

SA 105 ASME SA105 (USA)

Standards

ASME SA105

Carbon Steel Forgings for Piping Applications

Chemical composition

C	< 0.35	Si	0.10 - 0.35	Mn	0.60 - 1.05	P	< 0.035
S	< 0.04	Cr	< 0.3	Mo	< 0.12	Ni	< 0.4
V	< 0.06	Cu	< 0.4	Fe	Rest	CE	< 0.48

$Cu + Ni + Cr + Mo < 1.00\%$

$CE = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15$

$Cr + Mo < 0.32$

section thickness < 2in: $CE < 0.47$

In addition to the marking required by Section 13, this specification shall be followed by the letter: A for annealed, N for normalized, NT for normalized and tempered, or QT for quenched and tempered, as appropriate.

Properties

By ASTM A105

Yield Strength: > 250 MPa

Tensile Strength: > 485 MPa

Elongation: > 22 %

Hardness HB: < 187

Reduction of area: > 30 %

Weldability

By ISO 15608

Group: 11.1

ASME Section IX

Welding

P-Number: 1

Group: 2

Brazing

P-Number: 101

Operational characteristics

Application temperature: < 425 °C

Calculated properties

Density: 7.85 g/cm³