ASTM A815 UNS S32750 Specification

Product: Wrought Pipe Fittings
Material Grade: Super Duplex Stainless Steel – **UNS S32750 (also known as 2507)**
Standard Specification: ASTM A815 (ASME SA815 for pressure applications)
Fitting Type: Seamless (WPS) or Welded (WPW, WPU, etc.)

General Description

ASTM A815 is the standard specification for **wrought ferritic, austenitic, and duplex stainless steel pipe fittings** intended for pressure piping applications. **UNS S32750** (Super Duplex 2507) is a high-alloy duplex stainless steel known for:

- Excellent **pitting and crevice corrosion resistance**
- High **yield strength** and **toughness**
- Superior resistance to **chloride stress corrosion cracking**

Chemical Composition (UNS S32750 / 2507)

Element	Content (%)
Chromium (Cr)	24.0 – 26.0
Nickel (Ni)	6.0 – 8.0
Molybdenum (Mo)	3.0 – 5.0
Nitrogen (N)	0.24 – 0.32
Carbon (C)	≤ 0.030
Manganese (Mn)	≤ 1.20
Silicon (Si)	≤ 0.80
Phosphorus (P)	≤ 0.035
Sulfur (S)	≤ 0.020
Iron (Fe)	Balance

Mechanical Properties (Minimum Values)

Property	Value
Tensile Strength	≥ 795 MPa (115 ksi)
Yield Strength (0.2%)	≥ 550 MPa (80 ksi)
Elongation	≥ 15%
Hardness	≤ 32 HRC
Impact Toughness	High (Charpy ≥ 74 J @ -46° C typical)

Heat Treatment

Process	Requirement
Type	Solution Annealing
Temperature	1020 – 1120° C (1868 – 2048° F)
Cooling	Rapid water or air quench
Purpose	Restore duplex structure and corrosion resistance

Size Range for Fittings

Type	NPS Range
Elbows, Tees, Reducers	½″ – 48″ (Standard/Fabricated)
Wall Thickness	SCH 10S to XXS / Custom

Standards & Compliance

- ASTM A815 / ASME SA815
- ASME B16.9, B16.11, MSS-SP-43
- NACE MR0175 / ISO 15156 (Sour Service)
- EN 10253, PED 2014/68/EU

Applications

- Offshore and subsea piping systems
- Desalination and seawater systems
- Petrochemical and chemical processing
- Heat exchangers and pressure vessels
- Oil & gas (including sour service)