitic
A426	Centrifugally-cast pipe, ferritic	A815	Pipe fittings, ferritic, ferritic/austenitic and martensitic
A430	Forged and bored pipe, austenitic	A826	Duct tubes for breeder reactor core components, austenitic and ferritic
A437	Alloy steel turbine-type bolting material specially heat treated for high temperature service	A831	Bars, billets and forgings for use in core components
A447	Castings for high temperature service, chromium-nickel-iron	A851	High-frequency, induction-welded condenser tubes, austenitic
A450	General requirements for tubes, austenitic and ferritic	A872	Centrifugally cast pipe for corrosive environments, ferritic/austenitic
A451	Centrifugally cast austenitic steel pipe for high temperature service	A887	Borated stainless steel plate, sheet and strip for nuclear applications
A453	Bolting materials, high temperature, 50 to 120 ksi yield strength with expansion coefficients comparable to austenitic steels	A890	Castings, iron-chromium-nickel-molybdenum, for general application, duplex (austenitic/ferritic)
A473	Forgings	A891	Iron-base superalloy forgings for turbine rotor disks and wheels, precipitation hardening
A478	Weaving wire, chromium-nickel	A895	Plate, sheet and strip, free machining
A479	Bars and shapes for use in boilers and other pressure vessels	A908	Needle tubing
A480	General requirements for plate, sheet and strip	A928	Pipe, electric fusion welded with addition of filler metal, ferritic/austenitic (duplex)
A484	General requirements for bars, billets and forgings	A943	Spray-formed seamless pipes, austenitic
A487	Castings suitable for pressure service, martensitic	A946	Plate, sheet and strip, chromium-nickel-silicon alloy
A492	Rope wire	A947M	Textured sheet
A493	Cold heading and cold forging bar and wire	A949	Spray-formed seamless pipe, ferritic/austenitic
A498	Seamless and welded carbon, ferritic and austenitic alloy heat exchanger tubes with integral fins	A953	Seamless and welded tubing, austenitic chromium-nickel-silicon alloy
A511	Seamless mechanical tubing		
A530	Specialized carbon and alloy steel pipe, general requirements		
A554	Welded mechanical tubing		
A555	General requirements for wire and wire rods		
A564	Bars and shapes, hot-rolled and cold-finished, age hardening		

- A954 Seamless and welded pipe, austenitic chromium-nickel-silicon alloy
- A955 Deformed and plain bars for concrete reinforcement
- A957 Investment castings, steel and alloy, common requirements for general industrial use
- A959 Guide for specifying harmonized standard grade compositions for wrought stainless steels
- A960 Common requirements for wrought steel pipe fittings
- A968 Bars and shapes, chromium-nickel-silicon alloy
- A965 Forgings for pressure and high temperature parts
- A988 Hot isostatically-pressed flanges, fittings, valves and parts
- A995 Castings for pressure-containing parts, austenitic-ferritic (duplex)
- A999 General requirements for alloy and stainless pipe
- A1010 Higher strength plate, sheet and strip, martensitic
- A1012 Seamless and welded ferritic, austenitic and duplex alloy steel condenser and heat exchanger tubes with integral fins
- 1016 General requirements for alloy and stainless tubes
- C795 Thermal insulation for use in contact with austenitic stainless steel
- E437 Industrial wire cloth and screens (square opening series)
- E454 Industrial perforated plate and screens (square opening series)
- E674 Industrial perforated plate and screens (round opening series)
- F138 Surgical implants, bar and wire, special quality
- F139 Surgical implants, sheet and strip, special quality
- F352 Lock washers (surgical implants)
- F593 Bolts, hex cap screws and studs
- F594 Nuts
- F621 Forgings for surgical implants
- F642 Flexible wire for surgical fixations for soft tissue
- F738M Metric bolts, screws and studs
- F745 Shot/bar/ingot for cast/solution treated implants
- F836M Metric nuts
- F837 Socket head cap screws
- F879M Metric socket button and flat countersunk cap screws
- F880 Socket set screws
- F899 Billet, bar and wire for surgical instruments
- F1079 Inserted and noninserted surgical scissors
- F1314 Bar and wire for surgical implants, nitrogen-strengthened high manganese high chromium
- F1350 Surgical fixation wire
- A800 Estimating ferrite content of austenitic alloy steel castings **01.02**
- A880 Criteria for use in evaluation of testing laboratories and organizations for examination of steel, stainless steel and related alloys **01.03**
- A967 Chemical passivation treatments for stainless steel parts **01.03**
- B254 Preparation of and electroplating on stainless steel **02.05**
- D2651 Preparation of metal surfaces for adhesive bonding **15.06**
- E426 Practice for electromagnetic (eddy-current) testing of seamless and welded tubular products, austenitic stainless steels and similar alloys **03.03**
- E527 Practice for numbering metals and alloys (UNS)
- G35 Determining the susceptibility of stainless steels and related nickel-chromium-iron alloys to stress corrosion cracking in polythionic acids **03.02**
- G46 Examination and evaluation of pitting corrosion **03.02**
- G58 Preparation of stress-corrosion test specimens for weldments **03.02**
- G78 Guide for crevice corrosion testing of iron base and nickel base stainless alloys in seawater and other chloride-containing environments **03.02**

