



EDELSTAHL GMBH J.P. SCHUMACHER

SPECIAL STEEL * BARS * BLOCKS * FORGINGS



W.1.2316 VICTORY ESR

ESR = Electro-slag-remelting							
COMPARABLE GRADES: S136; M300 ESR extra							
GENERAL							
<ul style="list-style-type: none"> - corrosion-resistant - hardened and tempered die steel - wear-resistant - tough - good warm-strength properties - uniform hardness across the cross-section - high polishability - high surface finish - very low inclusion content - constant cycle times 							
APPLICATIONS							
<ul style="list-style-type: none"> - tools used to process plastics which are chemically - especially aggressive (thermo plastics) - dies for similar use 							
CHEMICAL ANALYSIS %							
C	Si	Mn	P	S	Cr	Mo	Ni
0,33 - 0,43	≤ 1,00	≤ 1,00	≤ 0,025	≤ 0,005	15,5 – 17,0	1,0 – 1,2	≈ 0,5
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)]		
	10,4	10,8	11,2	11,6	11,9		
Thermal conductivity	20° Celsius [W/(m x K)]	350° Celsius [W/(m x K)]	700° Celsius [W/(m x K)]				
	11,2	21,0	24,7				
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 ≤ 0,5 , B; C and D each ≤ 1 or DIN 50602– K1 ≤ 10 or acc. to your request							
STANDARD DELIVERY CONDITION :							
hardened and tempered with a hardness of 28 - 32 HRC or 32 - 36 HRC							



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STRUCTURE:			
fine uniform bainite structure			
HEAT TREATMENT:			
Hot forming	Soft annealing	Hardening	Tempering
1100 - 900° Celsius	780 - 820° Celsius	1000 - 1040° Celsius	600 – 700° Celsius *
TEMPERING DIAGRAMM: *			
values in HRC tested on samples dia. 25 x 50 mm long hardened at 1010 °C in oil		<p style="text-align: center;">Heat treatment 1010°C Celsius</p>	
CCT GRAPH :			
DELIVERY SIZES:			
Rounds – up to 600 mm			
Blocks – up to 800 mm width x 410 mm thickness			