



# ASTM A210 Seamless medium

carbon steel tubes

SUNNY STEEL

[www.sunnysteel.com](http://www.sunnysteel.com)

# Contents

Standard Specification  
for Seamless Medium-  
Carbon Steel Boiler and  
Superheater Tubes

1. Abstract
2. Scope
3. Grade
4. Available size
5. Marking
6. Inspection and Test
7. Delivery





# Abstract

This specification covers seamless medium-carbon steel boiler and superheater tubes. The specification also covers minimum-wall-thickness, tubing sizes, boiler flues including safe ends, arch and stay tubes. The specification 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, hydrostatic or nondestructive electric test shall be made on specimens. Superheater tubes shall be formed without defects and shall withstand expansion, beading, forging, welding, and bending.



1.1 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.

1.2 The 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.

1.3 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.

1.4 This specification covers grades A-1 and C of Seamless Medium-Carbon Boiler and Superheater Tubes with different chemical and tensile requirements. (Table 1, Table 3, and Section 11.)

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

1.6 This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

ASTM A210 also covers minimum wall thickness, tubing sizes, and boiler flues including safe ends, arch and stay tubes. ASTM A210 provides tensile and hardness properties but is only applicable to certain size limitations.

## Chemical Requirements

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

## Tensile Requirements

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

# Available Sizes



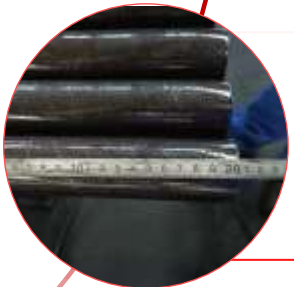
Thickness

0.102 to 4 inch(2.6 – 100mm)