TEST METHODS

- A370 Mechanical testing of steel products **01.01, 01.02, 01.03, 01.04, 01.05**
- A604 Macroetch testing bars, billets and blooms **01.03, 01.05,**
- A751 Test methods, practices and terminology for chemical analysis of steel products **01.01, 01.02, 01.03, 01.04, 01.05, 03.05**
- A923 Detecting detrimental intermetallic phase in wrought ferritic-austenitic (duplex) stainless steels **01.03**
- E112 Determining average grain size **03.01**
- E327 Optical emission spectrometric analysis of stainless type 18-8 steels by the point-to-plane technique **03.05**
- E572 X-ray emission spectrometric analysis of stainless steel **03.06**
- E1086 Optical emission vacuum spectrometric analysis of stainless steel by the point-to-plane excitation technique **03.06**
- G36 Practice for performing stress-corrosion cracking tests in a boiling ferric chloride solution **03.02**
- G48 Pitting and crevice corrosion resistance of stainless steels and related alloys by the use of ferric chloride solution **03.02**
- G98 Galling resistance of materials **03.02**
- G108 Electrochemical reactivation (EPR) for detecting sensitization of AISI Type 304 and 304L stainless steels **03.02**

PRACTICES

(ASTM Volume No. follows each entry)

- A262 Detecting susceptibility to attack in austenitic stainless steels **01.03, 01.05, 03.02**
- A380 Cleaning and descaling stainless steel parts, equipment and systems **01.03, 02.05**
- A609 Castings, carbon, low-alloy, and martensitic stainless steel, ultrasonic examination thereof **01.02**
- A700 Packaging, marketing and loading methods for steel products for domestic shipment **01.01, 01.03, 01.04, 01.05**
- A745 Ultrasonic examination of austenitic steel forgings **01.05**
- A763 Detecting susceptibility to intergranular attack in ferritic stainless steels **01.03**
- A799 Instrument calibration for estimating ferrite content of stainless steel castings **01.02**

HARDNESS CONVERSION TABLES

- E140 Standard hardness conversion tables for metals (includes tables for austenitic stainless steel plate and sheet) **03.01**

SPECIFICATIONS BY MILL SHAPE

Bar (ASTM Volume 01.03)

A276	.....	Bars and shapes
A479	.....	Bars and shapes for use in boilers and other pressure vessels
A484	.....	General requirements for bars, billets and forgings
A564	.....	Bars and shapes, hot-rolled and cold-finished, age hardening
A565	.....	Bars, forgings and forging stock for high temperature service, martensitic
A582	.....	Bars, hot-rolled or cold-finished, free-machining
A831	.....	Bars, billets and forgings for use in core components
A955	.....	Deformed and plain bars for concrete reinforcement 01.04
A968	.....	Bars and shapes, chromium-nickel-silicon alloy

Castings (ASTM Volume 01.02)

A217	.....	Castings, martensitic stainless and alloy
A297	.....	Castings, iron-chromium, iron-chromium-nickel, heat resistant, for general application
A351	.....	Castings for pressure-containing parts, austenitic, austenitic-ferritic (duplex)
A352	.....	Castings for pressure-containing parts suitable for low temperature service, ferritic and martensitic
A356	.....	Heavy-walled castings for steam turbines
A447	.....	Castings for high temperature service, chromium-nickel-iron
A487	.....	Castings suitable for pressure service, martensitic
A608	.....	Centrifugally cast iron-chromium nickel high alloy tubing for pressure application at high temperatures
A743	.....	Castings, iron-chromium, iron-chromium-nickel and nickel-base, corrosion resistant, for general service
A744	.....	Castings, iron-chromium-nickel, for severe service
A747	.....	Castings, precipitation hardening
A757	.....	Castings, ferritic and martensitic for pressure-containing and other applications for low temperature service
A781	.....	Castings, common requirements for general industrial use
A890	.....	Castings, iron-chromium-nickel-molybdenum for general application, duplex (austenitic/ferritic)
A957	.....	Investment castings, steel and alloy, common requirements for general industrial use
A995	.....	Austenitic-ferritic (duplex) castings for pressure-containing parts

