## PRODUCT MANUAL



Seamless Ferritic Alloy Steel Pipe for High Temperature Service

## Standard & Material

ASTM A335/A335M ASME SA335 P12

It covers nominal wall and minimum wall seamless ferritic alloy steel pipe intended for high temperature service. Pipe ordered to ASTM A335/A335M shall be suitable for bending, flanging (vanstoning), and similar forming operations, and for fusion welding. Selection will depend upon design, service conditions, mechanical properties, and high temperature characteristics.

## **Chemistry Composition**

C, % 0.05-0.15

Mn, % 0.30-0.61

P, % 0.025 max

S, % 0.025 max

Si, % 0.50 max

Cr, % 0.80-1.25

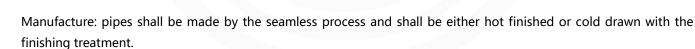
Mo, % 0.44-0.65

## **Mechanical Properties**

Tensile Strength, MPa 415 min Yield Strength, MPa 220 min Elongation, % 30 min

Wall Thickness: min wall thickness or average wall thickness

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



Heat Treatment: the tubes are heat treated by full or isothermal anneal, normalize and temper at a temperature of 650°C or higher.

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

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

