

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 30KHGT (30XГТ).

Grade :	30KHGT (30XГТ)
Substitute:	18XГТ, 20XH2M, 25XГТ, 12X2H4A
Classification :	Alloy structural steel
Equivalent grades:	Go here

Chemical composition in % for grade 30KHGT (30XГТ)

C	Si	Mn	Ni	S	P	Cr	Ti	Cu
0.24 - 0.32	0.17 - 0.37	0.8 - 1.1	max 0.3	max 0.035	max 0.035	1 - 1.3	0.03 - 0.09	max 0.3

Temperature of critical points for grade 30KHGT (30XГТ).

$A_{c1} = 770$, $A_{c3}(A_{cm}) = 825$, $A_{r3}(A_{rcm}) = 740$, $A_{r1} = 665$

Mechanical properties under T=20°C for grade 30KHGT (30XГТ)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar, GOST 4543-71			1470	1275	9	40	590	Guenching and drawing
Forging	to 100		835	685	13	42	590	Guenching and drawing

Brinell hardness for 30KHGT (30XГТ) (annealing), GOST 4543-71

HB 10 ⁻¹ = 229 MPa

Technological properties for grade 30KHGT (30XГТ)

Weldability:	limited weldability.
Flakes :	not predisposed
Temper brittleness:	predisposed

Physical properties for grade 30KHGT (30XГТ)

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	2.12		36			
100	2.02	10.5	37		495	

200	1.95	12	36		508	
300	1.89	12.7	34		525	
400	1.74	13.3	33		537	
500	1.69	13.8	31		567	
600	1.57	14	29		588	
700	1.38		28		626	
800	1.32		28		705	
T	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$

Equivalent steels for grade 30KHGT (30XГТ)

Warning! Indicated both exact and nearest equivalents.

Germany	Czechia
DIN, WNr	CSN
30MnCrTi	14231

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 / m²]
- 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 - Thermal (heat) condition coefficient , [Watt/(m·Grade)]
- ρ - Density , [kg/m³]
- 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 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).
Helpfull for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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