Forgings (ASTM Volume 01.05)

A314	.....	Bars and billets for forging
A336	.....	Forgings for pressure and high temperature parts
A473	.....	Forgings
A484	.....	General requirements for bars, billets and forgings
A705	.....	Forgings, age hardening
A965	.....	Forgings for pressure and high temperature, austenitic

Pipe (ASTM Volume 01.01)

A312	.....	Pipe, austenitic
A358	.....	Electric fusion welded pipe, austenitic
A376	.....	Pipe for high-temperature central station service, austenitic
A409	.....	Welded large diameter pipe, austenitic
A426	.....	Centrifugally-cast pipe, ferritic
A430	.....	Forged and bored pipe, austenitic
A530	.....	Specialized carbon and alloy steel pipe, general requirements
A733	.....	Welded and seamless carbon steel and austenitic stainless steel pipe nipples
A790	.....	Seamless and welded pipe, ferritic/austenitic
A813	.....	Single- or double-welded pipe, austenitic
A814	.....	Cold-worked welded pipe, austenitic
A815	.....	Pipe fittings, ferritic, ferritic/austenitic and martensitic
A872	.....	Centrifugally cast pipe for corrosive environments, ferritic/austenitic
A928	.....	Pipe, electric fusion welded with addition of filler metal, ferritic/austenitic (duplex)
A943	.....	Spray-formed seamless pipe, austenitic
A949	.....	Spray-formed seamless pipe, ferritic/austenitic
A954	.....	Seamless and welded pipe, austenitic chromium-nickel-silicon alloy
A960	.....	Common requirements for wrought steel pipe fittings.
A999	.....	General requirements for alloy and stainless steel pipe

Plate, Sheet and Strip (ASTM Volume 01.03)

A167	.....	Plate, sheet and strip, chromium-nickel
A176	.....	Plate, sheet and strip, chromium
A240	.....	Plate, sheet and strip for pressure vessels
A263	.....	Clad plate, sheet and strip, chromium
A264	.....	Clad plate, sheet and strip, chromium-nickel
A666	.....	Sheet, strip, plate and flat bar, for structural and architectural applications, austenitic
A693	.....	Plate, sheet and strip, precipitation hardening
A793	.....	Rolled floor plate, austenitic
A887	.....	Borated stainless steel plate, sheet and strip for nuclear applications
A895	.....	Plate, sheet and strip, free machining
A946	.....	Plate, sheet and strip, chromium-nickel-silicon alloy
A947M	.....	Textured sheet
A1010	.....	Higher strength plate, sheet and strip, martensitic

Tube (ASTM Volume 01.01)

A213	.....	Seamless ferritic and austenitic alloy boiler, superheater and heat exchanger tubes
A249	.....	Tubes, welded boiler, superheater, heat-exchanger and condenser, austenitic
A268	.....	Tubing, seamless and welded, ferritic
A269	.....	Tubing, seamless and welded, austenitic
A270	.....	Sanitary tubing, austenitic
A450	.....	General requirements for tubes, austenitic and ferritic
A498	.....	Seamless and welded carbon, ferritic and austenitic alloy heat exchanger tubes with integral fins
A511	.....	Seamless mechanical tubing
A554	.....	Welded mechanical tubing

A608	Centrifugally cast iron-chromium nickel high alloy tubing for pressure application at high temperatures
A632	Seamless and welded tubing, small diameter, for general service, austenitic
A688	Welded feedwater heater tubes, austenitic
A771	Tubing for breeder reactor core components, austenitic
A778	Welded tubular products, unannealed austenitic
A789	Seamless and welded tubing for general service, ferritic/austenitic
A791	Welded tubing, unannealed ferritic
A803	Welded feedwater heater tubes, ferritic
A826	Duct tubes for breeder reactor core components, austenitic and ferritic
A851	High-frequency, induction-welded condenser tubes, austenitic
A908	Needle tubing
A953	Seamless and welded tubing, austenitic chromium-nickel-silicon alloy
A1012	Seamless and welded ferritic, austenitic and duplex alloy steel condenser and heat exchanger tubes with integral fins
A1016	General requirements for alloy and stainless steel tubes

