

ASTM A334 ASME SA334 Gr. 6 Seamless Steel Tubes

ASME SA334 Standard Specification for Seamless and Welded Carbon and Alloy-Steel Tubes for Low-Temperature Service



ASME SA334 Gr.6 Seamless Tubes 19.05

ASTM A334 / ASME SA334 covers several grades of minimum- wall-thickness, seamless and welded, carbon and alloy-steel tubes intended for use at low temperatures.

Standard: ASTM A334 / ASME SA334

Description Name: ASME SA334 / ASTM A334 Seamless Tubes; A334 Grade 6 Tube; A334 carbon steel tube; ASTM A334 seamless tubing; SA334 Seamless Tube; ASTM A334 cold drawn seamless steel tube; ASTM A334 tubing

Size: 3/4in. to 3in. [19.05mm to 76.2mm] **W.T.:** 1.65mm-6.5mm **Shape:** Round

Production type: Cold drawn and cold rolled.

Length: Single random length / Double random length, or as customer's actual request max length is 25m **Grade:** Gr.6

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Applications

Used for low temperature service for Heat Exchanger, Condenser and Boilers.

ASTM A334 / ASME SA334 Chemical Compositions

Standard	Grade	Chemical Components (%)					
		C	Si	Mn	P	S	Ni
ASTM A334/ ASME SA334	GR.6	≤0.30	≥0.10	0.29-1.06	≤0.025	≤0.025	/

Mechanical Tests Required

Standard	Grade	Mechanical Properties			
		Tensile	Yield	Elongation	The Low degree of Temperature test
		Strength (Mpa)	Strength (Mpa)	(%)	
ASTM A334/ ASME SA334	Gr.6	≥415	≥240	≥30	-45°

ASTM A334/ASME SA334 GR.6 Hardness:

Maximum Hardness Number

Grade	Rockwell	Brinell
6	B90	190

A334 GR.6 Impact requirements

Size of Specimen, mm	Minimum Average Notched Bar Impact Value of. Each Set of Three Specimens		Minimum Notched Bar Impact Value of One Specimen Only of a Set	
	ft·lbf	J	ft·lbf	J
10 by 10	13	18	10	14
10 by 7.5	10	14	8	11
10 by 6.67	9	12	7	9
10 by 5	7	9	5	7
10 by 3.33	5	7	3	4
10 by 2.5	4	5	3	4

A334 GR.6 Impact Temperature Reduction:

Specimen Width Along Notch or Accrual Material Thickness		Temperature Reduction, Degrees Colder	
In.	mm	°F	°C
0.394	10 (Standard size)	0	0
0.354	9	0	0
0.315	8	0	0
0.295	7.5(3/4 std. size)	5	3
0.276	7	8	4
0.262	6.67(2/3 std. size)	10	5
0.236	6	15	8
0.197	5(1/2 std. size)	20	11
0.158	4	30	17
0.131	3.33(1/3 std. size)	35	19
0.118	3	40	22
0.099	2.5(1/4 std. size)	50	28

Other Mechanical tests as follows:

- **Flattening Test** One flattening test shall be made on specimens from each end of one finished tube of each lot.
- **Flare Test (Seamless Tubes)** One flare test shall be made on specimens from each end of one finished tube of each lot.
- **Flange Test (Welded Tubes)** One flange test shall be made on specimens from each end of one finished tube of each lot.
- **Reverse Flattening Test** For welded tubes, one re-verse flattening test shall be made on a specimen from each 1500 ft [460 m] of finished tubing.
- **Hardness Test** Brinell or Rockwell hardness tests shall be made on specimens from two tubes from each lot (Note 3).
- **Impact Tests** One notched-bar impact test, consisting of breaking three specimens, shall be made from each heat represented in a heat-treatment load on specimens taken from the finished tube.

ASTM A334 / ASME SA334 GR.6 tubes Hydrostatic or NDT test

Each A334 GR.6 tube shall be subjected to the nondestructive electric test or the hydrostatic test. The type of test to be used shall be at the option of the manufacturer, unless otherwise specified in the purchase order.

