

Variant:

X17U4W: Consumable electrode remelted steel

SPECIFICATIONS

European standards:

- X5CrNiCuNb16-4
- Numerical designation: 1.4542

UNS : S17400

AMS : 5643

- For the remelted grade:

WL : 1.4548

UNS : S17400

AMS : 5622

TYPICAL MECHANICAL PROPERTIES

After solution treatment and aging.

- Harden for 4 hrs at 550°C followed by air cooling.
 - UTS: 1070 N/mm²
 - 0.2 % Yield strength: 1000 N/mm²
 - Elongation (5d): 10 %
 - Impact strength KV: 120 J

HEAT TREATMENT REFERENCE

- Harden for 4 hrs at 620°C followed by air cooling
 - UTS: 950 N/mm²
 - 0.2 % Yield strength: 750 N/mm²
 - Elongation (5d): 16 %
 - Impact strength KV: 140 J

COMPOSITION

Carbon.....	< 0.07
Chromium.....	16.50
Nickel.....	4.00
Copper.....	4.00
Niobium + Tantalum.....	0.35

APPLICATIONS

- Forgings and mechanical parts in stainless steel requiring very good mechanical properties and an acceptable coefficient of friction.

CHARACTERISTICS

- Precipitation hardened martensitic stainless steel.
- Good resistance to various corrosive agents.
- Good weldability.

HEAT TREATMENT

- Delivered condition:
 - We supply this steel either in the "solution treated" or in the "solution treated and aged" condition.
- Aging
 - After solution treatment this steel must undergo precipitation hardening (or "aging") in order to achieve its mechanical properties.
- The two most common aging treatments are:
 - 4 hours at 550°C for UTS: 1070 N/mm².
 - 4 hours at 620°C for UTS: 950 N/mm².
- Other strength levels can be achieved. The highest level corresponds to aging for 1 hr at 480°C for UTS: 1300 N/mm² approx. At this ultimate level of resistance, there is a risk of stress corrosion in service.

PHYSICAL PROPERTIES

- | | | | |
|--|-------------------------|---|------|
| • Density: | 7.8 | • Thermal conductivity in W.m/m ² .°C: | |
| | | - at 20°C: | 16 |
| • Mean coefficient of expansion in m/m.°C: | | • Specific heat in J/g.°C: | |
| - between 20°C and 200°C: | 10.4 x 10 ⁻⁶ | - at 20°C: | 0.46 |
| - between 20°C and 400°C: | 11.1 x 10 ⁻⁶ | | |
| - between 20°C and 600°C: | 11.7 x 10 ⁻⁶ | • Electrical resistivity in μΩ.cm ² /cm: | |
| • Modulus of elasticity in N/mm ² : | | - at 20°C: | 80 |
| - at 20°C: | 200 x 10 ³ | | |

Contact:

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