Wire and Wire Rod (ASTM Volume 01.03)

A313	Spring wire, chromium-nickel
A368	Wire strand
A478	Weaving wire, chromium-nickel
A492	Rope wire
A493	Cold heading and cold forging bar and wire
A555	General requirements for wire and wire rods
A580	Wire
A581	Wire, free-machining

STAINLESS STEEL SPECIFICATIONS ACCORDING TO PRODUCT TYPE

Architectural Applications

A666	Sheet, strip, plate and flat bar, for structural and architectural applications, austenitic (ASTM Volume 01.03)
A947M	Textured sheet (ASTM Vol. 01.03)

Bearings (ASTM Volume 01.05)

A756	Anti-friction bearing steel
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Bolts and Nuts (ASTM Volume 01.01)

A193	Bolts
A194	Nuts
A320	Bolting for low temperature service
A437	Alloy steel turbine-type bolting material specially heat treated for high temperature service
A453	Bolting materials, high temperature, 50 to 120 ksi yield strength with expansion coefficients comparable to austenitic steels

Fasteners (ASTM Volume 15.08)

F593	Bolts, hex cap screws and studs
F594	Nuts
F738M	Metric bolts, screws and studs
F836M	Metric nuts
F837	Socket head cap screws
F879M	Metric socket button and flat countersunk cap screws
F880	Socket set screws

Fittings, Flanges & Valves (ASTM Volume 01.01)

A182	Forged flanges, fittings and valves
A403	Pipe fittings
A774	As-welded fittings for general corrosive service at low and moderate temperatures, austenitic
A815	Pipe fittings, ferritic, ferritic/austenitic and martensitic
A988	Hot isostatically-pressed flanges, fittings, valves and parts for high temperature service

Floor Plate (ASTM Volume 01.03)

A793	Rolled floor plate, austenitic
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Industrial Wire Cloth, Screens & Perforated Plate (ASTM Volume 14.02)

E437	Industrial wire cloth and screens (square opening series)
E454	Industrial perforated plate and screens (square opening series)
E674	Industrial perforated plate and screens (round opening series)

Needle Tubing (ASTM Volume 01.01)

A908	Needle tubing
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Nuclear Applications

A771	Tubing for breeder reactor core components, austenitic (01.01)
A826	Duct tubes for breeder reactor core components, austenitic and ferritic (01.01)
A831	Bars, billets and forgings for use in core components (01.03)
A887	Borated stainless steel plate, sheet and strip for nuclear applications (01.03)

Sanitary Tubing (ASTM Volume 01.01)

A270	Sanitary tubing, austenitic
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Surgical Implant Materials (ASTM Volume 13.01)

F138	Surgical implants, bar and wire, special quality
F139	Surgical implants, sheet and strip, special quality
F352	Lock washers (surgical implants)
F621	Forgings for surgical implants
F642	Flexible wire for surgical fixations for soft tissue
F745	Shot/bar/ingot for cast/solution treated implants
F899	Billet, bar and wire for surgical instruments
F1079	Inserted and noninserted surgical scissors
F1314	Bar and wire for surgical implants, nitrogen-strengthened high manganese high chromium
F1350	Surgical fixation wire
F1586	Bar for surgical implants nitrogen-strengthened, 21Cr-10Ni-3Mn-2.5Mo

