

Melting: Consumable electrode remelted steel

SPECIFICATIONS

European Standards:

- X8CrCoNiMo10-6
- Numerical designation: 1.4911

AIR : Z10CKD10

WL: 1.4911

BS: S152

COMPOSITION

Carbon.....	0.10
Chromium.....	10.50
Cobalt.....	6.00
Molybdenum.....	0.80
Niobium.....	0.50
Vanadium.....	0.30

TYPICAL MECHANICAL PROPERTIES

HEAT TREATMENT REFERENCE

- Oil quench from 1170°C.
Two successive temper at 615°C:
- Tensile test at ambient temperature:
 - UTS: 1100 N/mm²
 - 0.2 % Yield strength: 950 N/mm²
 - Elongation (5d): 14 %

- Creep :

Temperature (°C)	Load in N/mm ² causing creep fracture in:		Load in N/mm ² causing a 1% elongation in	
	100 hrs	1000 hrs	100 hrs	1000 hrs
550	500	460	480	430
600	390	320	370	280

APPLICATIONS

- Aerospace and energy industry: turbine parts, compressor parts and various parts

CHARACTERISTICS

- Good creep resistance.

HEAT TREATMENT

- Harden:
 - Heat to 1170°C.
 - Oil quench.
- Temper:
 - two successive tempers at 615°C.

PHYSICAL PROPERTIES

- Density: 7,8
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 100°C: 9.5×10^{-6}
 - between 20°C and 300°C: 10.3×10^{-6}
 - between 20°C and 500°C: 11.0×10^{-6}
 - between 20°C and 700°C: 11.8×10^{-6}
- Critical points:
 - Ac 1: 740°C
 - Ac 3: 865°C

FORGING

- 1150/950°C

Contact:

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The data provided in this document represent typical or average values rather than maximum or minimum guaranteed values. The applications indicated for the grades described are given as guidance only in order to help the reader in his personal assessment. Please note that these do not constitute a guarantee whether implicit or explicit as to whether the grade selected is suited to specific requirements. Aubert & Duval's liability shall not under any circumstances extend to product selection or to the consequences of that selection.