AUBERT&DUVAL

Steel
X13D
X20Cr13

SPECIFICATIONS

European standards:
- X20Cr13
- Numerical designation: 1.4021

WL : 1.4014
BS : S62
UNS : S42000

COMPOSITION

Carbon.....	0.30
Chromium.....	13.00

APPLICATIONS

- Blades turbines.
- Various mechanical parts.

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: heat to 850°C followed by slow cooling:
  - Brinell Hardness: 180

- Oil quench from 950/1000°C. Temper at 250°C:
  - UTS: 1450 N/mm^2
  - 0.2 % Yield strength: 1150 N/mm^2
  - Elongation (5d): 13 %
  - Impact strength KCU: 50 J/cm^2

HEAT TREATMENT REFERENCE

- Oil quench from 950/1000°C. Temper at 600 °C.
  - UTS: 900 N/mm^2
  - 0.2 % Yield strength: 750 N/mm^2
  - Elongation (5d): 17 %
  - Impact strength KCU: 80 J/cm^2

CHARACTERISTICS

- Martensitic stainless steel.
- Good resistance to the corrosive effect of fresh water and various corrosion agents.
- Good resistance to steam erosion up to 525°C.

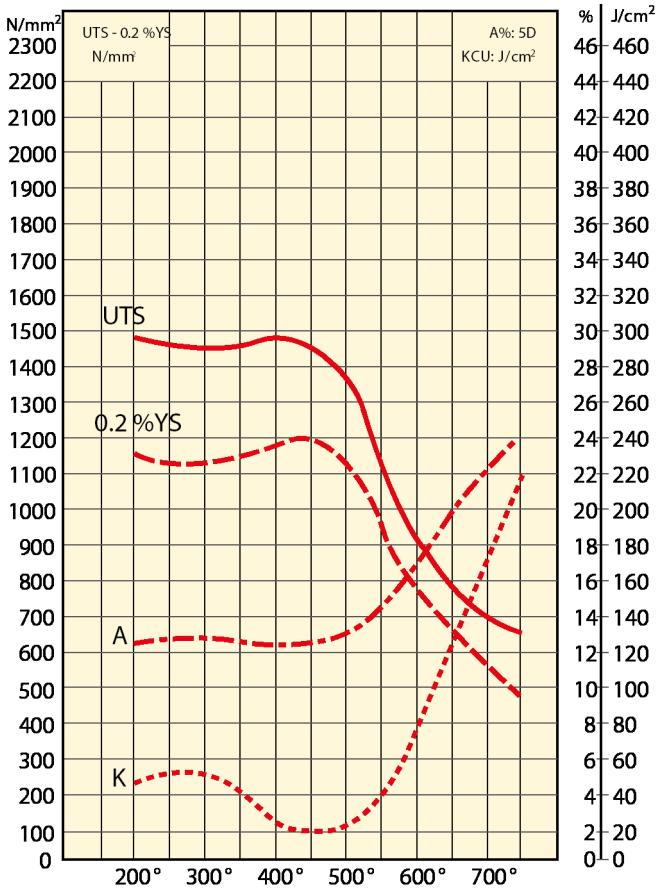
PHYSICAL PROPERTIES

- Density: 7.7
- Mean coefficient of expansion in m/m.°C:
  - between 20°C and 100°C: 10.8 x 10^{-6}
  - between 20°C and 300°C: 11.4 x 10^{-6}
  - between 20°C and 500°C: 12.0 x 10^{-6}
- Critical points:
  - Ac 1: 805°C
  - Ac 3: 930°C

FORGING

- 1100/900°C

TEMPERING CURVE



Heated to 950/1000°C, oil quenched.

(Heat treatment on rough machined blanks)

Contact:

www.aubertduval.com