



Steel **APXV** X17CrNi16-2

APXVW : Consumable electrode remelted version

SPECIFICATIONS

EN : X17CrNi16-2 / X22CrNi17
 AFNOR : X17CrNi16-2
 (former Z15CN16-2)
 W.Nr : 1.4057 / 1.2787
 AISI : 431
 SUS : 431

PROPERTIES

- Heat to 680°C. Air cool. In the softened condition, Brinell hardness approximately 250.
- Oil quench 1020°C. Temper at 380°C.
 - UTS: 1400 N/mm²
 - 0,2 % Yield stress: 1150 N/mm²
 - Elongation (5d): 12 %.
- Oil quench from 1020°C. Temper at 600°C.
 - UTS: 1000 N/mm²
 - 0,2 % Yield stress: 810 N/mm²
 - Elongation (5d): 15 %.
- The mechanical properties at temperature for the 1000 N/mm² heat treatment are given below.

Temperature in °C	UTS (N/mm ²)	Yield stress 0,2 % (N/mm ²)
20	1000	810
200	880	750
300	810	680
400	725	625
500	645	535

COMPOSITION

Carbon0.18
 Chromium16.50
 Nickel1.80

APPLICATIONS

- Glass industry :
 manufacturing of pressing die moulds, blowing moulds and section rolls.
- Plastics processing industry and rubber working.
- Casting parts can be produced from the **APXVF** grade, casting grade version.

QUALITIES

- Martensitic stainless steel, possessing corrosion resistance between the 13 % chromium and the 18/8 steels.
- Highly resistant to organic acids and certain mineral acids, as well as to chloride-polluted media.
- Good mechanical properties and resistance to hot oxidation.
- Good machineability in all normal toolmaking processes (turning, ECM, EDM).
- Able to take a high polish.
- Magnetic.

HEAT TREATMENT

- Hardening:
 - Heat to 1020°C.
 - Oil quench is preferable, but it is possible to gas pressure quench depending on the section.

Heating in an inert atmosphere is recommended.

- Tempering:
 - According to properties required.

PHYSICAL PROPERTIES

- Density: 7,7
- Mean coefficient of expansion in m/m. °C:
 - between 20°C and 100° : 10,5 x 10⁻⁶
 - between 20°C and 300°C: 11,2 x 10⁻⁶
 - between 20°C and 500°C: 11,8 x 10⁻⁶
- Modulus of elasticity in N/mm²:
 - to 20°C: 211 x 10³
- Thermal conductivity in W.m/m². °C:
 - to 20°C: 20,00
 - to 500°C: 25,00
- Specific heat in J/g. °C : 0,48

FORGING

- 1100/900°C

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