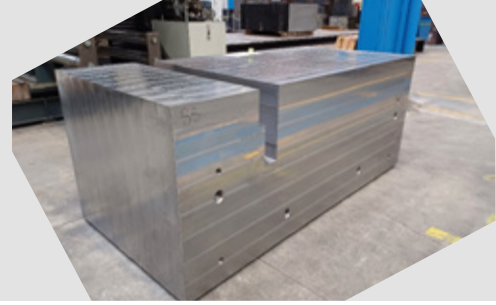


# W1.2738HH

PLASTIC MOULD STEEL



## Main characteristics and applications

W1.2738HH is a Pre-hardened plastic tool steel ideal to produce block with thickness up to 1300mm in large size with an high performance of trough hardening homogeneity.

To be used for plastic injection moulds, compression moulds, big sizes moulds for automotive industry with texturing.

W1.2738HH is designed to provide improved performances and offers the following advantages:

- uniform hardness across the full thickness up to 1300mm.
- high polishability.
- high machinability.
- excellent suitability for texturing.
- greatly increased thermal conductivity.
- improved weldability as W 1.2738.
- good toughness.

## Chemical composition (typical; in weight %)

C	Mn	Si	Cr	Mo	P	S	Ni
0.29	1.50	Max 0.30	1.3	0.57	0.010	0.001	1.05

## Production technology

EAF – LF – VD - Forging – Heat treatment QT

## US specification

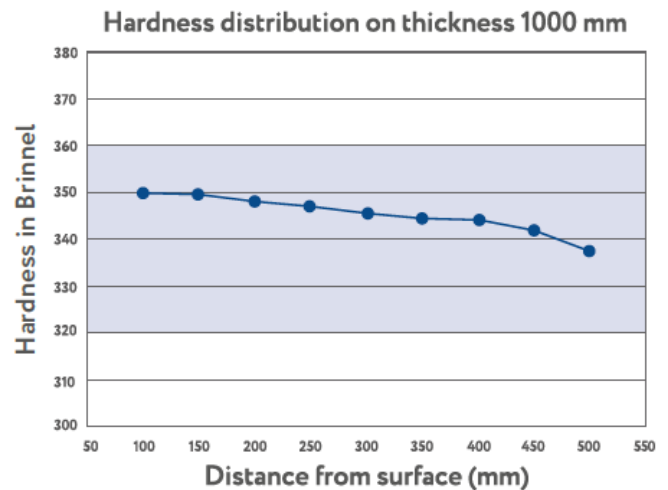
In according to standard EN10228-3 Class 4 and standard SEP 1921 Class E/e

## Delivery condition

W1.2738HH is in delivered quenched and tempered condition, with hardness range 320 - 360 HB (34 - 39 HRC).

## Through hardenability

The high performance of hardenability for thickness 1300 mm, is obtained by an optimized balance of chemical composition and a special manufactured process.

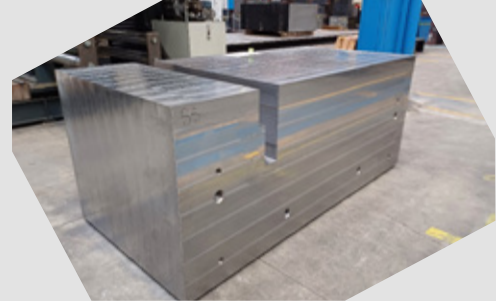


## Physical properties (reference values)

	20°C	100°C	250°C	500°C
Thermal expansion coefficient (10 <sup>-6</sup> /K)	11.4	11.6	12.7	14.2
Thermal conductivity (W/mk)	36	36.7	38	34.3
Young modulus (Kn/mm <sup>2</sup> )	211	207	199	166