SELECTED STAINLESS STEEL TYPES AND APPLICABLE SPECIFICATIONS

TYPE	UNS	ASTM	ASME	AMS	SAE	MILITARY	ACI
305	S30500	A193 A194 A240 A249 A276 A313 A314 A320 A368 A473 A478 A492 A493 A511 A554 A580 F593 F594 F738 F836 F837 F879 F880	SA193 SA194 SA240	5514 5685 5686	30305 J405 J412	MIL-S-24149/3 MIL-S-24149/6 MIL-W-30508	
308	S30800	A167 A276 A314 A473 A580			30308	MIL-E-19933	
309	S30900	A167 A264 A276 A314 A403 A409 A473 A580	SA249 SA312 SA358 SA403 SA409	QQ-S-763	30309 J412	MIL-E-19933 MIL-S-862 MIL-S-24149/3 MIL-S-24149/6	CH-20
309S	S30908	A213 A240 A249 A276 A312 A314 A358 A409 A473 A478 A479 A511 A554 A580 A813 A814 A924 A943	SA240	5523 5574 5650 7490	30309S J405 J467		HH
310	S31000	A167 A182 A213 A240 A249 A276 A312 A314 A336 A473 A580 A632	SA182 SA213 SA312 SA358 SA403 SA409	QQ-S-763	30310 J412 J467	MIL-B-15382 MIL-E-19933 MIL-S-854 MIL-S-862 MIL-S-24149/3 MIL-S-24149/6	CK-20
310S	S31008	A213 A240 A249 A264 A276 A312 A314 A358 A409 A473 A479 A511 A554 A580 A813 A814 A924 A943	SA240 SA479	5521 5572 5577 5651 7490 QQ-S-763	30310S J405		HK
314	S31400	A276 A314 A473 A580		5652 7490	30314 J467		
316	S31600	A182 A193 A194 A213 A240 A249 A264 A269 A270 A271 A276 A312 A313 A314 A320 A336 A358 A368 A376 A403 A409 A430 A580 A632 A666 A688 A793 A813 A814 A826 A831 A943 A965 A988 F55 F56 F593 F594 F738 F836 F837 F879 F899	SA182 SA193 SA194 SA213 SA240 SA249 SA312 SA320 SA358 SA376 SA403 SA409 SA479 SA688	5524 5573 5646 5648 5649 5690 5691	30316 J412 J467	MIL-F-20138 MIL-S-854 MIL-S-862 MIL-C-24707/3 MIL-E-22200/2 MIL-S-24149/3 MIL-S-24249/6	CF-8M CF-12M
316L	S31603	A182 A213 A240 A249 A269 A270 A276 A312 A314 A336 A358 A403 A409 A473 A478 A479 A493 A511 A554 A580 A632 A666 A688 A774 A778 A793 A813 A814 A943 A965 A988 F593 F594 F738 F836 F837 F879	SA182 SA183 SA240 SA249 SA312 SA403 SA479 SA688	5507 5584 5653 S-7720 QQ-S-763	30316L J405	MIL-E-19933 MIL-S-862	CF-3M
316F	S31620			5649			
316N	S31651	A182 A193 A194 A213 A240 A312 A336 A358 A376 A403 A479 A666 A688 A813 A814 A943 A965 A988	SA182 SA213 SA240 SA249 SA312 SA358 SA376 SA403 SA479		J405		
316LN	S31653	A182 A193 A194 A213 A240 A249 A269 A276 A312 A320 A336 A358 A376 A403 A479 A688 A813 A814 A943 A965 A988			J405		

