ES Maximum 500

Name:
X 37 CrMoV 5-1

Material No.:
1.2343 ESR

Typical analysis in %:

C	Si	Cr	Mo	V
0.37	1.0	5.3	1.3	0.4

As-supplied condition:
Structurally treated to max. 229 HB (770 N/mm²)

Characteristics:
Good high temperature strength, resistance to thermal shock and high temperature wear with the very highest toughness, a combination of characteristics to match the highest requirements encountered in use; compliance with all requirements of SEP 1614, VDG and the DGM conditions of delivery for extrusion tools.

General fields of application:
For particularly high requirements for homogeneity and toughness for pressure die casting tools for light metal; tools for forging machines, dies, die inserts, extrusion tools, punches and press dies for light metal processing, tools for screw, nut and bolt manufacturing, hot shearing knives, highly polished plastic moulds.

Special note:
ES Maximum 500 is manufactured using the latest secondary metallurgy techniques. Numerous complementary quality improvement processes result in an extremely homogenous hot work steel with isotropic properties.

Heat treatment data:

	Temperature	*Duration*	*Cooling*
Soft annealing	800 - 840 °C	2 - 5 h	furnace
Stress-relief annealing	600 - 650 °C	min. 4 h	furnace
Hardening	1000 - 1040 °C	Group II	oil, air, WB 500 °C
Tempering	530 - 680 °C	min. 2 h	still air
	3 x, see tempering curve	depending on cross section	

Physical characteristics:

Coefficient of thermal expansion: between 20 °C and:

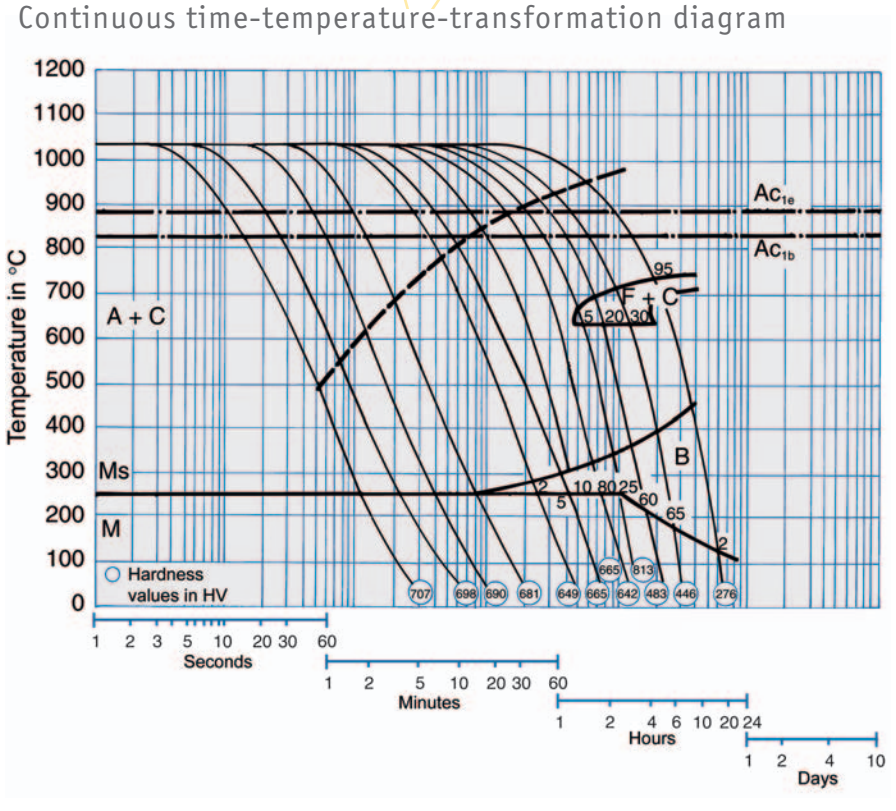
10^{-6} x m	100	200	300	400	500	600	700 °C
m x K	10.8	11.4	11.8	12.0	12.4	12.8	12.9

Thermal conductivity:

W	20	350	700 °C
m x K	25.3	27.2	30.5

Normal working hardness: 30 - 53 HRC (1000 - 1850 N/mm²)

Continuous time-temperature-transformation diagram



Tempering curve