

SPECIFICATIONS

EN : 36NiCrMo16

AFNOR: 36NiCrMo16
(former 35NCD16)

W.Nr : 1.6773

DIN : 36NiCrMo16

COMPOSITION

Carbon.....	0.35
Nickel.....	3.80
Chromium.....	1.70
Molybdenum.....	0.30

PHYSICAL PROPERTIES

- Density: 7,8
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 100°C: 11.4×10^{-6}
 - between 20°C and 700°C: 13.6×10^{-6}
- Critical points:
 - Ac 1: 670°C
 - Ac 3: 795°C

APPLICATIONS

- Mechanical components or tools of heavy section or complex shape, exposed to high stresses.

Example:

- Bolsters for drop stamps
- Moulds for manufacturing plastic materials

CHARACTERISTICS

- High field stress and excellent impact strength
- High level of hardenability
- Good dimensional stability
- Ideal where a high polish is required

PROPERTIES

- Brinell hardness approximately 269 in the softened condition

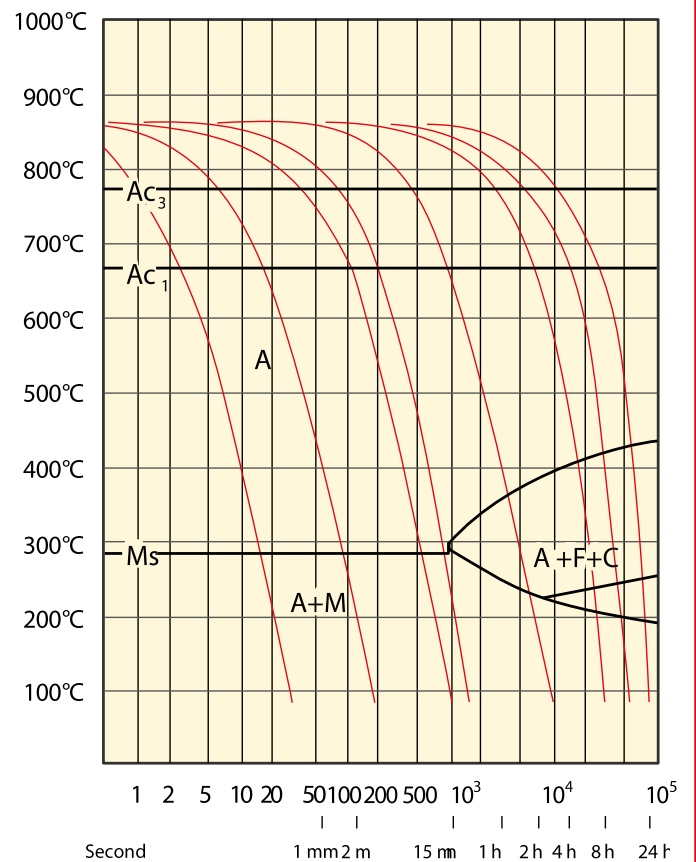
HEAT TREATMENT

- **Hardening:**

- Preheat to 650°C
- Raise to 875°C
- Air cool or gas pressure quench.

It is recommended that heating should take place in a neutral atmosphere.

