

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 38KH2NM (38X2HM).

Grade :	38KH2NM (38X2HM)
Substitute:	34XH1M, 40XH2MA
Classification :	Alloy structural steel
Equivalent grades:	Is absent

Chemical composition in % for grade 38KH2NM (38X2HM)

C	Si	Mn	Ni	S	P	Cr	Mo
0.32 - 0.42	0.17 - 0.37	0.5 - 0.8	0.6 - 0.9	max 0.03	max 0.03	1.8 - 2.3	0.2 - 0.3

Mechanical properties under T=20°C for grade 38KH2NM (38X2HM)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Forging	to 300		830	680	12	38	500	Guenching 850 - 870°C, Drawing 590 - 620°C,
Forging	300 - 500		740	580	12	35	450	Guenching 850 - 870°C, Drawing 590 - 620°C,
Forging	500 - 800		700	530	10	30	400	Guenching 850 - 870°C, Drawing 590 - 620°C,

Brinell hardness for 38KH2NM (38X2HM) (normalize) ,	HB 10 ⁻¹ = 207 - 235 MPa
Brinell hardness for 38KH2NM (38X2HM) (quenching, tempering) ,	HB 10 ⁻¹ = 237 - 321 MPa

Technological properties for grade 38KH2NM (38X2HM)

Flakes :	predisposed
Temper brittleness:	predisposed

Specification : Mechanical properties :

σ_B	- Tensile strength , [MPa]
σ_T	- Yield stress , [MPa]
δ_5	- Specific elongation at fracture , [%]
ψ	- Reduction of area , [%]
KCU	- Impact strength , [kJ / m ²]
HB	- Brinell hardness , [MPa]

Weldability :

- without limitations** - welding is done without heating and subsequent heat treating
- limited weldability** - welding is possible under heating up to 100-120 grade and subsequent heat treating
- hard weldability** - obtaining the quality welding needs the additional operations: heating up to 200-300 grade; the heat treating is annealing

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more than 2500 steels and alloys (stainless steel, alloy steel, carbon steel, structural steel, tool steel, cast iron, aluminum alloy, titanium alloy, copper alloy, nickel alloy, magnesium alloy and others).
Helpful for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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