# W1.2738HH

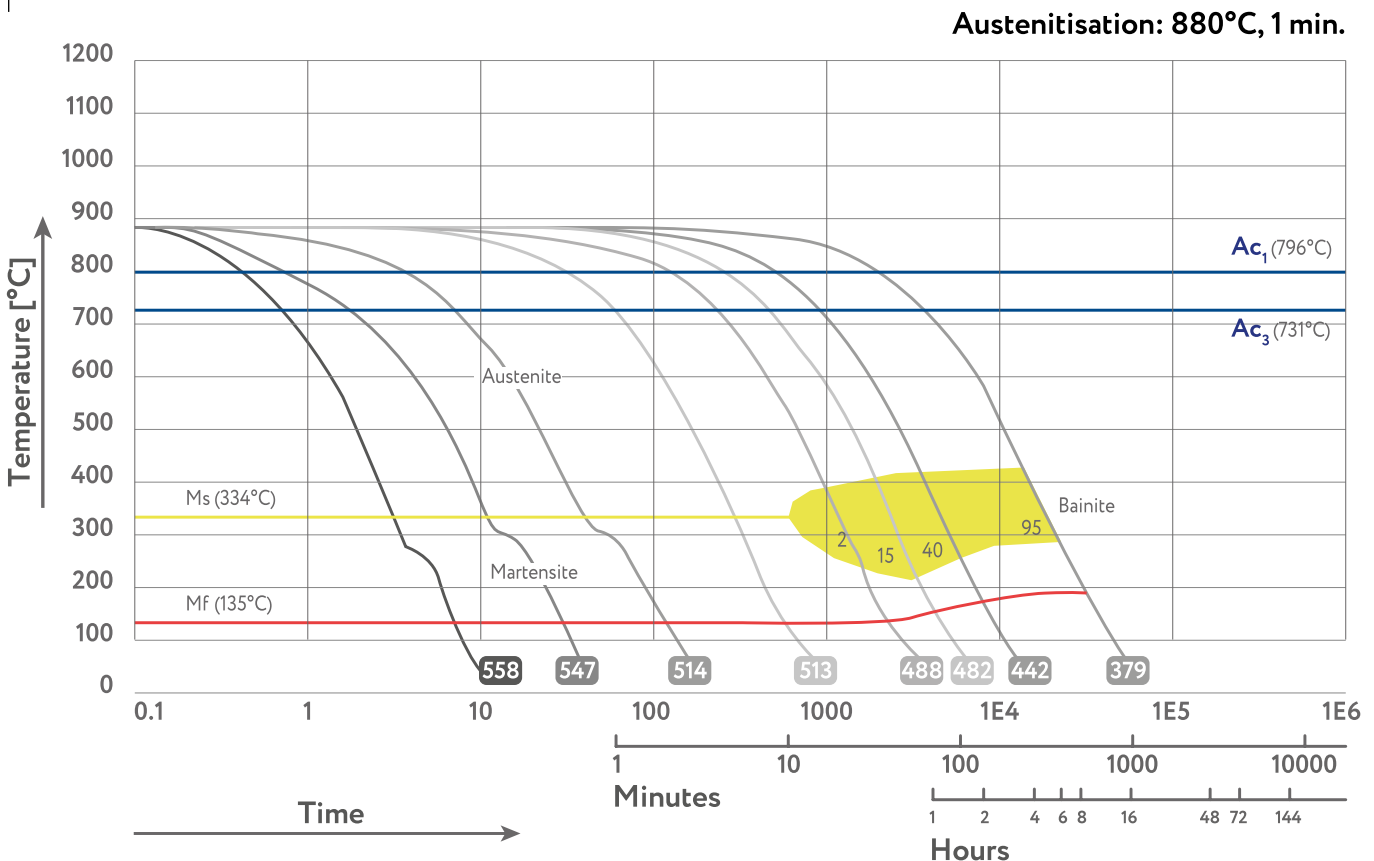
PLASTIC MOULD STEEL



## Heat treatment

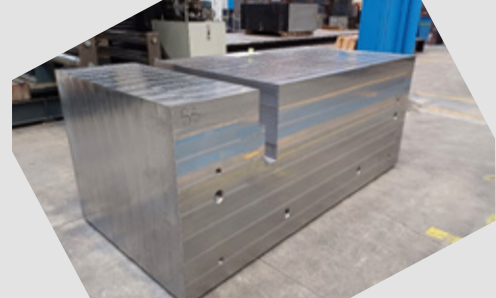
TREATMENT	TEMPERATURE	HOLDING TIME (HT)	COOLING	COMMENTS
<b>Annealing</b>	Heat to 650 - 700 °C	Min. H.T. for 2 minute /mm	Air or furnace	In order to obtain hardness lower than 250 HB ( 24 HRC) to improve machinability
<b>Stress relieving</b>	Heat to 500 - 550 °C	Min. H.T. for 2 minute /mm	Air or furnace	To be carried out after machining, is recommended to eliminate the residual stresses induced by mechanical working
<b>Hardening</b>	Heat to 860 - 900 °C	Min. H.T. for 1 minute /mm	Polymer	-
<b>Tempering</b>	Heat to 550 - 610 °C	Min. H.T. for 3 minute /mm	Air or furnace	To be carried out after hardening. 2nd Tempering must be performed to max 30°C below tempering temperature