Out diameter

From 3/4 to 20 inch



Length

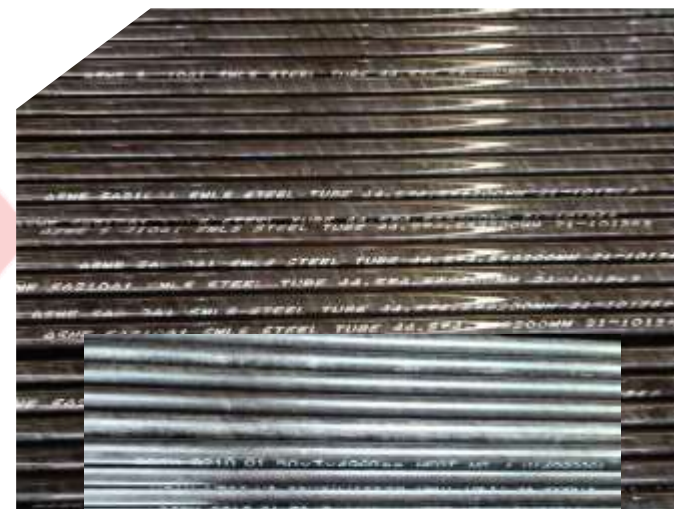
max 16000mm

# 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.

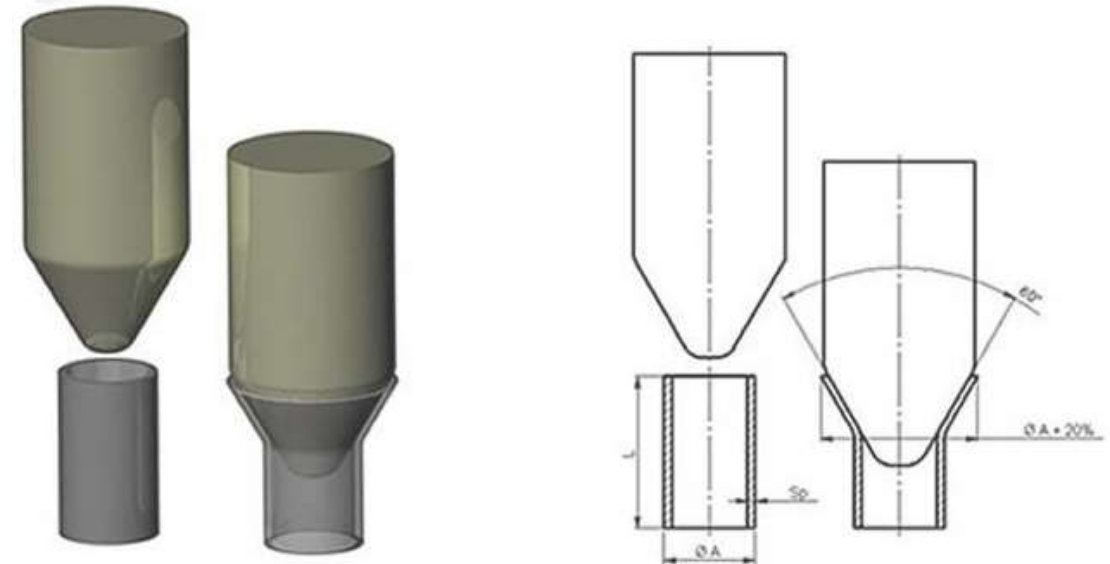
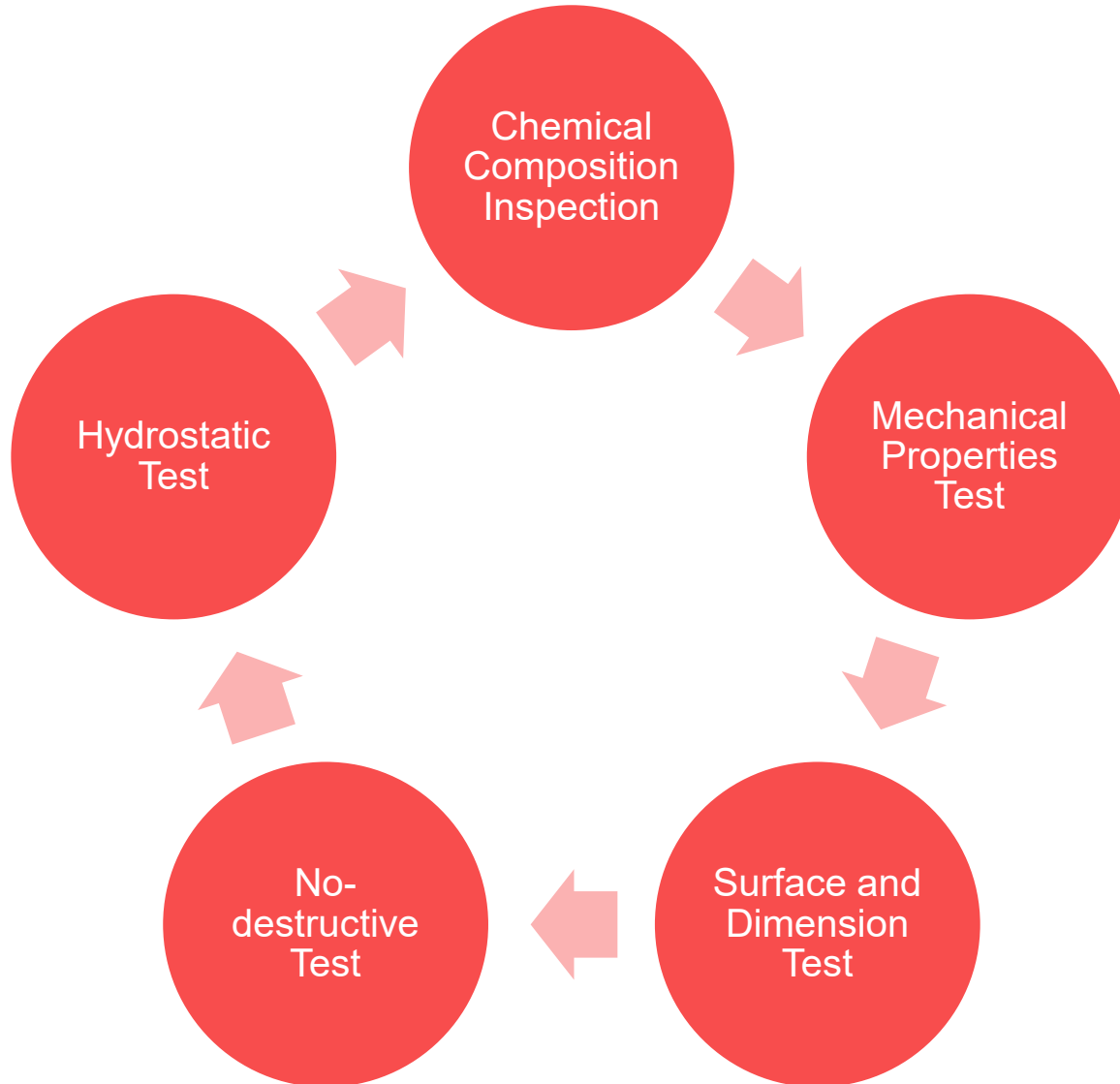




