

# ASTM A210

specification covers seamless medium-carbon steel boiler and super heater tubes.





Seamless medium carbon steel tubes, boiler tubes and boiler flue pipe, including in terms of security, the minimum wall thickness of the dome and the support tube, super heater tubes.

Each length of pipe shall be subjected to the thermostatic test. Also, each pipe shall be examined by a non-destructive examination method in accordance to the required practices.



## Application

For high, middle, low pressure boiler and pressure purpose

## Grade

ASTM A210 Grade A1, ASTM A210 Grade C

ASTM A210 is the standard covers seamless medium-carbon steel boiler and super heater tubes. ASTM A210 also covers minimum-wall-thickness, tubing sizes, boiler flues including safe ends, arch and stay tubes. ASTM A210 provides tensile and hardness properties but only applicable to certain size limitations. Material manufacturing shall be killed. Tubes shall be made by seamless process, marked as either hot-finished or cold-finished. Surface condition shall be specifically stated in the order.

Chemical composition shall conform to the requirements. Elemental composition other than listed here shall not be permitted. Tension test, flattening test, flaring test, hardness test, hydro-static or nondestructive electric test shall be made on specimens. Super heater tubes shall be formed without defects and shall withstand expansion, beading, forging, welding, and bending.

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## Scope

This specification covers minimum-wall-thickness, seamless medium-carbon steel, boiler tubes and boiler flues, including safe ends (see Note 1), arch and stay tubes, and superheater tubes.

Note 1—This type is not suitable for safe ending by forge welding.

The tubing sizes and thicknesses usually furnished to this specification are ½ 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.

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.

The values stated in either inch-pound units or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in non conformance with the specification.

The inch-pound units shall apply unless the “M” designation of this specification is specified in the order.

## Mechanical Properties:

Grade	C(Max)	Mn	Si(Min)	P(Max)	S(Max)
A1	0.27	Max.0.93	0.10	0.035	0.035
C	0.35	0.29~1.06	0.10	0.035	0.035

## Chemical composition:

Grade	Tensile Strength(Mpa)	Yield Strength(Mpa)	Elongation (%)
A1	≥ 415	≥ 255	≥ 30
C	≥ 485	≥ 275	≥ 30

## Available Sizes:

- O.D.: from 3/4 to 20 inch
- W.T.: 0.102 to 4inch (2.6 to 100 mm)
- Length: max 16000mm

## Marking:

Pipes are supplied with marking according to standard and customer request.

Marking is paint on the ends of pipes.

The same data, as well as additional information per customer's request, is indicated on the bundle's tags.

## Delivery:

Pipes are supplied in hexagonal bundles or round bundles tied with steel strip.

Weight of bundle – up to 5000 kg upon request of customer.

Each bundle is furnished with three tags.

## Inspection and Test:

Chemical Composition Inspection

Mechanical Properties Test (Tensile Strength, Yield Strength, Elongation, Flaring, Flattening, Bending, Hardness, Impact Test)  
Surface and Dimension Test  
No-destructive Test  
Hydrostatic Test

## Surface treatment:

Oil-dip, Varnish, passivation, phosphating, Shot Blasting.

Both ends of each crate will indicate the order no., heat no., dimensions, weight and bundles or as requested.

## U-Bend tubes

Our U-Bend Manufacturing Center allows us to increase efficiency and reduce lead times, while maintaining the world-class quality for which we are known.

Sunny steel's tubing and pipe are produced to dimensional tolerances and finish requirements of ASTM and ASME A179, A 249/SA 249, A 688/SA 688, and A 803/SA 803 specifications.

Check to see more information about U-bend pipes:



Packing



ASME SA556



Usage