

SPECIFICATIONS

European standard:

- X105CrMo17

- Numerical designation: 1.4125

AIR : Z 100 CD 17

UNS : S44004

AMS : 5630

AISI : 440C

COMPOSITION

Carbon.....	1.00
Chromium.....	17.00
Molybdenum.....	0.50

TYPICAL MECHANICAL PROPERTIES

- Annealed condition: heat to 870°C followed by slow cooling.

- Brinell Hardness: 230

HEAT TREATMENT REFERENCE

- Oil quench from 1040°C, sub-zero treatment (-70/-80°C).

Temper at 140°C:

- hardness: 59 HRC

APPLICATIONS

- Bearings, bearing components.
- Valve seats.
- Guide collars.
- Moulds for manufacturing plastic materials.

QUALITIES

- Provides a high level of hardness combined with good corrosion resistance.
- Excellent abrasion resistance.

HEAT TREATMENT

- Harden:
 - Heat to 1020/1050°C.
 - Oil quench.

For small section parts, oil quench can be replaced with gas pressure quench.

It is recommended that heating should take place in an inert atmosphere.

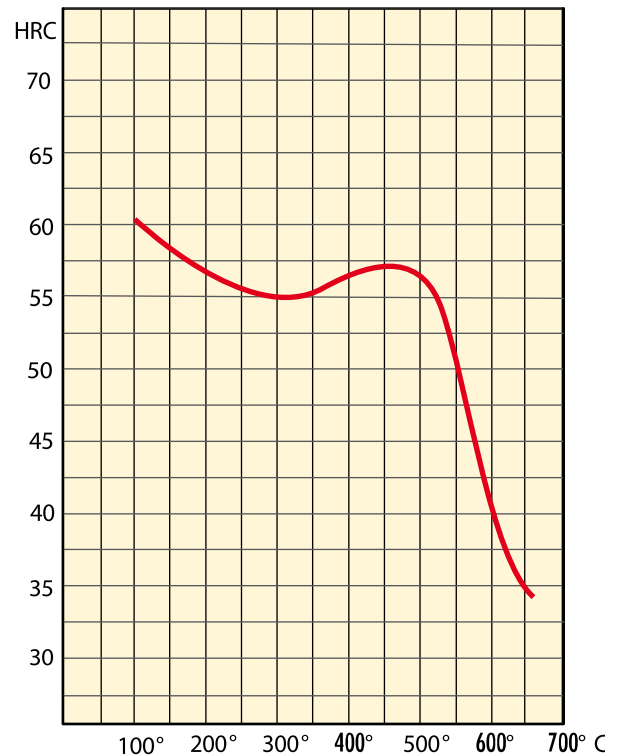
In order to obtain the maximum level of hardness, sub-zero treatment is recommended between quenching and tempering.

- Temper:
 - This must be carried out directly after quenching at a temperature between 120 and 500°C depending on the hardness required.

PHYSICAL PROPERTIES

- Density: 7.7
- Mean coefficient of expansion in m/m.°C:
 - between 20°C and 100°C: 10.2×10^{-6}
 - between 20°C and 300°C: 10.8×10^{-6}
 - between 20°C and 500°C: 11.5×10^{-6}
- Critical points:
 - Ac 1: 815°C
 - Ac 3: 865°C
- Thermal conductivity in W.m/m².°C:
 - at 20°C: 25
 - at 100°C: 29
- Modulus of elasticity in N/mm²:
 - at 20°C: 200×10^3

TEMPERING CURVE



Heated to 1030°C, oil quench.
(Test on 1 cm thick test coupon)

FORGING

- 1100/950 °C

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.