



SPECIFICATIONS

European standards:

- X2CrNiMo17-12-2
- Numerical designation: 1.4404

UNS: S31603

MECHANICAL PROPERTIES

- In the solution treated condition:
 - UTS: 550 N/mm²
 - 0.2 % Yield strength: 200N/mm²
 - Elongation (5d): 60 %
 - Impact strength KCU: 200 J/cm²

COMPOSITION

Carbon	< 0.03
Chromium	17.00
Nickel	12.00
Molybdenum	2.50

APPLICATIONS

- Industries: nuclear, aerospace industry, oil, pharmaceutical, chemical and food industries.
- Mechanical and marine assemblies.

CHARACTERISTICS

- Low carbon austenitic stainless steel.
- Properties similar to that of grade X18BC.
- Adding molybdenum improves corrosion resistance in some highly active corrosive media eg:
 - highly concentrated acetic acid at high temperatures.
 - sulphuric acid at certain concentrations at cold temperatures.
 - phosphoric acid in any concentration at cold temperatures.
 - alkaline solutions in any concentration at temperatures below 100 °C.
 - some saline solutions etc.

HEAT TREATMENT

- Solution treatment:
 - Heat to 1050/1100 °C.
 - Water or air quench depending on the section of the parts.

PHYSICAL PROPERTIES

- Density: 7.9
- Specific heat in J/g.°C: 0.50
- Mean coefficient of expansion in m/m.°C:
 - between 20 °C and 200 °C: 16.8×10^{-6}
 - between 20 °C and 400 °C: 17.7×10^{-6}
 - between 20 °C and 500 °C: 18.5×10^{-6}
- Melting point: 1425 °C approx.
- Electrical resistivity in $\mu\Omega \cdot \text{cm}^2/\text{cm}$:
 - at 20 °C: 76
- Modulus of elasticity in N/mm²:
 - at 20 °C: 203×10^9
- Absolute magnetic permeability in H/m: 1.26×10^{-6}
- Thermal conductivity in W.m/m².°C:
 - at 100 °C: 16
 - at 400 °C: 21
 - at 800 °C: 27

FORGING

- 1100/900 °C

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