



## **ASTM A210 / A210M**

### **ASME SA210 GRADE C Seamless Tubes**

ASTM A210 / A210M, ASME SA210 / SA210M Grade C is the standard applicable to Seamless Medium-Carbon Steel Boiler and Superheater Tubes



ASTM A210 Grade C Seamless tube

**ASTM A210 / A210M** Standard covers minimum-wall thickness, seamless medium-carbon steel, boiler tubes and boiler flues, including safe ends, arch and stay tubes, and superheater tubes.

**ASTM A210 / A210M** tubing sizes and thicknesses usually furnished to this specification are 1/2 in. to 5 in. [12.7 to 127 mm] in outside diameter and 0.035 to 0.500 in. [0.9 to 12.7 mm], inclusive, in minimum wall thickness. Tubing having other dimensions may be furnished, provided such tubes comply with all other requirements of this specification.

**ASTM A210 / A210M** Mechanical property requirements do not apply to tubing smaller than 1/8 in. [3.2 mm] in inside diameter or 0.015 in. [0.4 mm] in thickness.

**ASTM A210 / A210M** Referenced Documents:

ASTM A450 / A450M Specification for General Requirements for

Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes

**Standard:** ASTM A210 / A210M, ASME SA210

**Description Name:** ASME SA210 / ASTM A210 Grade C boiler pipes; A210 Grade C pipes; A210 carbon steel tube; ASTM A210 seamless tubing; ASTM A210 carbon steel pipe; SA210 SEAMLESS PIPE; ASTM A210 cold drawn seamless steel tubes; ASTM A210 pipes and tubing; carbon steel tube; Seamless steel tube; steel tube.



**Size:** 1/2 in. to 16 in. [12.7 to 406.4mm]

**W.T.:** 1.5mm-50mm

**Shape:** Round

**Production type:** Hot finished and cold finished.

**Length:** Single random length/ Double random length or as customer's actual request max length is 25m

**Grade:** Grade C

**Heat Treatment:** Hot-finished tubes need not be heat treated. Cold-finished tubes shall be given a subcritical anneal, a full anneal, or a normalizing heat treatment after the final cold finishing process.

[View more...](#)

## Test requirement:

### ASTM A210 / A210M Grade C Chemical Compositions

Chemical Components (%)								
Grade	C	Si	Mn	P	S	Mo	Cr	V
C	≤0.35	≥0.10	0.29-1.06	≤0.035	≤0.035	/	/	/

### ASTM A210 / A210M Grade C Mechanical Tests Required

Mechanical properties				
Grade	Tensile Strength (Mpa)	Yield Strength (Mpa)	Elongation (%)	Hardness (HRB)
C	≥485	≥275	≥30	≤89

### ASTM A210 / A210M Tube Wall Thickness Tolerance

Seamless, Cold-Finished Tubes		
Outside Diameter In. (mm)	Wall thickness Tolerance %	
	Over (+)	Under (-)
1 ½ (38.1) and under	20	0
Over 1 ½ (38.1)	22	0

### ASTM A210 / A210M Tube Outside Diameter Tolerance

Cold-Finished Seamless Tubes
------------------------------



Outside Diameter In. (mm)	Permissible Variations In. (mm)	
	Over (+)	Under (-)
Under 1 (25.4)	0.004 (0.1)	0.004 (0.1)
1 to 1 1/2 (25.4 to 38.1), Incl	0.006 (0.15)	0.006 (0.15)
Over 1 1/2 to 2 [38.1 to 50.8], Excl	0.008 (0.2)	0.008 (0.2)
2 to 2 1/2 [50.8 to 63.5], Excl	0.010 (0.25)	0.010 (0.25)
2 1/2 to 3 [63.5 to 76.2], Excl	0.012 (0.3)	0.012 (0.3)

## ASTM A210 / A210M Tube Length Tolerance

Cold-Finished Seamless Tubes		
Outside Diameter, In.(mm)	Cut Length, in.(mm)	
	Over (+)	Under (-)
All Sizes	3/16 [5]	0 [0]
Under 2 [50.8]	1/8 [3]	0 [0]
2 [50.8] and over	3/16 [5]	0 [0]
Under 2 [50.8]	1/8 [3]	0 [0]
2 [50.8] and over	3/16 [5]	0 [0]
These permissible variations in length apply to tubes before bending. They apply to cut lengths up to and including 24 ft [7.3 m]. For lengths greater than 24 ft [7.3 m], the above over-tolerances shall be increased by 1/8 in. [3 mm] for each 10 ft [3 m] or fraction thereof over 24 ft or 1/2 in. [13 mm], whichever is the lesser.		