## C.C.T. curve

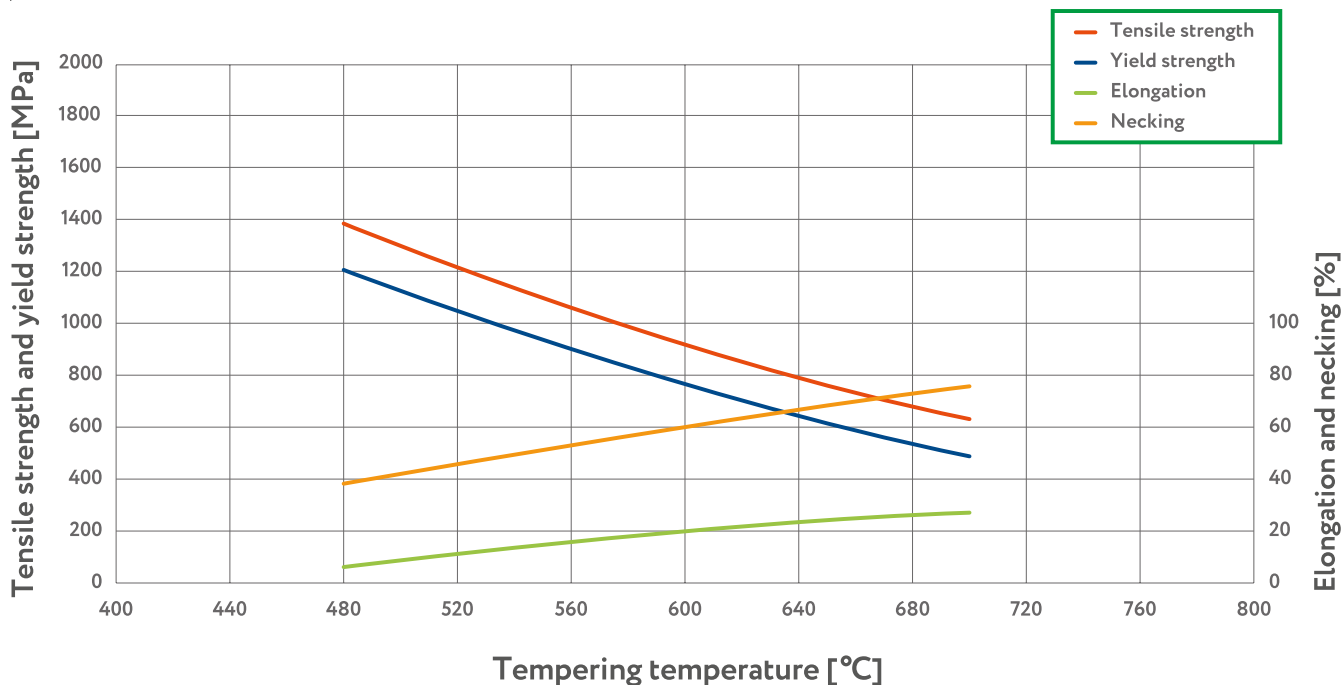


# W1.2738HH

PLASTIC MOULD STEEL

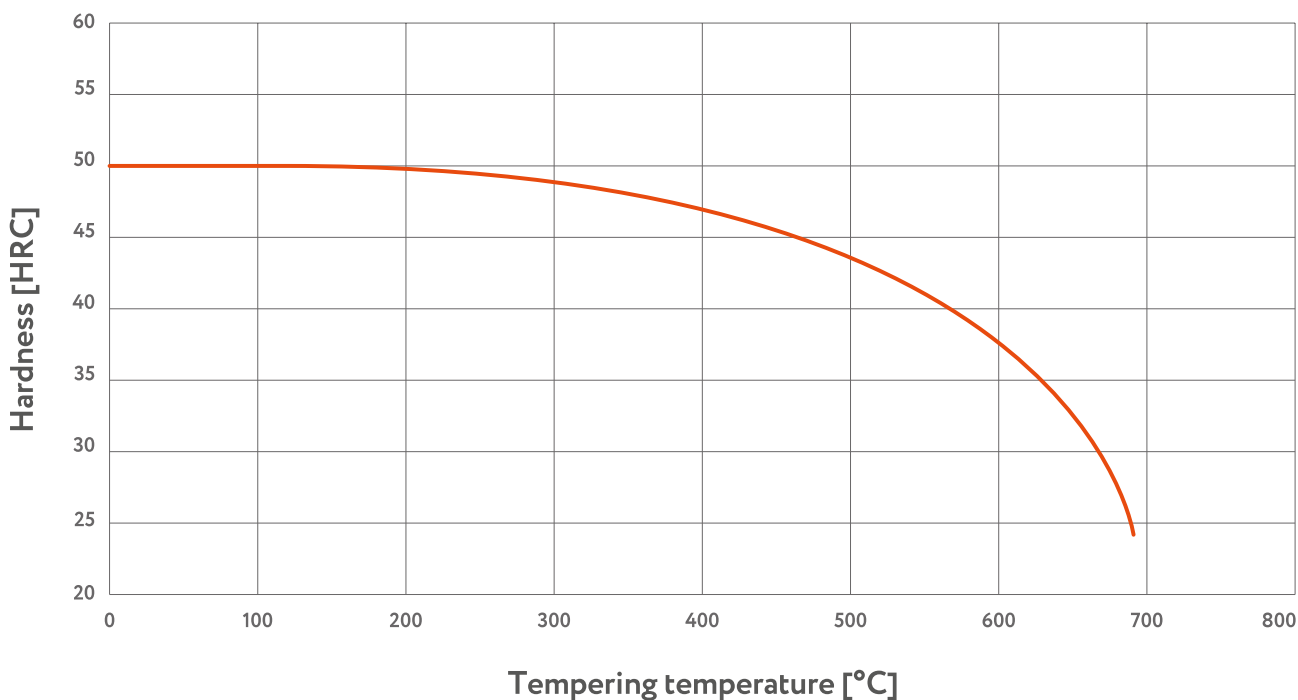


## Mechanical properties



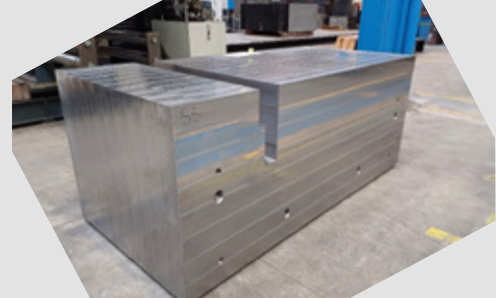
## Tempering curve

Average values of sample dia. 25x50 mm long, hardened at 880°C in oil.



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PLASTIC MOULD STEEL



## Polishing Range

Code	Type of polishing	Application	Roughness $\mu\text{m}$
VR01	Silicon Carbide Grinding Paper "100"	Technical polishing of internal parts or stamp	RA 0.69-RZ 4.62
VR03	Silicon Carbide Grinding Paper "150"	Technical polishing of extraction parts	RA 0.57-RZ 3.62
VR05	Silicon Carbide Grinding Paper "240"	Technical polishing of stamp and mold	RA 0.39-RZ 3.40
VR07	Silicon Carbide Grinding Paper "400"	Technical polishing of mold product to paint	RA 0.23-RZ 2.28
VR09	Silicon Carbide Grinding Paper "800"	Pre-Lapping	RA 0.21-RZ 1.22
VR011	Polishing Pads 320 Sisal	Polishing from Pads 320 and Sisal	RA 0.06-RZ 0.34
VR13	Dry Diamond Polishing Pads 400 (3 $\mu\text{m}$ )	Lapping of paint pieces (frompads 400)	RA 0.03-RZ 0.12
VR15	Dry Diamond Polishing Pads (Lapping 1 $\mu\text{m}$ )	Lapping of transparent pieces	RA 0.02-RZ 0.10
VR17	Optical lapping 1/4 $\mu\text{m}$	Special lapping of transparent pieces (glasses lens)	

Roughness tolerance: RA +/- 10% from VR01 to VR09 and +/- 15% from VR11 to VR17 - RZ +/- 10% from VR01 to VR09 and +/- 15% from VR11 to VR17



## Texturing Samples

Texturing performed by Standex Mold-tech with patterns Standex MT 9086, MT 9055 and 9083