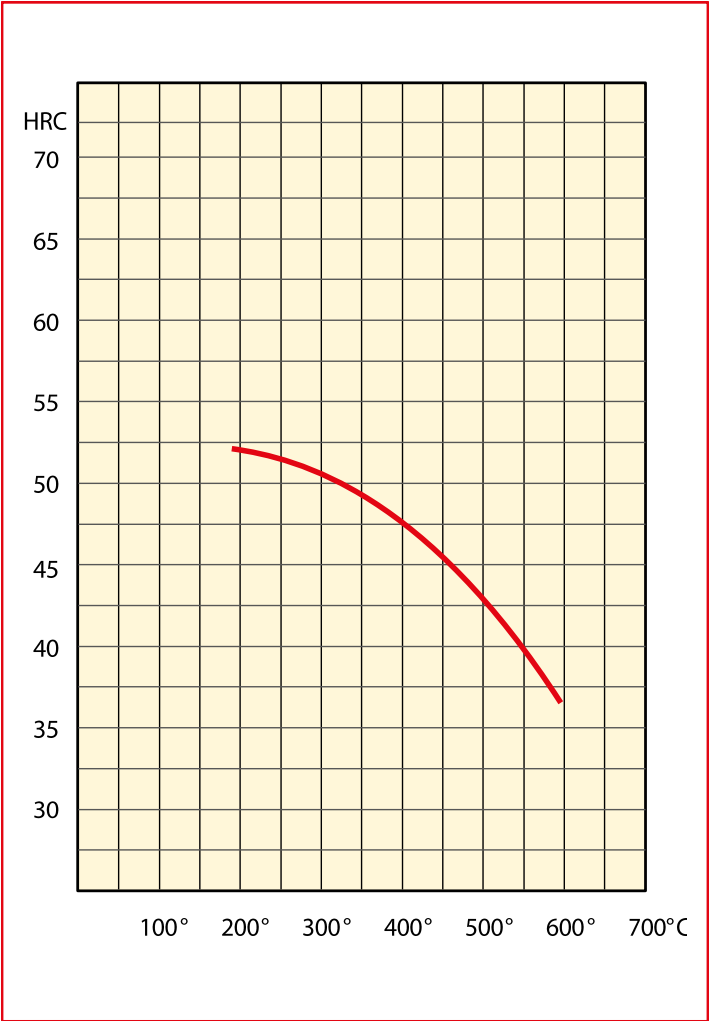
CCT DIAGRAM
Austenitizing at 875°C



PROPERTIES

- Tempering:
 - According to hardness required

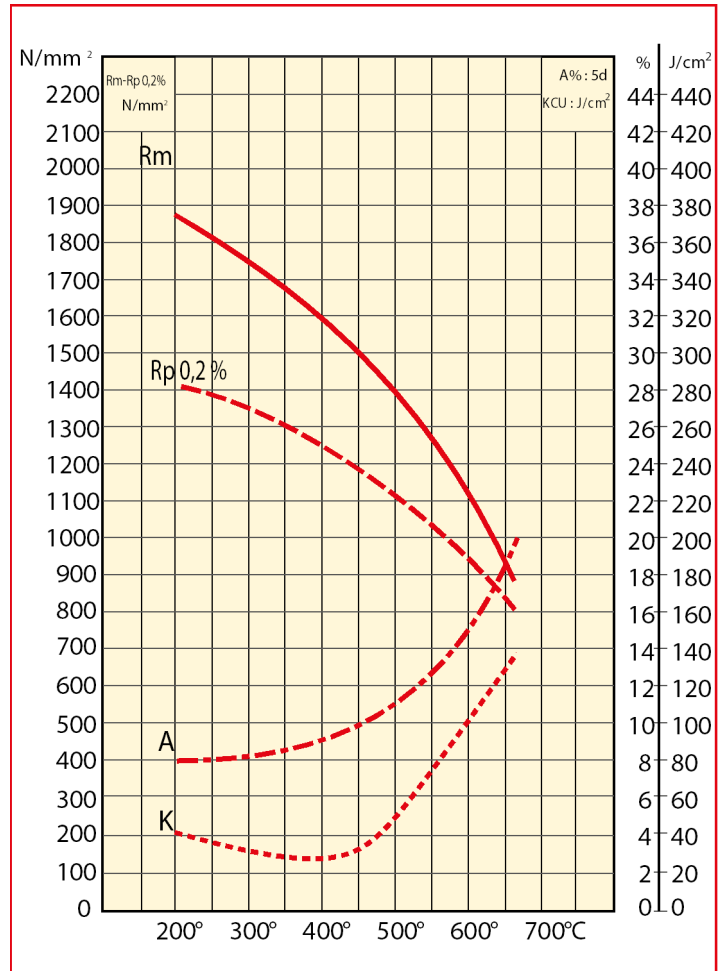
TEMPERING CURVE
1 cm thick test piece



TYPICAL MECHANICAL PROPERTIES

VARIATION OF MECHANICAL PROPERTIES WITH TEMPERING TEMPERATURE

Heat treatment on rough machined blanks



- Annealed condition: heat to 680°C Slow cool

- Hardened at 875°C. Sub-zero treatment (-75°C).

Temper at 200°C.

- UTS:	1850 N/mm ²
- 0.2 % Yield strength:	1400 N/mm ²
- Elongation (5d):	8%
- Impact strength KCU:	40 J/cm ²

- Hardened at 875°C / air quench

Temper at 650°C.

- UTS:	1000 N/mm ²
- 0.2 % Yield strength:	850 N/mm ²
- Elongation (5d):	19%
- Impact strength KCU:	130 J/cm ²

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.