## ASTM A210 / A210M Tube Hydrostatic Test Pressures

Each tube shall be subjected to the hydrostatic pressure test, or instead of this test, a nondestructive test may be used when specified by the purchaser.

Hydrostatic Test Pressures	
Outside Diameter of Tube, in. [mm]	Hydrostatic Test Pressure, psi [MPa]
Under 1 [25.4]	1000 [7]
1 to 1 1/2 [25.4 to 38.1], excl	1500 [10]
1 1/2 to 2 [38.1 to 50.8], excl	2000 [14]
2 to 3 [50.8 to 76.2], excl	2500 [17]

## ASTM A210 / A210M Flattening Test

One flattening test shall be made on specimens from each end of one finished tube from each lot, but not the one used for the flaring test. Tears or breaks occurring at the 12 or 6 o'clock positions on Grade C tubing with sizes of 2.375 in. [60.3 mm] in outside diameter and smaller shall not be considered a basis for rejection.

## ASTM A210 / A210M Flaring Test



One flaring test shall be made on specimen from each end of the one finished tube from each lot, but not the one used for the flattening test.

## Ordering Information

Orders for ASTM A210 / A210M, ASME SA210 should include the following, as required, to describe the desired material adequately:

- Quantity (feet, meters, or number of lengths),
- Name of material (seamless tubes),
- Grade,
- Manufacture (hot-finished or cold-finished),
- Size (outside diameter and minimum wall thickness),
- Length (specific or random),
- Optional requirements,
- Test report required (see section on Certification of Specification A 450/A 450M),
- Specification designation,
- Special requirements.

## Note:

- ♣ Mill test certificates will be issued according to EN10204.3 3.1 or 3.2
- ♣ The tubes Shall be Seamless, and the testing shall be as per A 450 / A450M.

## Application:

apply to the boiler tubes; Seamless steel tube; Steel tube; Superheater tubes.

## 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 A210 or ASME SA210, size, heat no., Lot No. and Manufacture name or logo.

## Photos for ASTM A210 / A210M Grade C Tubes





## Related products

### ● Carbon steel

- [ASTM A179 / ASME SA179 Seamless tubes](#)
- [ASTM A92 / 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](#)
- [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](#)

### ● 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](#)



# CTS Tubes

*Professional Pipeline Supplier*

- **Copper and Brass**
- [ASTM B111 Copper and Brass Tubes](#)

## **Read more information of CTS TUBES main products**

- [Seamless carbon steel tubes](#)
- [Cold drawn precision steel tubes](#)
- [Seamless alloy steel tubes](#)
- [Copper alloy seamless tubes](#)
- [Titanium and titanium alloy tubes](#)
- [Stainless steel tubes](#)
- [U bent heat exchanger tubes](#)
- [Fin tubes](#)
- [Bearing steel tubes](#)



## **About CTS TUBES**

CTS TUBES provide a wide range of steel products as Steel pipes, Seamless tube and seamless pipes, Alloy pipes, 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 competent partner as trading house for carbon tubes, stainless steel tubes and Copper tubes. The name CTS TUBES stands for certified quality, because of this all products of our wide range consists to demanding norms and the highest standards. CTS TUBES also stands for know-how and effective service. Best solutions for your profit Our qualified team in our export department in China is always at your disposal and will help you. Profit by the knowledge of CTS TUBES which disposes to an intern data base. Get in Touch If you are interested in our products or cooperating



# CTS Tubes

*Professional Pipeline Supplier*



## Get in Touch

If you are interested in our products or cooperation with us, even having a comment or a suggestion, please contact us now for more detailed information.

Tel.: +86 185 5109 0083 | E-mail: [cts@ctstubes.com](mailto:cts@ctstubes.com)

----- [www.ctstubes.com](http://www.ctstubes.com) -----