

2311 MOULD STEEL

TYPICAL ANALYSIS			
C	Mn	Cr	Mo
0.40	1.50	2.00	0.20

BS4659	BP20
ASTM	P20
Werkstoff	1.2311

This pre-hardened tool steel finds wide application in plastic moulding and diecasting operations and may be heat treated further for use in high strength engineering components. It is supplied pre-hardened to approximately 300 HB and in this condition is readily machined by all normal machining processes. The surface hardness may be considerably increased by nitriding, carburising or induction hardening.

APPLICATIONS

Plastic Moulding Dies, Zinc Diecasting Dies, Bolsters.

ANNEALING

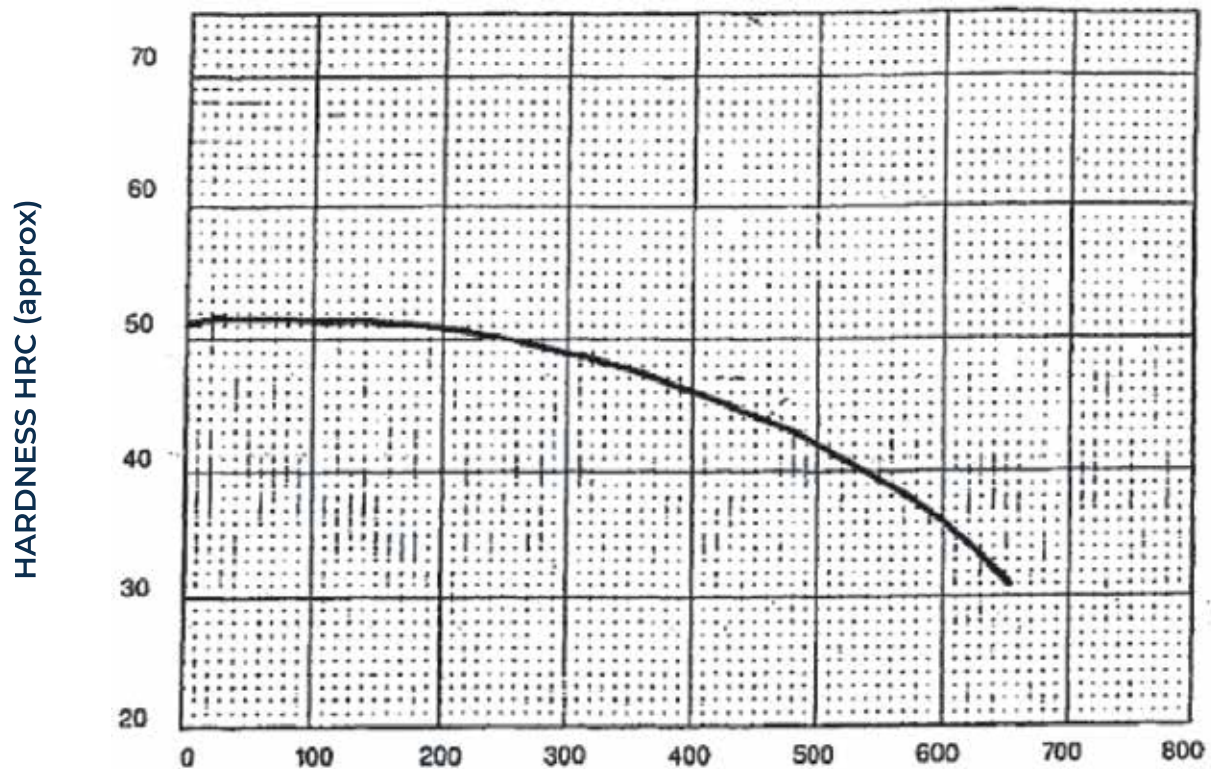
Heat slowly to 760°/780° C, soak thoroughly and furnace cool. Pack or box annealing or use of a controlled atmosphere furnace will minimise scaling and decarburisation. The usual annealed hardness is up to 248 HB.

STRESS RELIEVING

Heat to 650°/700° C. Hold for 2-4 hours and furnace cool.

HARDENING

Before heat treatment, sufficient machining should be carried out to remove surface decarburisation. Preheat thoroughly to 650°r,000c and then raise more rapidly to 830°/850° C in a controlled atmosphere furnace or, preferably, a neutral salt bath. Quench in oil.



TEMPERING TEMPERATURE °C
Hardened in oil from 850°C

TEMPERING

Heat to 200° /650° C for a minimum of one hour. A hot air circulation furnace may be used.

HARDNESS

507-535 HV (50-52 HRC) when tempered at 200/250°C
305-337 HV (30-34 HRC) when tempered at 600/650°C