SELECTED STAINLESS STEEL TYPES AND APPLICABLE SPECIFICATIONS

TYPE	UNS	ASTM	ASME	AMS	SAE	MILITARY	ACI
317	S31700	A182 A213 A240 A249 A269 A276 A312 A314 A409 A473 A478 A479 A511 A554 A580 A632 A813 A814 A943 A988 F55 F56 F138 F139 F899	SA240 SA249 SA312 SA403 SA409	QQ-S-763	30317 J405	MIL-E-19933 MIL-S-862	CG-8M
317L	S31703	A182 A213 A240 A249 A312 A403 A774 A778 A813 A814 A903 A943 A988 F55 F56 F138 F139	SA240		J405		
321	S32100	A182 A193 A194 A213 A240 A249 A264 A269 A276 A312 A313 A314 A320 A336 A358 A376 A409 A430 A473 A479 A511 A554 A580 A632 A774 A778 A813 A814 A943 A965 F593 F594 F738 F836	SA182 SA193 SA194 SA213 SA240 SA249 SA312 SA320 SA358 SA376 SA403 SA409 SA479	5510 5557 5559 5570 5576 5645 5689 7490 AS7325 QQ-S-763	30321 J405 J412 J467	MIL-E-19933 MIL-P-24691/3 MIL-S-854 MIL-S-862 MIL-T-16282	
329	S32900	A240 A789 A790 A928 A949	SA789				
330	N08330	A554 B366 B511 B512 B535 B536 B546 B710 B739	SB366 SB511 SB536 SB710	5592 5716	30330 J412 J467		HK
347	S34700	A182 A193 A194 A213 A240 A249 A264 A269 A276 A312 A313 A314 A320 A336 A358 A376 A403 A409 A430 A473 A479 A511 A554 A580 A632 A774 A778 A813 A814 A943 A965 F593 F594 F738 F836	SA182 SA193 SA213 SA240 SA249 SA312 SA320 SA358 SA376 SA403 SA409 SA479	5512 5556 5558 5571 5575 5646 5654 5674 5790 5897 7490 AS7229 QQ-S-763	30347 J405 J412 J467	MIL-E-19933 MIL-S-862 MIL-S-18170 MIL-S-18171 MIL-T-16286 MIL-T-18063	CF-8C
348	S34800	A182 A213 A240 A249 A269 A276 A312 A314 A336 A358 A376 A403 A409 A473 A479 A580 A632 A813 A814 A943 A965 F593 F594	SA182 SA213 SA240 SA249 SA312 SA358 SA376 SA403 SA409 SA479		30348 J405	MIL-C-24707/3	
384	S38400	A473 A493 F593 F594 F738 F837 F879 F880			30384		
403	S40300	A176 A276 A314 A479 A511 A580		5614	51403		
405	S40500	A240 A268 A276 A314 A479 A511 A580	SA240 SA268 SA479		51405		
409	S40900	A240 A268 A651 A791 A803	SA268		51409		
410	S41000	A182 A193 A194 A240 A268 A276 A314 A336 A473 A479 A493 A511 A580 A815 A837 A988 F593 F594 F738 F899	SA194 SA240 SA268 SA479	5350 5504 5505 5591 5613 5776 5777 5876 QQ-S-763	51410 J412 J467		

SELECTED STAINLESS STEEL TYPES AND APPLICABLE SPECIFICATIONS

TYPE	UNS	ASTM	ASME	AMS	SAE	MILITARY	ACI
414	S41400	A276 A314 A473 A479 A511 A580		5615 QQ-S-763	51414 J412		
416	S41600	A194 A314 A473 A581 A582 A593 A594 A895 F738 F836 F899	SA194	5610	51416 J412		
416Se	S41623	A194 A314 A473 A511 A581 A582 A895 F593 F594 F738 F836	SA194	5610	51416Se		
420	S42000	A176 A276 A314 A473 A580		5506 5621 AS7202 QQ-S-763	51420 J412		
420F	S42020	A582 A895 F899		5620	51420F J412		
422	S42200	A176 A565		5655	51422 J775		
429	S42900	A182 A240 A268 A276 A314 A473 A493 A511 A554 A815	SA182 SA240 SA268	QQ-S-763	51429		
430	S43000	A182 A240 A268 A276 A314 A473 A479 A493 A511 A554 A580 A815 F593 F594 F738 F836	SA182 SA240 SA268 SA479	5503 5627 QQ-S-763	51430 J412		
430F	S43020	A314 A473 A581 A582 A895 F593 F594 F738 F836 F899			51430F J412		
430FSe	S43023	A314 A473 A581 A582 A895			51430FSe		
431	S43100	A176 A276 A314 A473 A479 A493 A580 A593 A594 F738 F836 F899		5628 S-18732	51431 J412	MIL-S-8967	
434	S43400	A240			51434 J405 J412		
436	S43600	A240			51436 J405 J412		
439	S43035	A240 A268 A463 A479 A803	SA240 SA268 SA479				
440A	S44002	A276 A314 A473 A511 A580 F899		5631 7445 QQ-S-763	51440A J412		
440B	S44003	A276 A314 A473 A580 F899		7445 QQ-S-763	51440B		
440C	S44004	A276 A314 A473 A493 A580 F899		5630 5618 5899 7445 QQ-S-763	51440C		
442	S44200	A176			51442 J412		
444	S44400	A213 A240 A268 A276 A479 A493 A580 A791 A803					
446	S44600	A176 A268 A276 A314 A473 A511 A580 A815	SA268	QQ-S-763	51446 J412		
446MOD	S44660	A240 A268 A803			J405		
	S13800	A564 A693 A705	SA705	5629			
	S15500	A564 A693 A705	SA705	5520 5658 5659			
	S17400	A564 A693 A705	SA567 SA705	5604 5622 5643			
	S17700	A564 A693 A705	SA705	5529 5644 5673			
2205	S31803	A240 A276 A479 A789 A790 A815 A923 A928 A949 A988	SA240 SA789 SA790		J405		