



EDELSTAHL GMBH J.P. SCHUMACHER

SPECIAL STEEL * BARS * BLOCKS * FORGINGS



W.1.2316

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| Conventional melting (EF+LF+VD) | | | | | | | |
|---|---|---|---|---|---|-----------|-------|
| GENERAL | | | | | | | |
| <ul style="list-style-type: none"> - corrosion-resistant - hardened and tempered die steel - high polishability - wear-resistant - tough - good warm-strength properties - uniform hardness across the cross-section | | | | | | | |
| APPLICATIONS | | | | | | | |
| <ul style="list-style-type: none"> - tools used to process plastics which are chemically especially aggressive - 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 ≤ 1,5 , | | | | or | | | |
| 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/mm ²) | | | | | | | |
| SERVICE STRENGTH: | | | | | | | |
| 280 – 325 HB | | | | | | | |
| STRUCTURE: | | | | | | | |
| fine bainitic structure | | | | | | | |



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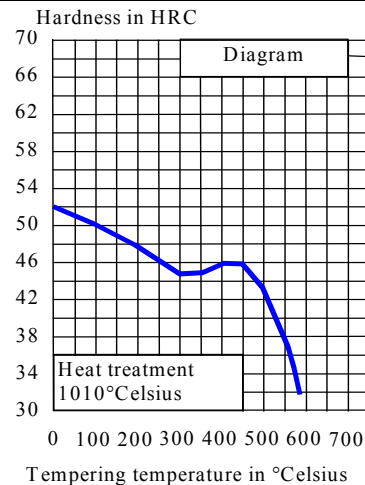
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HEAT TREATMENT :

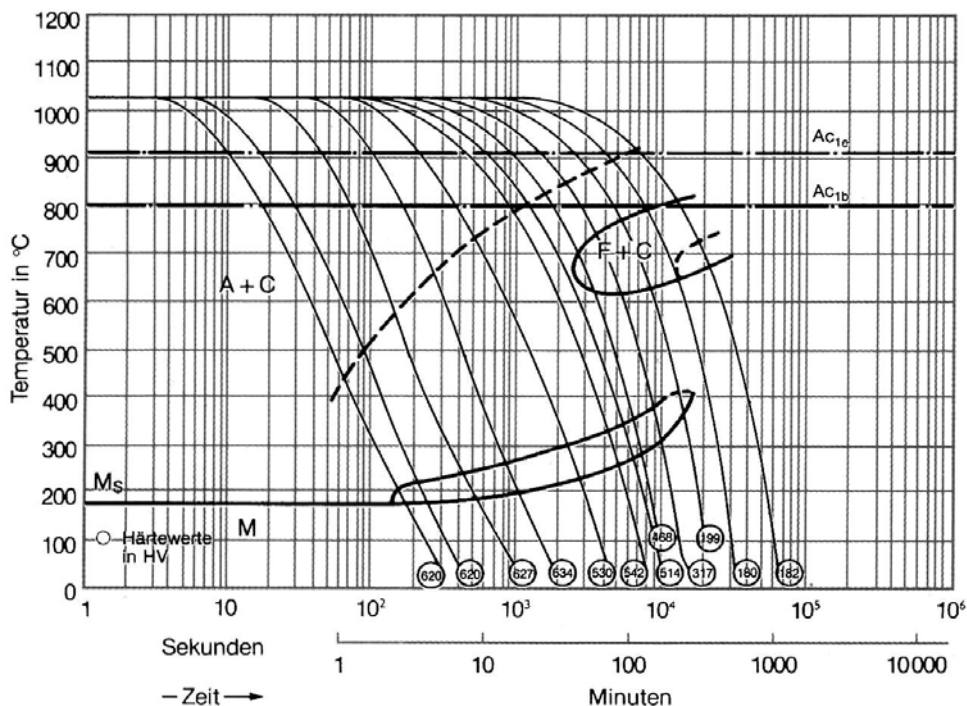
| Hot forming | Soft annealing | Hardening | Tempering |
|---------------------|--------------------|----------------------|----------------------|
| 1100 - 900° Celsius | 780 - 820° Celsius | 1000 - 1040° Celsius | 600 – 700° Celsius # |

TEMPERING DIAGRAM:

values in HRC
tested on samples dia. 25 x 50 mm long
hardened at 1010 °C in oil



CCT GRAPH :



DELIVERY SIZES:

Rounds – up to 600 mm
Blocks – up to 1200 mm width x 410 mm thickness