

ES 265 W ESR

Name:
X 38 CrMoV 5-3

Material No.:
1.2367 ESR

Typical analysis in %:

C	Si	Mn	Cr	Mo	V
0.38	0.4	0.5	5.0	3.0	0.6

As-supplied condition:

Structurally treated to max. 229 HB
(770 N/mm²)

Characteristics:

CrMoV alloyed hot work steel with excellent high temperature strength and good high temperature toughness.

General fields of application:

Extrusion tools, die inserts, injection moulds, mandrels

Special note:

We recommend triple tempering to increase toughness. Preheating before bringing into operation to at least 300 °C is a mandatory requirement.

Heat treatment data:

	Temperature	Duration	Cooling
Soft annealing	820 - 840 °C	4 - 6 h	furnace
Stress-relief annealing	600 - 650 °C	min. 4 h	furnace
Hardening	1030 - 1060 °C	Group II	oil, air WB 500-550 °C
Tempering	500 - 700 °C see tempering curve	min. 2 h depending on cross section	still air

Physical characteristics:

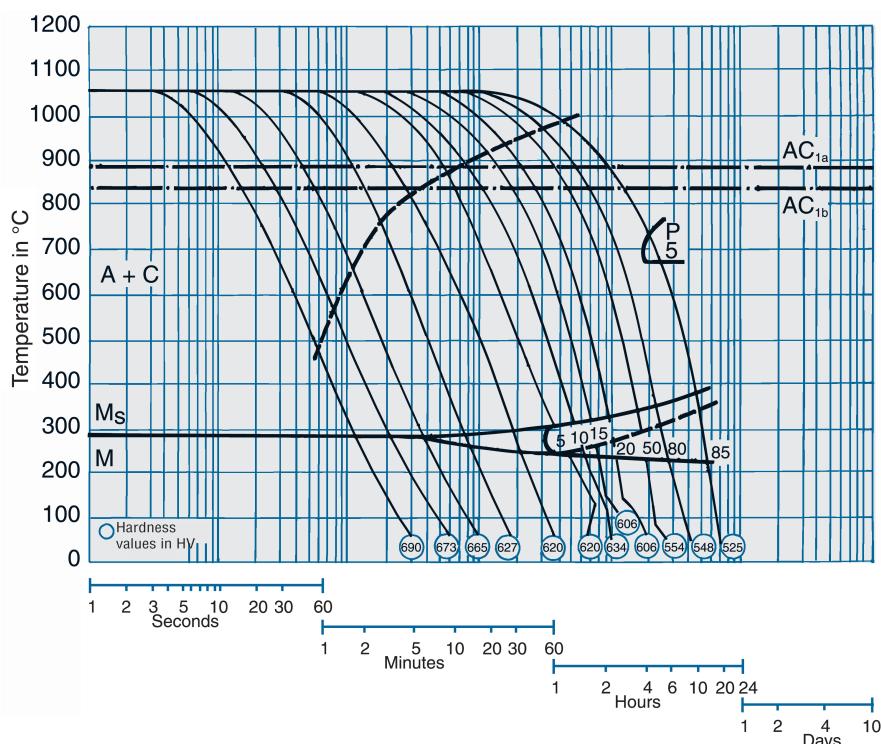
Coefficient of thermal expansion: between 20 °C and:

$10^{-6} \times m$	100	200	300	400	500	600	700 °C
$m \times K$	11.9	12.5	12.6	12.8	13.1	13.3	13.5

Thermal conductivity:	W	20	350	700 °C
	$m \times K$	36.4	32.2	27.5

Normal working hardness: 35 - 52 HRC

Continuous time-temperature-transformation diagram



Tempering curve

