

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 38KHGN (38XГH).

Grade :	38KHGN (38XГH)
Substitute:	38XГHM
Classification :	Alloy structural steel
Equivalent grades:	Is absent

Chemical composition in % for grade 38KHGN (38XГH)

C	Si	Mn	Ni	S	P	Cr	Cu
0.35 - 0.43	0.17 - 0.37	0.8 - 1.1	0.7 - 1	max 0.035	max 0.035	0.5 - 0.8	max 0.3

Temperature of critical points for grade 38KHGN (38XГH).

$Ac_1 = 725$, $Ac_3(Ac_m) = 830$, $Ar_3(Arc_m) = 690$, $Ar_1 = 600$, $Mn = 320$

Mechanical properties under $T=20^{\circ}C$ for grade 38KHGN (38XГH)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m^2	-
Bar, GOST 4543-71	$\varnothing 25$		780	685	12	45	980	Guenching and drawing

Brinell hardness for 38KHGN (38XГH) (annealing), GOST 4543-71

$HB 10^{-1} = 229 \text{ MPa}$

Technological properties for grade 38KHGN (38XГH)

Weldability:	hard weldability.
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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