



A213 T91

sales@sunnysteel.com

SA213-T9 / ASTM A213 / UNS K90901

Alloy Steel Seamless Boiler Tube

SA213-T91 is a seamless ferritic and austenitic alloy steel boiler tube used in superheaters, and heat exchangers.

The ASTM A213 T91 Tubes are primarily used for boiler, superheater, and heat-exchanger. It is also an 9Cr-1Mo-V alloy steel with UNS designation K90901. Compared to its equivalent ASTM A335 P91, the chemical composition requirement of T91 steel is slightly different.

Grade T91 is a new ferritic alloy heat resistant steel developed based on grade T9 steel through the process of pure purification, fine crystallization metallurgy, microalloying and controlled rolling. The steel has good comprehensive mechanical properties, good welding properties and good process properties, suitable for high-temperature compression parts of the material.

WIHO metals is a leading seamless steel tube supplier and manufacturer, we supply ASTM A213 Grade T91 and ASME SA T91 alloy steel pipe and their equivalent material for boiler systems in various sizes and specifications.

We are one of the leading Manufacturers, Supplier and Exporters of high quality ASTM

A213 T91 Alloy Steel Seamless Tube. These tubes are widely used in various application industry such as Oil & Gas, Power, Fertilizers, Heat-Exchangers, Paper & Pulp, pharmaceuticals, Chemicals, Water Treatment, Dairy etc.

ASTM A213 T91 and ASTM A335 P91

Grade T91 specified in ASTM A213 which do Ferrite and Austenitic boiler superheater and heat exchanger seamless steel tube while grade P91 specified in ASTM A335 do Ferritic and alloy seamless steel tube intended for high-temperature service. Grade T91 and P91 steel pipes have a similar chemical composition and mechanical properties. As for their difference, we can say that they have been substituted for another one when the same purpose.

Chemical Properties

Carbon:0.07% - 0.14%	Silicon: 0.20% - 0.50%
Manganese: 0.30% - 0.60%	Nickle Max: 0.40%
Phosphorus Max: 0.020%	Chromium: 8.0% - 9.5%
Sulfur Max: 0.010%	Molybdenum: 0.85% - 1.05%
Vanadium: 0.18% - 0.25%	Niobium: 0.06% - 0.10%
Nitrogen: 0.030% - 0.070%	Aluminum Max: 0.02%
Titanium Max: 0.01%	Zirconium Max: 0.01%

Mechanical Properties

Tensile Strength:	ksi: 60 MPa: 415
Yield:	ksi: 30 MPa: 205

Hardness

Rockwell B:	85 HRB Max.
Brinell:	163 HB Max.
Vickers:	170 HV Max.

Elongation in 2in. or 50mm, min. %: 30

SA213 T91 is a P15E Material

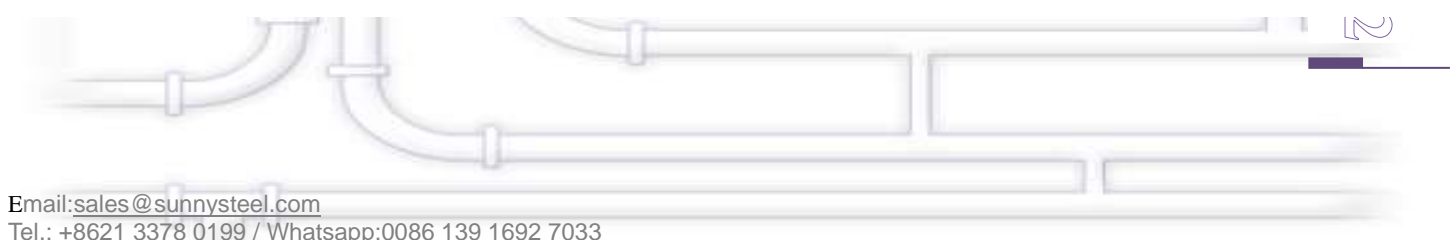
ASTM A213 T91 Tubing Equivalent Material

