



ONE FIVE ONE

A2

COLD WORK TOOL STEEL

Nominal Chemical Analysis %

C	1.00
Mn	.50
Cr	5.00
Mo	1.00
V	.30

Heat Treatment

Annealing

850 / 870°C for 4 hours approx.
Cool slowly in the furnace at 20°C maximum per hour.

Stress Relieving

625 / 650°C for 2 hours approx.
Cool in still air. Always stress relieve before hardening.

Hardening

Pre-Heating

- (i) 400°C Holding time at temperature:
1 min / mm effective section approx.
- (ii) 650°C Holding time at temperature:
30 sec / mm effective section approx.
- (iii) 850°C Holding time at temperature:
30 sec / mm effective section approx.

Austenitizing

950 / 980°C Holding time at temperature:
1 min / mm effective section approx.
A2 is suitable for Vacuum Hardening.

Quenching:-

- (i) Quench in Air or,
- (ii) Quench in Oil or,
- (iii) Quench into Neutral Salts (Martempering)
at 200 / 230°C then cool slowly in still air.

Temper immediately after quenching whilst tools are still hand warm.

Corresponding Specifications

AISI	A2
BS EN ISO 4957:2000	
X100CrMoV5	
Supersedes BS4659 BA2	
WKSTOFF	1.2363

Colour Code: Blue / Purple

Delivery Condition

Annealed 250 BHN Max

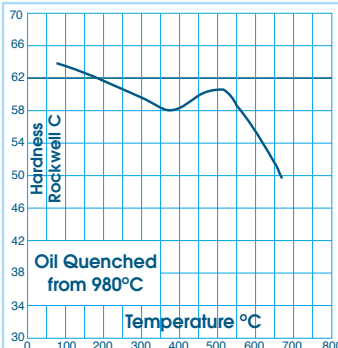
Characteristics

A2 is an air hardening, medium alloyed tool steel capable of high abrasion resistance and excellent toughness. It is readily machinable and is very stable in hardening.

Applications

A2 is suitable for tools for forming, blanking, piercing and bending: for coining tools, shear blades, drawing dies, thread rolling dies, gauges and other measuring tools. It may also be used for plastic mould tools.

Tempering



Consult the tempering diagram and temper according to requirements.

Temper for 1 hour / 25mm effective section for a minimum of 2 hours, then cool in still air.

For guidance, temper at:

- 150 / 220°C for maximum hardness
- 250 / 350°C for hardness with toughness
- 450 / 550°C for maximum toughness

Double tempering is recommended, cooling to room temperature between tempers.

NB. Lower hardness values will tend to result when hardening larger sections.