

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 30G (30Г).

Grade :	30G (30Г)
Substitute:	35, 40Г
Classification :	Alloy structural steel
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Chemical composition in % for grade 30G (30Г)

C	Si	Mn	Ni	S	P	Cr	Cu
0.27 - 0.35	0.17 - 0.37	0.7 - 1	max 0.3	max 0.035	max 0.035	max 0.3	max 0.3

Temperature of critical points for grade 30G (30Г).

$Ac_1 = 723$, $Ac_3(Ac_m) = 810$, $Ar_3(Arc_m) = 785$, $Ar_1 = 680$, $Mn = 870$

Mechanical properties under T=20°C for grade 30G (30Г)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar, GOST 4543-71	Ø 25		540	315	20	45	780	Guenching 860°C, water, Drawing 600°C, air,

Brinell hardness for 30G (30Г) (annealing), GOST 4543-71	HB 10 ⁻¹ = 197 MPa
Brinell hardness for 30G (30Г) (normalize), Sheet trick GOST 1577-93	HB 10 ⁻¹ = 217 MPa
Brinell hardness for 30G (30Г) (annealing), Sheet trick GOST 1577-93	HB 10 ⁻¹ = 187 MPa

Technological properties for grade 30G (30Г)

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

Physical properties for grade 30G (30Г)

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	2.04			7810		

100		12.6	76		470	
200		13.9	65		483	
300		14.6	53		546	
400		15	44		601	
500		15.5	38		764	
600		15.6				
700		14.8				
T	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$

Equivalent steels for grade 30G (30Г)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Belgium	Spain	China	Bulgaria	Hungary	Poland
-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	NBN	UNE	GB	BDS	MSZ	PN
1030	1.1170	SCMn1	20M5	150M19	1.1170	28Mn6	28Mn6	28Mn6	30Mn	28Mn6	28Mn6	30G2
1330	1.1170		28Mn6	150M28	28Mn6	C28Mn			30Mn2	30G		
G10300	28Mn4			28Mn6					ML30Mn			
G10330	28Mn6											
G13300	30Mn4											

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).
Helpful for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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