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**
- By ISO/TR 20173
  - By ASME/AWS
    - **P-Number: 1**
    - **Group: 2**
  - By ISO 15608
    - **Group: 11.1**

SA 105 ASME SA105 (USA)

Operational characteristics

Application temperature: < 425 °C

Calculated properties

Density: 7.85 g/cm3