

Material no.: 1.2379

Abbreviated DIN name: X153 CrMoV 12

Chemical analysis (%):

C	Si	Mn	Cr	V	Mo
1,50	0,35	0,40	12,0	0,90	0,85

HASCO colour code: black / red
Flat steel: black

Hardness when supplied: annealed to approx. 255 HB (~ 860 N/mm²)

Characteristics

Material properties:

Versatile cold-work steel, highly chrome-alloyed steel, good dimensional stability and toughness combined with high compressive strength. For good eroding properties, secondary hardening is recommended.

Uses:

Compression moulding and injection moulding tools for reinforced plastics. Cutting, punching and thermoforming tools and other applications where a high level of toughness is required.

Remarks

Polishing: Possible in the hardened state.

Graining: Not usual.

Nitriding: Only recommended after secondary hardening.

Hardening: 1000°C – 1050°C,
Details can be taken from the time-temperature conversion and tempering charts. The most suitable heat treatment for the relevant workpiece should be fixed by the hardening shop. The hardness should be specified by the hardening shop and checked on delivery.

Soft annealing: 820°C – 850°C, ca. 4 Std.

Stress-relief annealing: To eliminate residual stress after coarse machining at approx. 600°C – 650°C, approx. 4 h with slow heating and furnace cooling.

Normal working hardness: 58 - 62 HRC

Physical properties

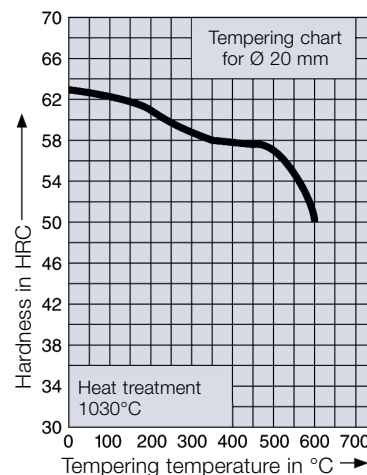
Thermal expansion coefficient (10⁻⁶·m)/(m·K)

100	200	300	400	500	600	700	°C
10,5	11,5	12,0	12,2				

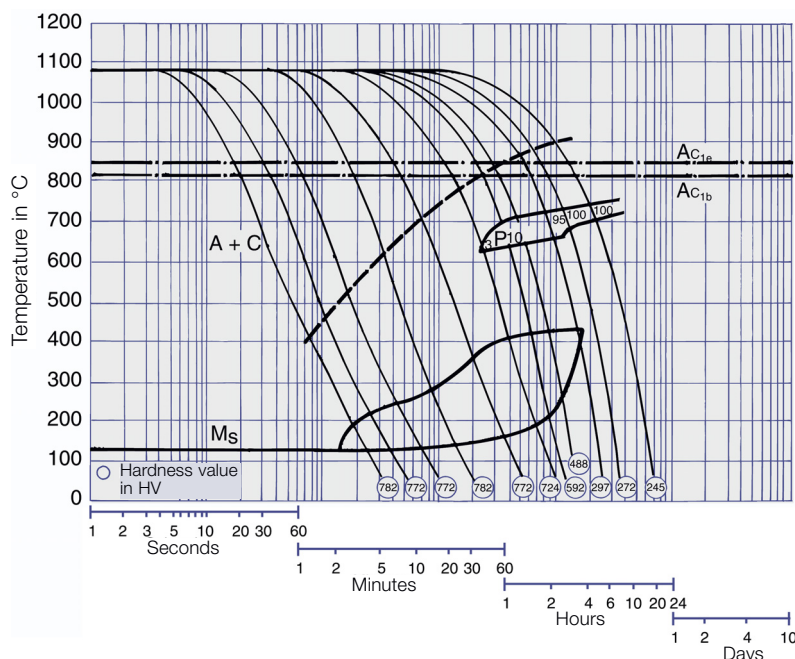
Thermal conductivity W/(m·K)

20	350	700	°C
16,7	20,5	24,2	

▼ Tempering charts



▼ Time-temperature conversion chart



Secondary hardening

