



E STEEL SDN BHD (891338-A)

NO 3, Lorong Sungai Puloh 7/KU 6,
Kawasan Perindustrian Sungai Puloh, 42100 Selangor D.E
Tel : 03-3292 8686 / 32928666 / 32928777
Fax : 03-3292 8383



- 2311 Steel Properties
- Nearest Equivalent : P20, ASSAB618

DIN 2311 is the Pre Hardened Plastic mould steel hardness distributed evenly in large cross sections that have excellent weldability with least hardness elevation, good mirror polishability and less streak texture making finishing easier. Size Section availability upto 255mm thickness. Supply hardness is 240-280 BHN.

Relevant P20 Tool Steel Specification and Equivalent Steel Grades

Country	USA	German	GB/T
Standard	<u>ASTM A681</u>	DIN EN ISO 4957	GB/T 1299
Grades	P20	1.2311	3Cr2Mo

AISI P20 Steel Plate Materials

ASTM A681	C		Mn		P	S	Si		Cr		Mo	
P20	0.28	0.4	0.6	1	0.03	0.03	0.2	0.8	1.4	2	0.3	0.55
DIN ISO 4957	C		Mn		P	S	Si		Cr		Mo	
1.2311	0.35	0.45	1.3	1.6	0.03	0.03	0.2	0.4	1.8	2.1	0.15	0.25

P20 Steel Mechanical Properties

Properties	Metric
Hardness, Brinell (typical)	300
Hardness, Rockwell C (typical)	30
Tensile strength, ultimate	965-1030 MPa
Tensile strength, yield	827-862 MPa
Elongation at break (in 50 mm (2"))	20.00%
Compressive strength	862 MPa
Charpy impact (V-Notch)	27.1-33.9 J
Poisson's ratio	0.27-0.30
Elastic modulus	190-210 GPa

Application Of 2311 mould steel

Plastic mould steel equivalent to DIN 2311 use for die holders, zinc die, casting dies, backers, bolsters, injection moulds, mould frames for plastic moulds, Shoe Blocks, pressure casting moulds, recipient sleeves Etc.



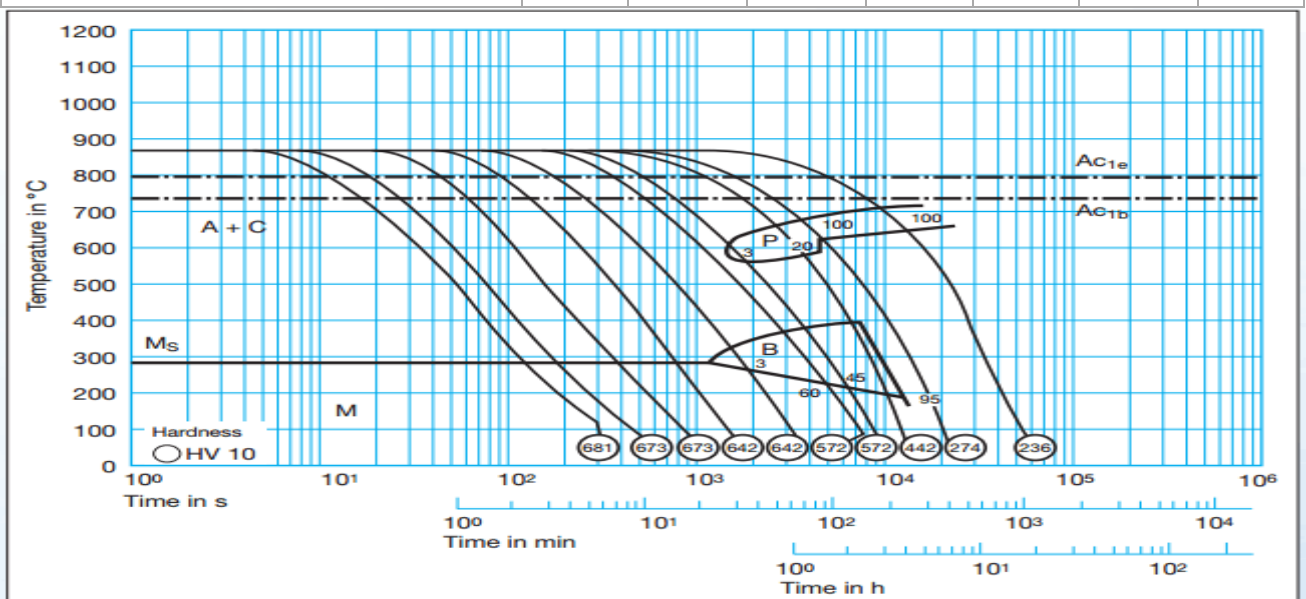
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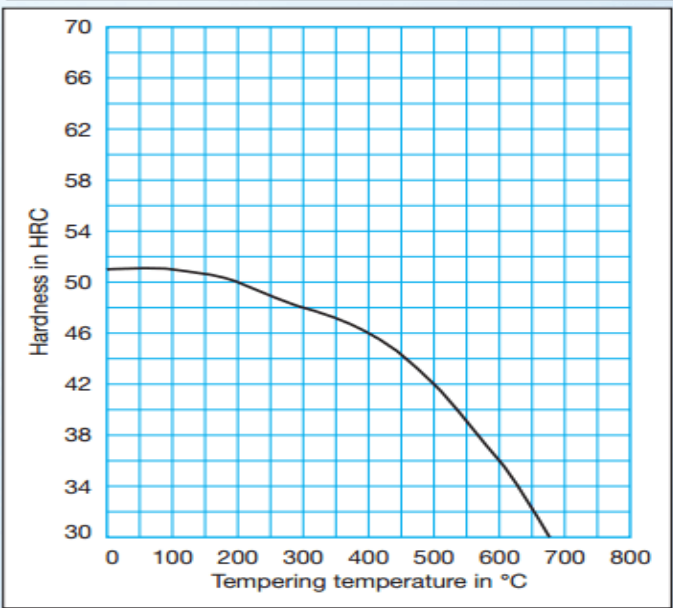


2311 Steel Heat Treatment

Soft annealing °C		Cooling		Hardness HB				
710 – 740		Furnace		max. 235				
Hardening °C	Quenching		Hardness after quenching HRC					
850 – 880	Oil or saltbath, 180 – 220 °C		52					
Tempering °C after Quenching		100	200	300	400	500	600	700
HRC		52	50.5	48.5	46	42	36.5	28



Time Temperature Transformation



Tempering