

Variant:

FNDW : Consumable electrode remelted steel

SPECIFICATIONS

15NiMoSiCr10

UNS : K51570

AMS : 6494

For the remelted grade:

UNS : K51570

AMS : 6495

TYPICAL MECHANICAL PROPERTIES

(Properties beneath the carburized layer)

HEAT TREATMENT REFERENCE

- Oil quench from 960°C. Sub-zero -70°C. Temper at 300°C:

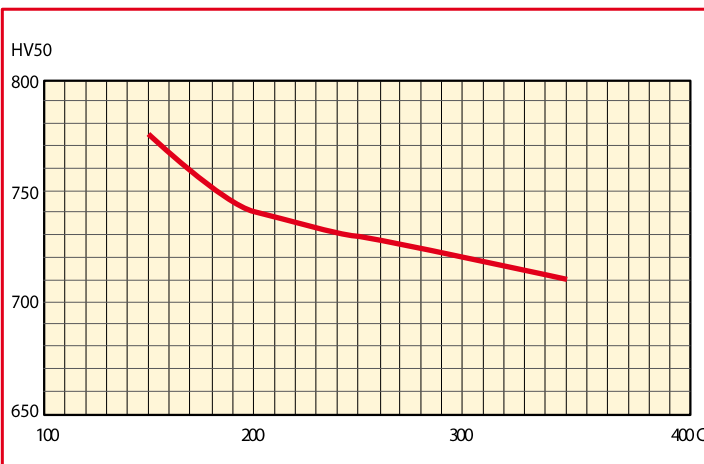
- UTS:	1400 N/mm ²
- 0.2 % Yield strength:	1120 N/mm ²
- Elongation (5d):	13 %
- Impact strength KV:	120 J

- Gas quench (3 bars) from 960°C. Sub-zero -70°C.

Temper at 300°C:

- UTS:	1350 N/mm ²
- 0.2 % Yield strength:	1030 N/mm ²
- Elongation (5d):	13 %
- Impact strength KV:	110 J

**Surface hardness of the carburized layer
in relation to tempering temperature**



COMPOSITION

Carbon..	0,15
Nickel	2,50
Molybdenum.....	2,00
Silicon.....	1,10
Chromium.....	1,00

APPLICATIONS

- This case hardening steel has applications in all mechanical assemblies working at temperatures above 150°C e.g. gears, fuel injectors. It is also used for parts requiring a good adherent PVD layer.
- This steel can be gas pressure quenched, which reduces distortion caused by heat treatment.

CHARACTERISTICS

- Case hardening and through hardening steel with excellent hardenability, high mechanical properties and a surface hardness of around 700 HV after carburizing at tempering temperatures of up to 350°C.
- The good temper resistance of this steel allows it to be used with a duplex treatment (carburising + quenching + nitriding) to obtain a good case depth and surface hardness of more than 800 HV.

HEAT TREATMENT

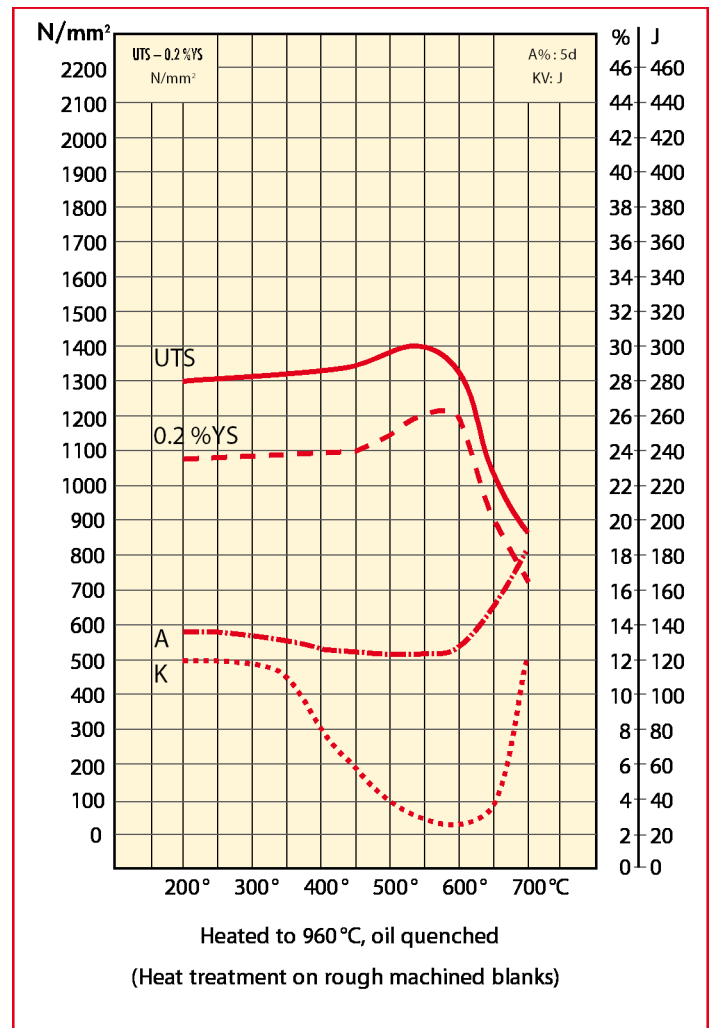
- Carburizing:
 - 850/980°C
- Harden:
 - Heat to 950/970°C
 - Oil or gas pressure quench.
- Temper:
 - After carburizing, quenching and subzero treatment, this steel is tempered between 150°C and 350°C depending on service requirements.

The surface hardness of the carburized layer is more than 60 HRC.

PHYSICAL PROPERTIES

- Density: 7.8
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 100°C: 11.6×10^{-6}
 - between 20°C and 300°C: 12.4×10^{-6}
 - between 20°C and 500°C: 13.2×10^{-6}
- Critical points:
 - Ac 1: 750°C
 - Ac 3: 930°C

TEMPERING CURVE



FORGING

- Please contact us.

Contact:

www.aubertduval.com

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.