



Variant:

CX13VDW: Consumable electrode remelted grade

SPECIFICATIONS

X12CrNiMoV12-3
UNS: S64152
WL: 1.4933
AMS: 5719

MECHANICAL PROPERTIES

- Annealed condition: heat to 680°C followed by slow cooling.
 - Brinell Hardness: 255
- Oil quench from 1050°C. Sub-zero -70°C. Temper at 250°C. (Properties beneath the carburized layer)
 - UTS: 1350 N/mm²
 - 0.2 % Yield strength: 1000 N/mm²
 - Elongation (5d): 13 %
 - Impact strength KV: 130 J
 - Toughness K1c: 130 MPa√m
- Air cool from 1050°C. Temper at 650°C.
 - UTS: 1050 N/mm²
 - 0.2 % Yield strength: 700 N/mm²
 - Elongation (5d): 15 %
 - Impact strength KV: 140 J

COMPOSITION

Carbon	0.12
Chromium	12.00
Nickel	2.50
Molybdenum.....	1.60
Vanadium	0.30

APPLICATIONS

CX13VD(W) is a carburizing stainless steel. It is used in the aerospace industry and industrial applications for:

- Ball screws
- Blade propellers
- Gears, etc.

CHARACTERISTICS

- Optimized composition and thermomechanical treatment to ensure carburizing process.
- Gas quenching possible for reduced distortions.
- After carburizing, quenching and tempering, the surface hardness is around 730 HV.
- Good toughness of the carburized layer.
- High level of hardenability.
- Good mechanical properties.

HEAT TREATMENT

- Carburizing:
 - approximately: 940°C.
- Harden:
 - Heat to 1050°C.
 - Oil, air or gas quench.
- Temper:
 - After carburizing and hardening, the steel is tempered between 200°C and 300°C.
 - For use in the non carburized heat treated condition, temper in accordance with properties required.

PHYSICAL PROPERTIES

- Density: 7.8
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 100°C: 11.8×10^{-6}
 - between 20°C and 700°C: 14.1×10^{-6}
- Critical points:
 - Ac 1: 690°C
 - Ac 3: 795°C

FORGING

- 1100/900°C

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