AUBERT&DUVAL

Steel

FADH

14NiCrMo13-4

Variants:
FADHW: Consumable electrode remelted steel
FADHYW: Vacuum induction melted and consumable electrode remelted steel

SPECIFICATIONS

European standards:
- 14NiCrMo13-4
- Numerical designation: 1.6657

AIR : 16 NCD 13
WL : 1.6657
BS : S 157
UNS : K43214
AMS : 6547

For the remelted grade:
WL : 1.6658
AMS : 6548

For the vacuum melted and remelted grade:
AMS : 6549

COMPOSITION

Carbon	0.16
Nickel	3.20
Chromium	1.00
Molybdenum	0.25

APPLICATIONS

- Various heavily stressed carburized and non carburized mechanical parts.
- Parts for the aerospace industry.

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: heat to 825°C followed by slow cooling.
  - Brinell Hardness: 217

HEAT TREATMENT REFERENCE

- Oil quench from 825°C. Sub-zero treatment (-70°C). Temper at 150°C.

(Properties beneath the carburized layer)
- UTS: 1350 N/mm^2
- 0.2 % Yield strength: 1000 N/mm^2
- Elongation (5d): 14 %
- Impact strength KV: 140 J

CHARACTERISTICS

- After carburizing, quenching and tempering, the surface hardness is around 700 HV.
- Good toughness of the carburized layer.
- High hardenability.
- Good mechanical properties.
- Good resistance to fatigue.

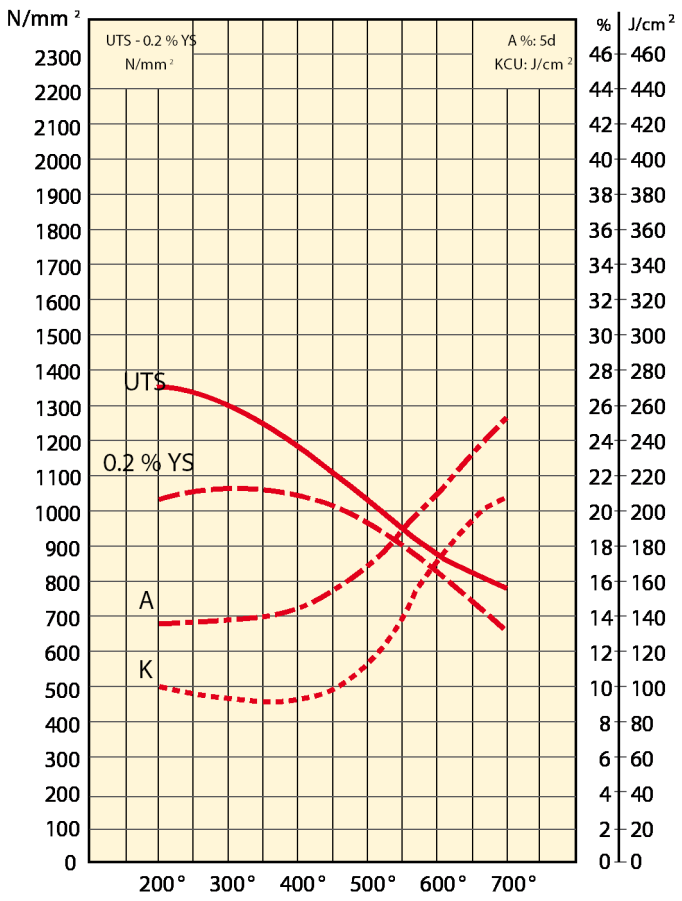
HEAT TREATMENT

- Carburizing:
  - approximately 900°C.
- Harden:
  - Heat to 825/850°C.
  - Oil quench.
- Temper:
  - After carburizing, quenching and sub-zero treatment, the steel is tempered between 140°C and 200°C as required.
  - 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: 11.3×10^{-6}
  - between 20°C and 700°C: 14.0×10^{-6}
- Critical points:
  - Ac 1: 690°C
  - Ac 3: 780°C

TEMPERATURE CURVE



Heated to 825/850 °C, oil quenched.

(Heat treatment on rough machined blanks)

FORGING

- 1100/900°C

Contact:

www.aubertduval.com