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Nazwa gatunku: NMV/1.2842/90MnCrV8

Nazwa: COLD WORK TOOL STEEL

NORM: ISO 4957

APPLICATION

Steel susceptible to tools and measuring tools which are resistant to abrasion, guide strips, ejector pins, gauges; cutting, punching, stamping tools; long screw taps, threading dies, screw cutting jaws, broaches, circular cutters for paper and leather, cutting plates with complex shapes for blanking dies, wood processing mills, reamers, measures tools etc.

CHEMICAL COMPOSITION:

C	Si	Mn	P	S	Cr	Mo	W	V	Co	Ni
0,85-0,95	0,10-0,40	1,80-2,20	Max 0,030	Max 0,030	0,20-0,50	-	-	0,05-0,20	-	-

MECHANICAL PROPERTIES:

Hardness after	Tempering °C	Symbol	Value
Soft annealing	-	HB	≤229
Quenching with 790 °C in oil	-	HRC	65
Quenching with 790 °C in oil and tempering	180	HRC	≥60
	200	HRC	61.5
	250	HRC	59.5
	350	HRC	57
	400	HRC	54
	450	HRC	51
	500	HRC	48
550	HRC	44	

PHYSICAL PROPERTIES:

Property	Unit	Value
Density, ρ	$\text{g}\cdot\text{cm}^{-3}$	7.85
Thermal expansion, $\alpha_{20-100^\circ\text{C}}$	K^{-1}	$11.7\cdot 10^{-6}$
Thermal conductivity, $\lambda_{20^\circ\text{C}}$	$\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$	25

Technological treatment processes:

Technological treatment processes		Possible application	Temperature, °C	
Hot forming	Forging	+	1000-850	
	Rolling	+	1000-850	
Treatment	Heat treatment	Quenching	+	780-800
		Tempering	+	170-190
	Precipitation strengthening	Supersaturation	-	-
		Ageing	-	-
	Annealing	Soft annealing	+	680-700
		Stress relieving	+	600-680
Thermochemical treatment	Nitriding	-	-	
	Other	-	-	

INTERNATIONAL STEEL GRADES:

ISO		CEN		Russia	
90MnCrV8	ISO 4957:2004	90MnCrV8	ISO 4957:2004	9G2F	GOST 5950-73
US		Japan		China	
O2	ASTM A 681-91	-	-	9MnV	GB 1299-85