

## Seamless Ferritic and Austenitic Alloy Steel Tubes for Boiler, Superheater and Heat Exchanger

### Standard & Material

ASTM A213/A213M ASME SA213 T5

It covers seamless ferritic and austenitic steel tubes for boiler, superheater and heat exchanger. The tubing sizes and thicknesses are 1/8 inch [3.2mm] in inside diameter to 5 inch [127mm] in outside diameter and 0.015 to 0.500 inch [0.40 to 12.7mm], inclusive, in minimum wall thickness or, if specified in the order, average wall thickness. Tubing having other diameters may be furnished, provided such tubes comply with all other requirements of ASTM A213/A213M ASME SA213.

### Chemistry Composition

C, % 0.15 max

Mn, % 0.30-0.60

P, % 0.025 max

S, % 0.025 max

Si, % 0.50 max

Cr, % 4.00-6.00

Mo, % 0.45-0.65

### Mechanical Properties

Tensile Strength, MPa 415 min

Yield Strength, MPa 205 min

Elongation, % 30 min

Hardness, HB 163 or HRB 85 max

Wall Thickness: min wall thickness or average wall thickness

Developed Length: max 30 meters each length, +10mm/-0mm

Manufacture: the tubes made by cold finished or hot finished process.

Heat Treatment: the tubes are heat treated by full or isothermal annealing, normalizing and tempering at a temperature of 675°C or higher.

Inspection & Test: chemistry composition analysis, tensile test, flattening test, flaring test, hardness test, NDT, surface inspection and dimension check.

Further Process: U bending tubes, fin tubes, studded tubes