Heat Treatment

All A334 GR.6 seamless and welded tubes, other than Grades 8 and 11, shall be treated to control their microstructure in accordance with one of the following methods:

- Normalize by heating to a uniform temperature of not less than 1550°F [845°C] and cool in air or in the cooling chamber of an atmosphere-controlled furnace.
- Normalize as in standard 10.1.1, and, at the discretion of the manufacturer, reheat to a suitable tempering temperature.
- For the seamless process only, reheat and control hot working and the temperature of the hot-finishing operation to a finishing temperature range from 1550 to 1750°F [845 to 955°C] and cool in a controlled atmosphere furnace from an initial temperature of not less than 1550°F [845°C].
- Treat as in 6.1.3 and, at the discretion of the manufacturer, reheat to a suitable tempering temperature.

Referenced Documents

- A 370 Test Methods and Definitions for Mechanical Testing of Steel Products
- A 450/A450M Specification for General Requirements for Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes³
- E 23 Test Methods for Notched Bar Impact Testing of Metallic Materials⁵

Ordering Information

ASTM ASME A/SA334 GR.6 Seamless Tubes Orders for material under this specification should include the following, as required, to describe the material adequately:

- Quantity (feet, centimeters, or number of lengths),
- Name of material (seamless or welded pipe),
- Grade
- Size (outside diameter and minimum wall thickness),
- Length (specific or random)
- Optional requirements, (other temperatures, Section 13; hydrostatic or electric test, Section 15),
- Test report required, (Certification Section of Specification A 450/A 450M),
- Specification designation,
- Special requirements and any supplementary requirements selected.

Note:

- ♣ Mill test certificates will be issued according to EN10204.3 3.1 or 3.2

Packing:

- ♣ Packed in wooden box or bundles protected with plastic paper, and suitably protected for sea-worthy delivery or as requested.
- ♣ The Product marking shall include the ASTM A334 or ASME SA334, Grade, size, heat no., Lot No. and Manufacture name or logo.

Photos:



ASTM ASME A/SA334 GR.6 Seamless Tubes



A334 GR.6 Seamless Tube OD. Inspection



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A334 GR.6 Seamless Tubes thickness inspection



A334 GR.6 Seamless Tubes length inspection



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A334 GR.6 Seamless Tubes wooden box package

Related Tubes

Copper and Brass Tubes

- [*ASTM B111 Copper and Brass Tubes*](#)
- [*Admiralty Brass Tubes C44300*](#)
- [*Aluminum Brass Tubes C68700*](#)
- [*Copper-Nickel Tubes C70600*](#)

Titanium Alloy Tubes

- [*ASTM B338 GR.1 GR.2 GR.3 Titanium Alloy Tubes*](#)
- [*ASME SB338 GR.2 Titanium tubes*](#)

Stainless steel and Duplex

- [*ASTM A269 Stainless Steel Tubes*](#)
- [*ASTM A213 Stainless Steel Tubes*](#)
- [*ASTM A249 Stainless Steel Tubes*](#)
- [*ASTM A270 Sanitary Stainless Tubing*](#)
- [*ASTM A312 Stainless Steel Pipes*](#)
- [*ASTM A789 Duplex Stainless Tubing*](#)

Carbon steel

- [*ASTM A179 / ASME SA179 Seamless Tubes*](#)
- [*ASTM A192 / ASME SA192 Seamless boiler tubes*](#)
- [*ASTM A210 / ASME SA210 GRADE A1 Seamless tubes*](#)
- [*ASTM A210 / ASME SA210 GRADE C Seamless tubes*](#)

Alloy steel

- [*ASTM A213 T11 T12 T22 Seamless alloy tubes*](#)



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- [ASTM A 213/A 213M T2, T5, T5b, T9, T91 Seamless Alloy Steel tubes](#)
- [ASTM A335 P1, P2, P5, P9 Seamless alloy pipes](#)
- [ASTM A335 P11, P12, P22, P91 seamless alloy pipes](#)
- [ASTM A209 ASME SA209 T1 tubes](#)

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CTS TUBES provide a wide range of steel products as Steel Pipes, Seamless Tube and Seamless Pipes, Alloy Pipes, Pipe Fittings, Stainless Steel Pipe, Copper Tube and Titanium Alloy Tube used in the industry, construction etc. We are looking forward to getting in contact by phone or email and we hope that you enjoy our website. More than ten years of profound knowledge turn CTS TUBES to your partner as trading house for tubes, fittings and stainless steel. The name CTS TUBES stands for certified quality, because of that, all products of our wide range consist to demanding norms and the highest standards. CTS TUBES also stands for know-how, effective service, and best solutions for your profit. Our qualified team in our export department in China is always at your disposal and ready to help you. Get in touch if you are interested in our products or cooperation.

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