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EX2 VICTORY ESR

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Electro-slag-remelting (ESR)

GENERAL:

- Uniform and high level of machinability and polishability
- High level of toughness and ductility
- Good abrasion resistance at low and high temperatures
- Excellent through-hardening properties
- Good high-temperature strength and thermal fatigue resistance
- Very limited distortion during hardening.
- Isotropic properties compared to conventionally produced steel grades
- Better toughness as 1.2344 VICTORY ESR

APPLICATIONS:

Moulds for:

- tools for die casting (dies, fixed inserts, cores, nozzles, nitrided ejector pins, nitrided shot-sleeves)
- tools for extrusion (dies, die-holders, liners, dummy blocks)
- tools for hot pressing (Aluminium, Magnesium, Copper Alloys)
- moulds for plastics (injection moulds)
- parts for cold punching, scrap shears, hot shearing, shrink rings, wear resisting parts

CHEMICAL ANALYSIS: %

C	Si	Mn	P	S	Cr	Mo	V
0,35-0,40	≤ 0,50	0,30-0,50	≤ 0,020	≤ 0,002	4,80-5,50	1,60-1,80	0,40-0,60

PHYSICAL PROPERTIES:

Coefficient of thermal expansion [10 ⁻⁶ m/(m × K)]	20-100 °C	20-200 °C	20-300 °C	20-400 °C	20-500 °C	20-600 °C	20-700 °C
	11.9	12.4	12.6	12.7	13.0	13.1	13.4
Thermal conductivity [W/(m × K)]	20° C		350° C		700° C		
	29.6		31.0		33.0		



Schmiedewerke Gröditz

GmbH · since 1779 · High-Grade Steel

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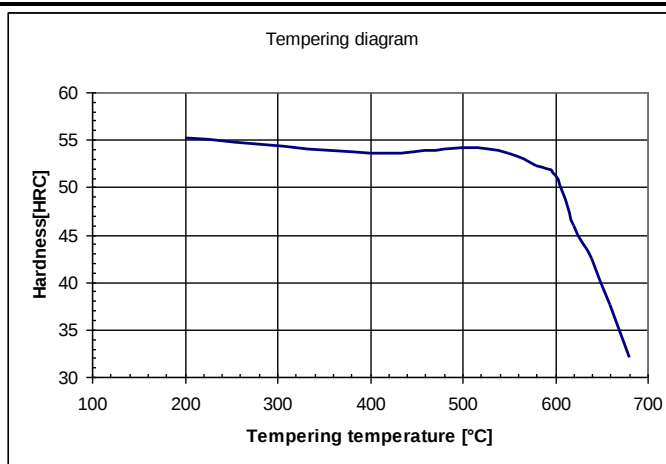
EX2 VICTORY ESR

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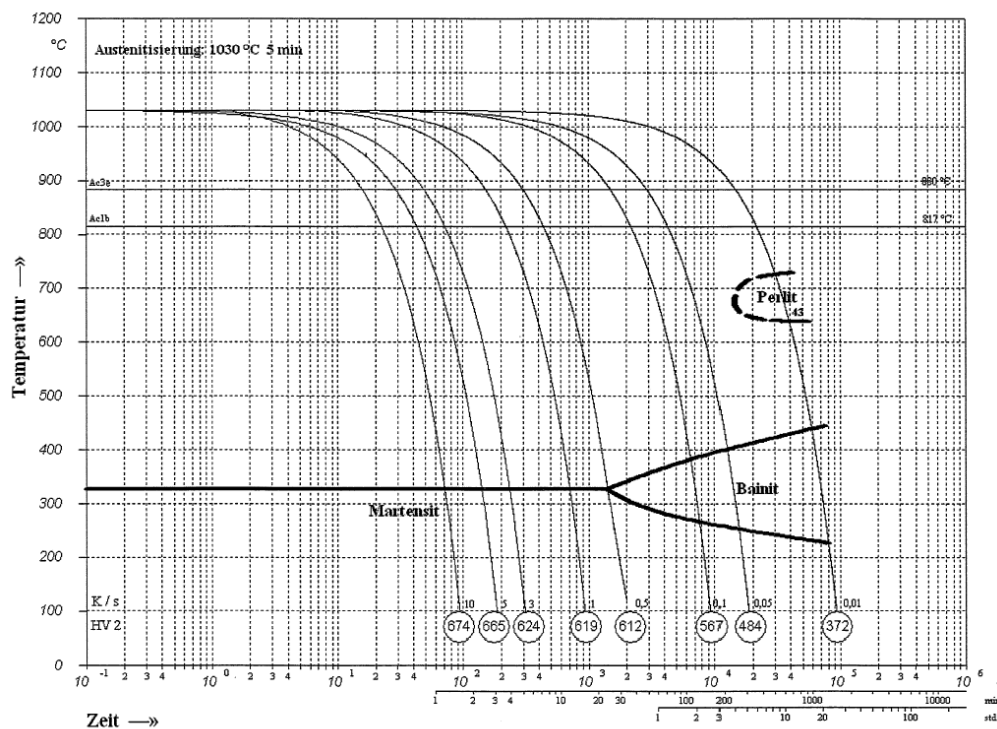
HEAT TREATMENT:

