

# 1.2367

**Name:**  
X 38 CrMoV 5-3

**Material No.:**  
1.2367

**Typical analysis in %:**

C	Si	Mn	Cr	Mo	V
0.38	0.4	0.4	5.0	2.8	0.65

**As-supplied condition:**  
Soft-annealed to max. 229 HB  
(773 N/mm<sup>2</sup>)

**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:**  
**Also supplied in ESR grade for the highest requirements.**

## 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 3 x, see tempering curve	min. 2 h depending on cross section	still air

## Physical characteristics:

**Coefficient of thermal expansion:** between 20 °C and:

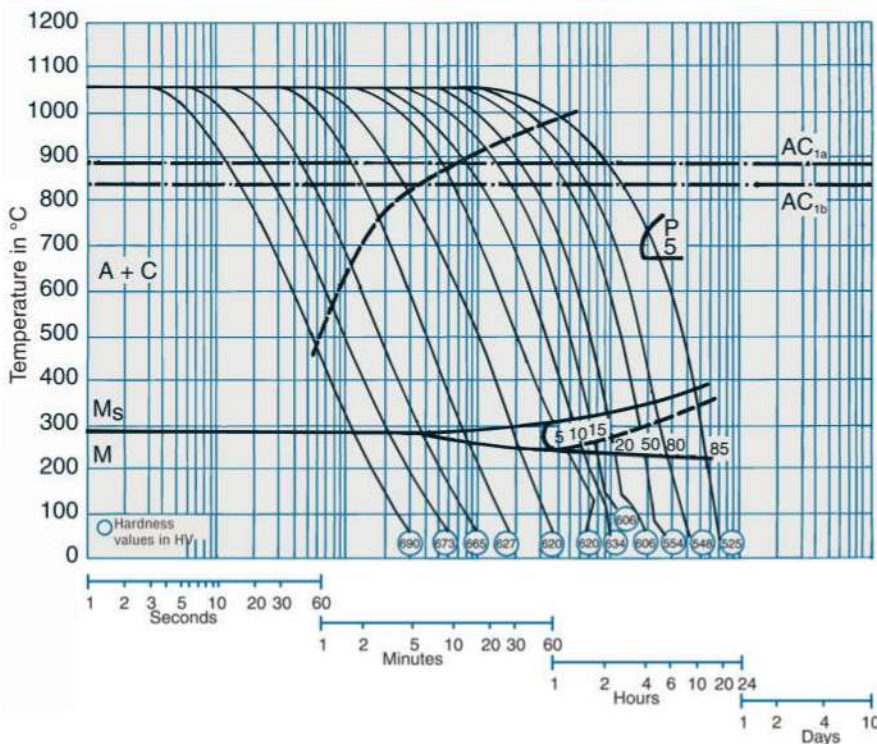
10 <sup>-6</sup> x m	100	200	300	400	500	600
m x K	11.9	12.5	12.6	12.8	12.9	13

**Thermal conductivity:**

W	20	350	700 °C
m x K	36.4	32.2	27.5

**Normal working hardness:** 35 - 52 HRC

## Continuous time-temperature-transformation diagram



## Tempering curve

