

## Seamless Ferritic Alloy Steel Pipe for High Temperature Service

### Standard & Material

ASTM A335/A335M ASME SA335 P5

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, % 0.15 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

Wall Thickness: min wall thickness or average wall thickness

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

Manufacture: pipes shall be made by the seamless process and shall be either hot finished or cold drawn with the finishing treatment.

Heat Treatment: the tubes are heat treated by full or isothermal anneal, normalize and temper at a temperature of 675°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

