



EDELSTAHL GMBH J.P. SCHUMACHER

SPECIAL STEEL * BARS * BLOCKS * FORGINGS



W.1.2311 (similar to AISI P20)

Conventional melting (EF+LF+VD)

GENERAL

- hardenable and temperable plastic mould steel
- well polishable
- nitridable
- suitable for chrome plating and pitting;
- uniform hardness up to a cross-section of approx. 400 mm.
- good toughness
- good machinability

APPLICATIONS

- For :
- plastic moulds
 - tool frames
 - mould frames for plastic and pressure casting moulds

CHEMICAL ANALYSIS %

C	Si	Mn	P	S	Cr	Mo
0,37 - 0,42	≤ 0,40	1,40 – 1,60	≤ 0,025	≤ 0,005	1,80 – 2,10	0,15 – 0,25

PHYSICAL PROPERTIES :

Coefficient of thermal expansion	20-100° Celsius [10 ⁻⁶ m/(m x K)]	20-200° Celsius [10 ⁻⁶ m/(m x K)]	20-300° Celsius [10 ⁻⁶ m/(m x K)]	20-400° Celsius [10 ⁻⁶ m/(m x K)]	20-500° Celsius [10 ⁻⁶ m/(m x K)]
	11,1	12,9	13,4	13,8	14,2
Thermal conductivity	20° Celsius [W/(m x K)]	350° Celsius [W/(m x K)]	700° Celsius [W/(m x K)]		
	35,7	33,4	32,0		

ULTRASONIC:

ASTM A388 - FBH max. 6 mm (1/4 inch) or
SEP 1921 – test group 3 – class C , c or
acc. to your request

CLEANLINESS:

ASTM E45- Method A with type A ≤ 1,5 ,
B; C and D each ≤ 2 or
DIN 50602– K4 ≤ 20 or
acc. to your request

DELIVERY CONDITION :

hardened and tempered with a hardness of 280 - 325 HB (950 - 1100 N/mm²)

SERVICE STRENGTH:

280 – 325 HB

STRUCTURE:

fine bainitic structure



WARE HOUSE: PLOT NO 1442, ROAD NO 16,
 KALAMBOLI WAREHOUSING COMPLEX, KALAMBOLI, NAVI MUMBAI 410218.
TEL: +91-22-2742 3998, 5590 3711 **FAX:** +91-22 5590 3712 **EMAIL:** ANAND_STEEL@VSNL.COM



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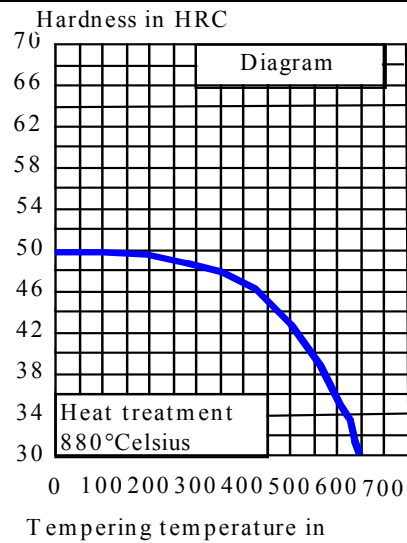
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HEAT TREATMENT :

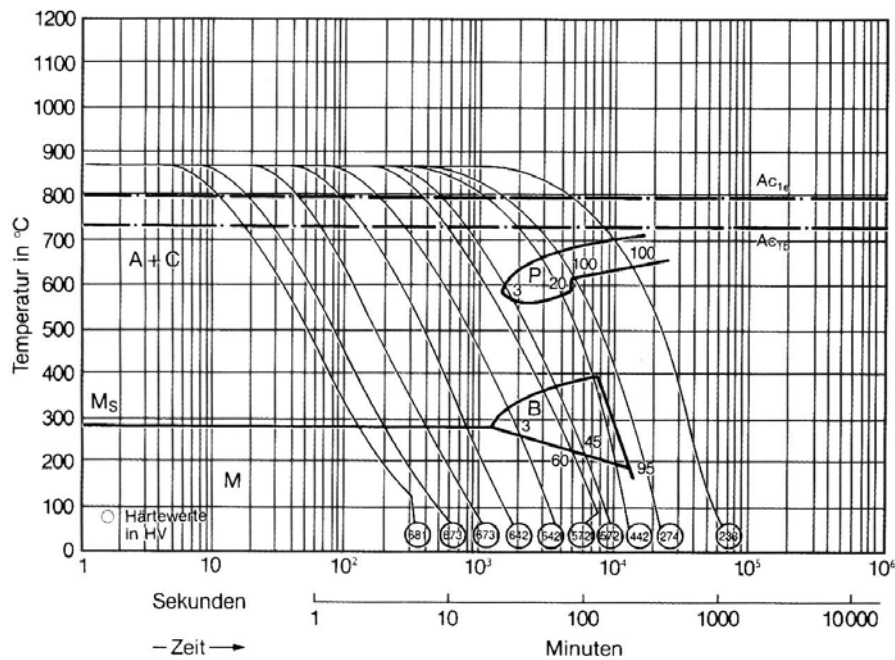
Hot forming	Soft annealing	Hardening	Tempering
1050 - 850° Celsius	720 - 750° Celsius	840 - 870° Celsius	600 – 680° Celsius #

TEMPERING DIAGRAM:

values in HRC
 tested on samples dia. 25 x 50 mm long
 hardened at 850 °C in oil



CCT GRAPH :



DELIVERY SIZES:

Rounds – up to 500 mm
 Blocks – up to 400 mm thickness