

SPECIFICATIONS

European designation: X6NiCrTiMoVB25-15-2

AIR : E-Z 6 NCT 25
 WL : 1.4944
 BS : HR 51, HR 650
 UNS : S66286
 AMS : 5731 - 5732 - 5734 - 5737 - 5853

COMPOSITION

Carbon.....	0.05
Nickel.....	26.00
Chromium.....	15.00
Titanium.....	2.00
Molybdenum.....	1.25
Vanadium.....	0.25

TYPICAL MECHANICAL PROPERTIES

After solution treatment and aging:

- Tensile test at ambient temperature:
 - UTS: 1000 N/mm²
 - 0.2 % Yield strength: 650 N/mm²
 - Elongation (5d): 25 %
 - Impact strength KCU: 80 J/cm²

Rapid tensile test at temperature:

- at 200°C:
 - UTS: 950 N/mm²
 - 0.2 % Yield strength: 600 N/mm²
 - Elongation (5d): 20 %
- at 400°C:
 - UTS: 900 N/mm²
 - 0.2 % Yield strength: 550 N/mm²
 - Elongation (5d): 18 %
- at 600°C:
 - UTS: 850 N/mm²
 - 0.2 % Yield strength: 520 N/mm²
 - Elongation (5d): 18 %
- at 700°C:
 - UTS: 600 N/mm²
 - 0.2 % Yield strength: 500 N/mm²
 - Elongation (5d): 10 %
- at 800°C:
 - UTS: 300 N/mm²
 - 0.2 % Yield strength: 200 N/mm²
 - Elongation (5d): 45 %

APPLICATIONS

- Gas and steam turbine discs and blades.
- Fasteners for high temperature environments.
- Parts working under high stresses at temperature.
- For manufacture of welded parts, use our XN26AW grade.

CHARACTERISTICS

- Consumable electrode remelted austenitic stainless steel.
- Excellent resistance to high temperature oxidation up to 900/950°C.
- Good mechanical properties up to 650/700°C.

HEAT TREATMENT

- Solution treatment:
 - Heat to 980°C.
 - Air cool or oil quench depending on the size of the parts.
- Aging:
 - Heat to 720°C.
 - 16 hours at temperature.
 - Air cool.

PHYSICAL PROPERTIES

- Density: 7.9
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 200°C: 16.7×10^{-6}
 - between 20°C and 400°C: 17.2×10^{-6}
 - between 20°C and 600°C: 17.8×10^{-6}
 - between 20°C and 800°C: 19.1×10^{-6}
- Modulus of elasticity in N/mm²:
 - at 20°C: 201×10^3
- Thermal conductivity in W.m/m².°C:
 - at 20°C: 13
- Specific heat in J/g.°C:
 - at 20°C: 0.50
- Electrical resistivity in $\mu\Omega \cdot \text{cm}^2/\text{cm}$:
 - at 20°C: 91
- Absolute magnetic permeability in H/m:
(in-service heat treated condition) 1.26×10^{-6}

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.