



SCHMIEDEWERKE GMBH J.P. SCHUMACHER



SPECIAL STEEL * BARS * BLOCKS * FORGINGS

XPM 36

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Conventional melting (EF+LF+VD)

GENERAL

- uniform hardness across the cross-section
- very good polishability
- good machinability
- greatly increased thermal conductivity
- hardenable and temperable plastic mould steel
- nitridable
- suitable for chrome plating and pitting;
- improve weldability as 2738
- good toughness

APPLICATIONS

- die steel for plastic moulds with a thickness over 400 mm
- moulds for TV housings and rear walls
- copier housings
- moulds for dashboards and large outside body parts

CHEMICAL ANALYSIS %

C	Si	Mn	P	S	Cr	Mo	Ni	special elements
0,23 - 0,29	≤ 0,40	1,40 - 1,70	≤ 0,025	≤ 0,005	1,20 - 1,80	0,30 - 0,70	0,90 – 1,20	added

PHYSICAL PROPERTIES :

	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)]
Coefficient of thermal expansion	11,8	12,5	13,1	13,5	14,8
Thermal conductivity	20° Celsius [W/(m x K)]	350° Celsius [W/(m x K)]	700° Celsius [W/(m x K)]		
	37,2	41,0	39,2		

ULTRASONIC:

ASTM A388 - FBH max. 3 mm (1/8 inch) or
SEP 1921 – test group 3 – class E , e 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 double tempered with a hardness of 32 – 36 HRC or 36 – 40 HRC

SERVICE STRENGTH:

32 – 36 HRC or 36 – 40 HRC

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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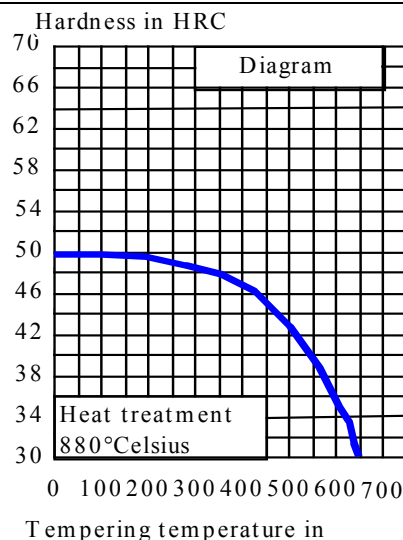
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HEAT TREATMENT :

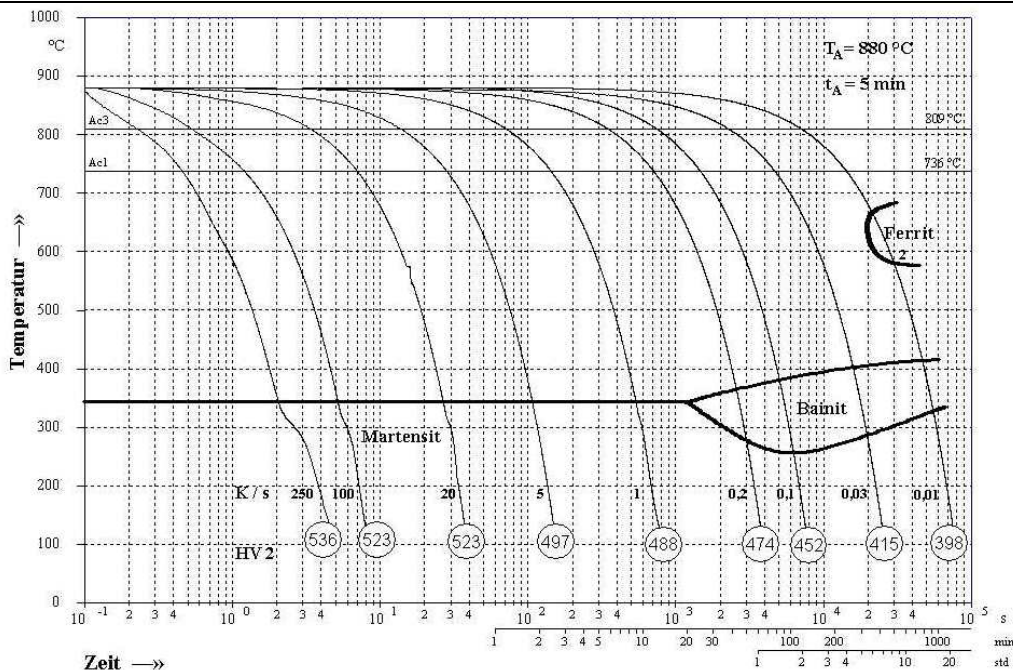
Hot forming	Soft annealing	Hardening	Tempering
1100 - 850° Celsius	710 - 740° Celsius	870 - 890° Celsius	600 - 680° Celsius #

TEMPERING DIAGRAMM:

values in HRC
tested on samples dia. 25 x 50 mm long
hardened at 880 °C in oil



CCT GRAPH :



DELIVERY SIZES:

Rounds – up to 1300 mm
Blocks – up to 1000 mm thickness



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Cutting values - **scrup-, face milling**

Mentioned values: V_c in m/min.

				1.2738		XPM 36	
				hardened and tempered		hardened and tempered	
				30-34 HRC		32-36 HRC	36-40 HRC
scrup milling ¹	HSS		+	*	*		
			-	*	*		
	hard metal uncoated	P25	+	** (100)	** (120)	105	
			P35	-	** (85)	** (100)	85
	hard metal coated	P25	+	150	180	160	
			P35	-	120	140	120

face milling ²	HSS (1.3234) fz = max. 0,1 mm		+	20	20	20
			-	12	12	12
	hard metal uncoated	P25	+	** (160)	** (210)	170
			P35	-	** (130)	** (170)
	hard metal coated	K15	+	220	270	230
			P25	-	220	260
	hard metal Cerment	P15	+	270	320	270
			-	*	*	

Legend:

- * not to recommend
- ** The application of coated hartmetal will be recommended. If not, the mentioned values are valid.
- ¹ advance per cog (fz) = 0,1 - 0,3 mm and relation of milling width to tool diameter < 3/4
- ² advance per cog (fz) = 0,03 - 0,3 mm and relation of milling width to tool diameter = 1/10

Hint:

At tool diameter > 70 mm the cutting speed has to be reduced by factor 0,7!