AUBERT&DUVAL

Steel

X18PA

X6CrNiTi18-10

SPECIFICATIONS

European Standards:

- X6CrNiTi18-10, X8CrNiTi18-10
- Numerical designation: 1.4541, 1.4878

AIR	:	Z 10 CNT 18-11
WL	:	1.4511
BS	:	S 129
UNS	:	S32100

COMPOSITION

Carbon.....	<0.08
Chromium.....	18.00
Nickel.....	11.00
Titanium.....	>5xC

TYPICAL MECHANICAL PROPERTIES

- In the solution treated condition:
  - UTS: 600 N/mm^2
  - 0.2 % Yield strength: 220 N/mm^2
  - Elongation (5d): 50 %
  - Impact strength KCU: 190 J/cm^2

APPLICATIONS

- Industries: aerospace, chemical, electrical, marine, nuclear, oil industries.
- Various mechanical parts.

CHARACTERISTICS

- Titanium stabilised austenitic stainless steel.
- Good resistance to intercrystalline corrosion.
- Good resistance to high temperature oxidation up to 800°C.
- Good weldability.

HEAT TREATMENT

- Solution treatment:
  - Heat to 1050 / 1150°C.
  - Water cool.

PHYSICAL PROPERTIES

- Density:
  - at 20°C: 7.9
- Mean coefficient of expansion in m/m.°C:
  - between 20°C and 200°C: 17.3×10^{-6}
  - between 20°C and 400°C: 18.1×10^{-6}
  - between 20°C and 600°C: 18.9×10^{-6}
- Modulus of elasticity in N/mm^2:
  - at 20°C: 198×10^3
- Thermal conductivity in $W.m/m^2.°C$:
  - at 100°C: 16
  - at 400°C: 20
  - at 800°C: 25
- Specific heat in J/g.°C: 0.50
- Melting point: 1425°C approx.
- Electrical resistivity in $\mu\Omega.cm^2/cm$:
  - at 20°C: 72
  - at 400°C: 99
  - at 800°C: 120
- Absolute magnetic permeability in H/m: 1.26×10^{-6}

FORGING

- 1150/950°C

Contact:

www.aubertduval.com