

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 14G2AF (14Г2АФ).

Grade :	14G2AF (14Г2АФ)
Substitute:	16Г2АФ
Classification :	Low alloy structural steel for welding construct
Equivalent grades:	Go here

Chemical composition in % for grade 14G2AF (14Г2АФ)

C	Si	Mn	Ni	S	P	Cr	V	N	Cu	As
0.12 - 0.18	0.3 - 0.6	1.2 - 1.6	max 0.3	max 0.04	max 0.035	max 0.4	0.07 - 0.12	0.015 - 0.025	max 0.3	max 0.08

Mechanical properties under T=20°C for grade 14G2AF (14Г2АФ)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet, GOST 19282-73	5 - 9		550	400	20			
Rolled stock	4		550		20			Normalizing

Technological properties for grade 14G2AF (14Г2АФ)

Weldability:	without limitations.
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Physical properties for grade 14G2AF (14Г2АФ)

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						
100	1.96		46			
200			44			
300	1.94		42			
400	1.86		40			
500	1.77		36			
600	1.67		33			
700	1.48		29			
800	1.24					
900	1.06					

T	E 10⁻⁵	α 10⁶	λ	ρ	C	R 10⁹
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Equivalent steels for grade 14G2AF (14Г2АФ)

Warning! Indicated both exact and nearest equivalents.

China	Czechia
GB	CSN
15MnVN	13220

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** - Termal (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 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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