

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 37KH12N8G8MFB (37X12H8Г8МФБ).

Grade :	37KH12N8G8MFB (37X12H8Г8МФБ) (4X12H8Г8МФБ ЭИ481)
Classification :	High alloy high-temperature steel
Equivalent grades:	Go here

Chemical composition in % for grade 37KH12N8G8MFB (37X12H8Г8МФБ)

C	Si	Mn	Ni	S	P	Cr	Mo	V	Nb	Cu
0.34 - 0.4	0.3 - 0.8	7.5 - 9.5	7 - 9	max 0.03	max 0.035	11.5 - 13.5	1.1 - 1.4	1.25 - 1.55	0.25 - 0.45	max 0.3

Mechanical properties under T=20°C for grade 37KH12N8G8MFB (37X12H8Г8МФБ)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
			1000	600	20	25	350	Heating 1140 - 1160°C, 1h, Cooling water, Ageing 660 - 790°C, 10 - 16h, air,

Brinell hardness for 37KH12N8G8MFB (37X12H8Г8МФБ) (annealing), Bar GOST 18907

HB 10⁻¹ = 269 MPa

Technological properties for grade 37KH12N8G8MFB (37X12H8Г8МФБ)

Weldability:	limited weldability.
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Physical properties for grade 37KH12N8G8MFB (37X12H8Г8МФБ)

T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹
Grade	MPa	1/Grade	Watt/(m·Grade)	kg/m ³	J/(kg·Grade)	Ohm·m
20	1.74			7850		740
100		15.9	17.2			850
200	1.6	17.1	18.5			900
300	1.5	18.2	19.7			950
400	1.43	19.2	21.4			1010
500	1.35	20.3	23			1100
600	1.28	21.2	24.8			1150
700	1.25	22.2	25.9			1200
800		23.2	27.2			
900		24.2	29.3			
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 37KH12N8G8MFB (37X12H8Г8МФБ)

Warning! Indicated both exact and nearest equivalents.

China
GB
GH2036

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]

Physical properties :

T	- Test temperature , [Grade]
E	- Young modulus , [MPa]
α	- Coefficient of linear expansion (range 20° - T) , [1/Grade]
λ	- Termal (heat) condition coefficient , [Watt/(m·Grade)]
ρ	- Density , [kg/m ³]
C	- Specific heat (range 20° - T), [J/(kg·Grade)]
R	- Electrical resistance , [Ohm·m]

Weldability :

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

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

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