# Marking

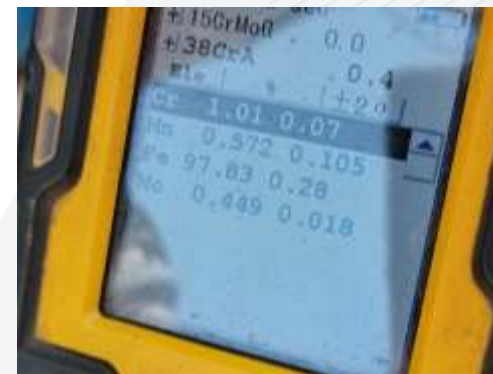


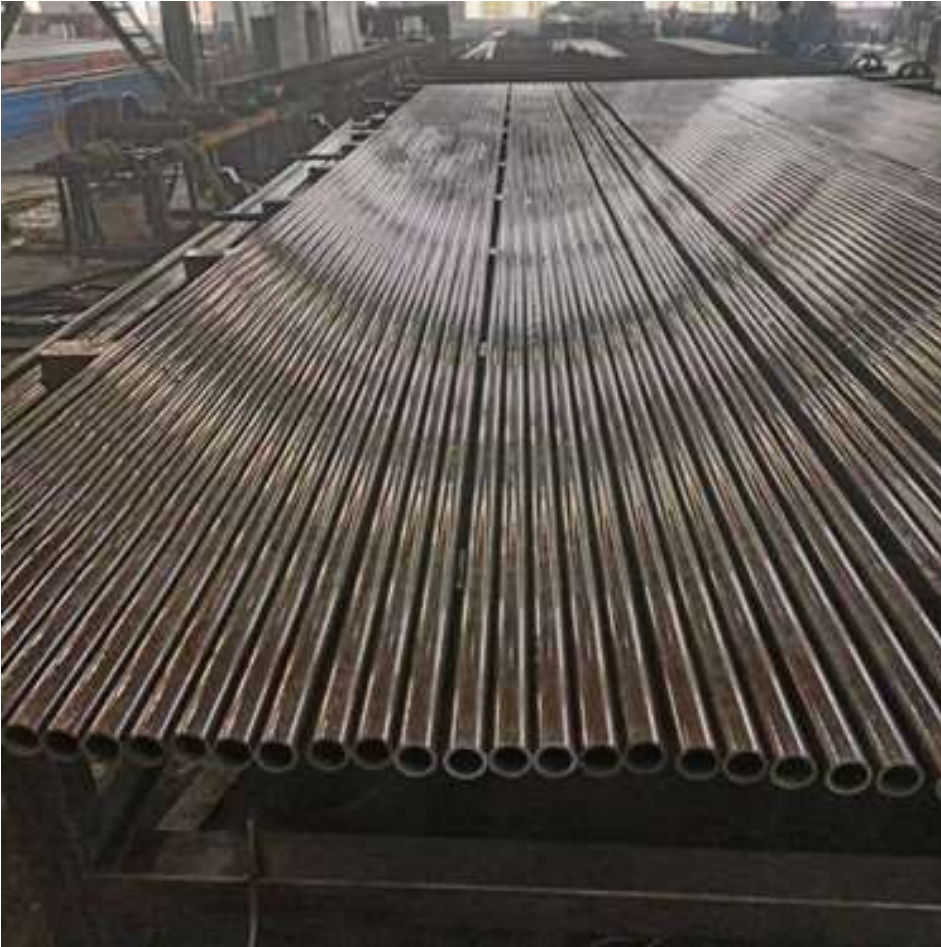




Flattening Test & Flaring Test

# PMI 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.



# 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.



## The White Glove Service You Deserve

When you partner with Sunny Steel, you can stop worrying about meeting deadlines thanks to our responsive and timely service. You'll also say goodbye to unnecessary shopping around. Instead, you'll get white glove service from an expert who understands your needs and can get you the materials you need quickly.

[www.sunnysteel.com](http://www.sunnysteel.com)



## Goal of Sunny Steel

Our team is committed to protecting the environment, saving energy and reducing emissions.

Protecting the environment is the company's duty.

Customer satisfaction has always been our top priority, and we adhere to the principle of providing customers with value-added solutions, not just products.

To be one of the world recognized manufacturer of technical abrasion resistant product and its allied product to assist society to fight against wear, corrosion, thermal, electrical and other critical requirement. The most valuable possession we own is our reputation for quality and service.

## Get in touch

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

Tel.: +86-21-3378-0199 | E-mail: [sales@sunnysteel.com](mailto:sales@sunnysteel.com)