ASTM	DIN	JIS	GB
P91	X10CrMoVNNb91	STBA 26	10Cr9Mo1VNbN

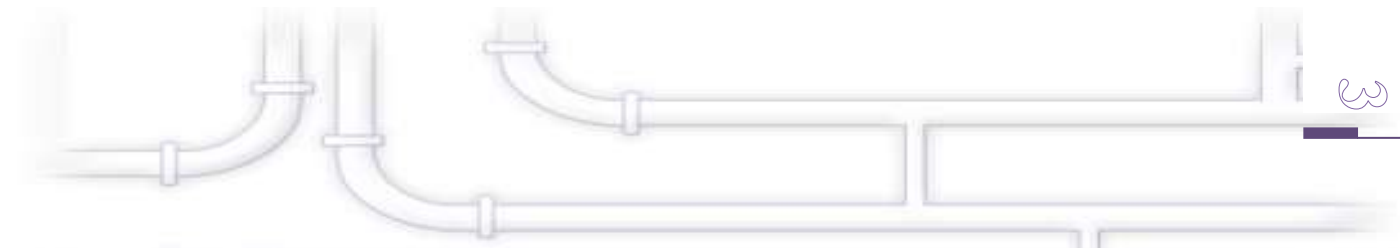
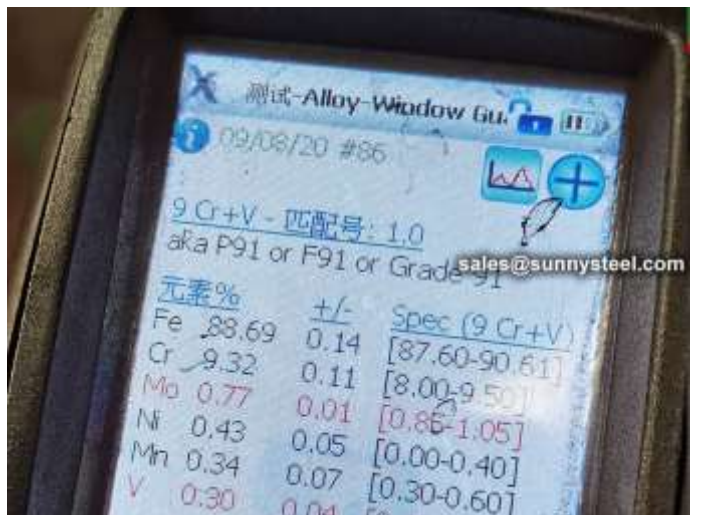
ASTM A209 Through A213

- Other standard specifications include the categories of A209 seamless carbon-molybdenum alloy-steel boiler and superheater tubes;
- A210 seamless medium-carbon steel boiler and superheater tubes and A213 seamless ferritic and austenitic steel boiler, superheater and heat-exchanger tubes.
- Piping wall thicknesses range from 1/2 inch to 5 inches.
- A213 grades also have the letter H or M assigned, which changes the composition and specifications for that series.

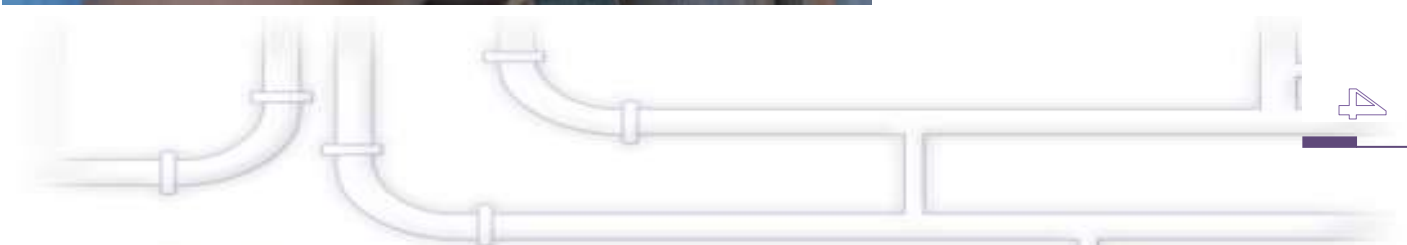
This abstract is a brief summary of the referenced standard. It is informational only and not an official part of the standard; the full text of the standard itself must be referred to for its use and application.



PMI testing



Mark



Size measurement:





Packing:



ASTM A213 tube bend