Hot forming	Soft annealing	Hardening	Tempering
1050 - 850°C	820 - 850°C	1000 - 1040°C	530 - 680°C #

TEMPERING DIAGRAM:



CCT GRAPH:



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EX2 VICTORY ESR

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DELIVERY CONDITION:

EFS annealed

fine uniform annealed structure with a hardness of a maximum of 220 HB

see next page

SERVICE HARDNESS:

30 - 56 HRC

IMPACT STRENGTH:

Unnotched test sample 10x7x55 [mm] hardened and tempered at 44-46HRC

VDG M82 Ed.02/1993

400 J/cm²

or

test sample hardened and tempered at 44-46HRC: Charpy V min. 20J

or according to



or acc. to your request

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

STRUCTURE:

fine uniform annealed structure

see next page

DELIVERY SIZES:

diameter – up to 600 mm

or

thickness - up to 400 mm

or acc. to your request

Remark:

The best mechanical properties will be reached by using material which has been produced close to the requested final dimension.



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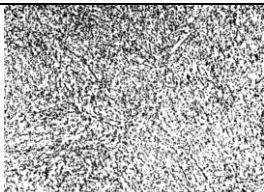
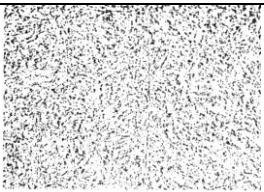
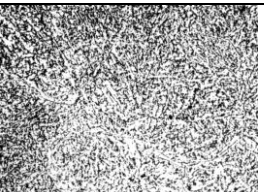
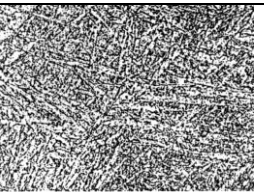
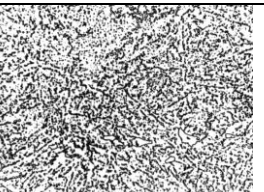
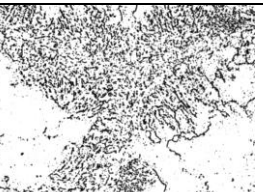
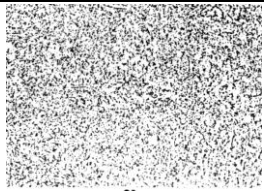
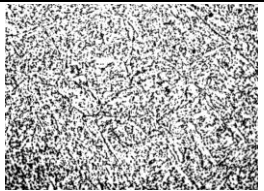
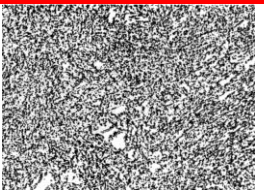
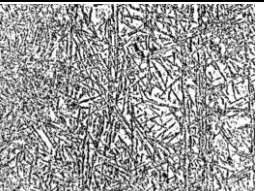
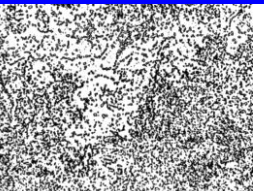
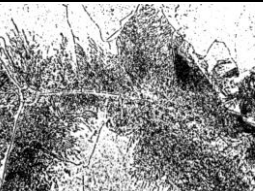
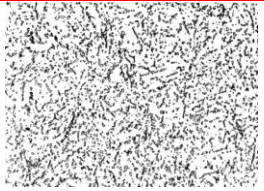
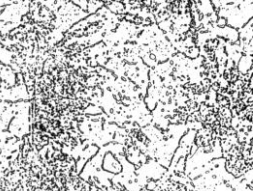
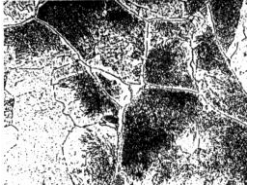
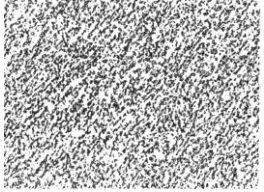
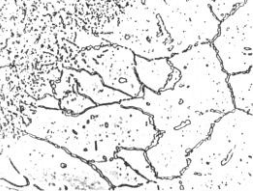
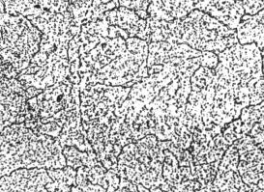
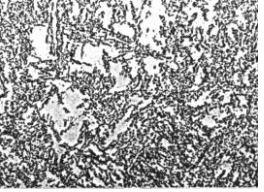
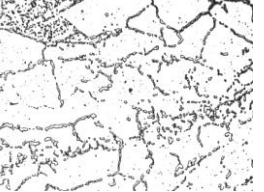
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Rating Chart for the Evaluation of Microstructure of Annealed Hot-Work Tool Steel

	GA	GB	GC	GD	GE	GF
1	 GA1	 GB1	 GC1	 GD1	 GE1	 GF1
2	 GA2	 GB2	 GC2	 GD2	 GE2	 GF2
3	 GA3	 GB3	 GC3	 GD3	 GE3	 GF3
4	 GA4	 GB4	 GC4	 GD4	 GE4	 GF4
5	 GA5	 GB5	 GC5	 GD5	 GE5	 GF5
	EFS geglüht / EFS annealed		ESU bis 400 mm / ESR up to 400 mm		ESU bis 250 mm / ESR up to 250 mm	

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