

1.4462 Duplex Stainless Steel Technical Specification

Standard Designation:

- **EN Name:** X2CrNiMoN22-5-3
- **EN Number:** 1.4462
- **UNS Number:** S32205 / S31803
- **Common Name:** Duplex 2205

1.4462 Chemical Composition (Typical, %)

Element	Min	Max
C	-	0.03
Si	-	1.00
Mn	-	2.00
P	-	0.035
S	-	0.015
Cr	21.0	23.0
Ni	4.5	6.5
Mo	2.5	3.5
N	0.08	0.20
Fe	Balance	-

Mechanical Properties (at room temperature)

Property	Value
Tensile Strength (Rm)	620 - 880 MPa
Yield Strength (Rp0.2)	≥ 450 MPa
Elongation (A5)	≥ 25 %
Hardness (Brinell)	≤ 290 HB
Impact Toughness (KV)	≥ 100 J at -46° C

Physical Properties

Property	Value
Density	7.8 g/cm ³
Modulus of Elasticity	~ 200 GPa
Thermal Conductivity	19 W/m • K
Electrical Resistivity	0.85 μ Ω • m
Thermal Expansion (20 - 100° C)	13.0 × 10 ⁻⁶ /K

Key Features

- **Duplex microstructure:** ~50% ferrite, ~50% austenite
- **Excellent corrosion resistance,** especially to chloride pitting and crevice corrosion
- **High strength:** ~2x stronger than 304/316 stainless steel
- **Good weldability** with proper filler metals (e.g., ER2209)
- **Service temperature:** -50° C to +250° C (prolonged use above 300° C not recommended)



1. 4462 Product Range

Material Name: EN 1.4462 | UNS S31803 / S32205 | Duplex Stainless Steel | X2CrNiMoN22-5-3

Standards: EN 10088, EN 10222-5, ASTM A182 F51 / F60 / F61, ASTM A240

1. Forged Flanges

Manufactured to EN 1092-1, ASME B16.5, ASME B16.47, GOST, DIN, JIS standards:

- Weld Neck Flanges (WNRF)
- Slip-On Flanges (SOFF)
- Blind Flanges (BLRF)
- Threaded Flanges (THRF)
- Socket Weld Flanges (SWRF)
- Lap Joint Flanges (LJ)
- Orifice Flanges
- Spectacle Blinds
- Reducing Flanges

2. Forged Fittings (ASME B16.11)

- Socket Weld Elbows, Tees, Couplings, Caps
- Threaded Elbows, Tees, Couplings, Plugs