

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 60S2N2A (60C2H2A).

Grade :	60S2N2A (60C2H2A)
Substitute:	60C2A, 60C2XA
Classification :	Spring structural steel
Equivalent grades:	Go here

Chemical composition in % for grade 60S2N2A (60C2H2A)

C	Si	Mn	Ni	S	P	Cr	Cu
0.56 - 0.64	1.4 - 1.8	0.4 - 0.7	1.4 - 1.7	max 0.025	max 0.025	max 0.3	max 0.2

Temperature of critical points for grade 60S2N2A (60C2H2A).

$Ac_1 = 765$, $Ac_3(Ac_m) = 780$

Mechanical properties under T=20°C for grade 60S2N2A (60C2H2A)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Steel, GOST 14959-79			1470	1325	8	30		Guenching 870°C, oil, Drawing 470°C,

Brinell hardness for 60S2N2A (60C2H2A) (annealing), GOST 14959-79	HB 10 ⁻¹ = 269 MPa
Brinell hardness for 60S2N2A (60C2H2A) (without heat treatment), GOST 14959	HB 10 ⁻¹ = 302 MPa

Technological properties for grade 60S2N2A (60C2H2A)

Weldability:	is not used.
Flakes :	predisposed
Temper brittleness:	not predisposed

Physical properties for grade 60S2N2A (60C2H2A)

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	1.91					

Equivalent steels for grade 60S2N2A (60C2H2A)

Warning! Indicated both exact and nearest equivalents.

Bulgaria
BDS
60S2N2A

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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