

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 35G2 (35Г2).

Grade :	35G2 (35Г2)
Substitute:	40X
Classification :	Alloy structurall steel
Equivalent grades:	Go here

Chemical composition in % for grade 35G2 (35Г2)

C	Si	Mn	Ni	S	P	Cr	Cu
0.31 - 0.39	0.17 - 0.37	1.4 - 1.8	max 0.3	max 0.035	max 0.035	max 0.3	max 0.3

Temperature of critical points for grade 35G2 (35Г2).

$Ac_1 = 718$, $Ac_3(Ac_m) = 804$, $Ar_3(Arc_m) = 727$, $Ar_1 = 677$, $Mn = 340$

Mechanical properties under T=20°C for grade 35G2 (35Г2)

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		620	365	13	40		Guenching 870°C, oil, Drawing 650°C, air,
Forging	100 - 300		530	275	17	38	340	Normalizing

Brinell hardness for 35G2 (35Г2) (annealing) , GOST 4543-71

HB 10 ⁻¹ = 207 MPa

Technological properties for grade 35G2 (35Г2)

Flakes :	predisposed
Temper brittleness:	predisposed

Physical properties for grade 35G2 (35Г2)

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			7790		
100			40			
200			38			

300			37			
400			36			
500			35			
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 35G2 (35Г2)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	Spain	China	Sweden	Bulgaria	Hungary	Romania	Czechia	South Korea
-	DIN, WNr	JIS	AFNOR	BS	UNE	GB	SS	BDS	MSZ	STAS	CSN	KS
1137	1.1167	SCMn3	35M5	150M36	36Mn5	35Mn2	2120	35G2	Ao35Mn6	35Mn16	14240	SCMn3
1139	1.1170	SMn438	40M5		36Mn6	Z640Mn		35GL		T35Mn14	422715	SMn438
1330	1.5067	SMn438(H)			F.1203							SMn438H
1335	35Mn5	SMn443			F.8212							
1335H	35S20	SUM41										
G11390	36Mn5											
G13350	GS36Mn5											
G15410												
Gr.1340H												
H13350												
H15410												

Specification :

Mechanical properties :

- σ_B - Tensile strength , [MPa]
- σ_T - Yield stress , [MPa]
- δ₅ - 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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