

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 55S2A (55C2A).

Grade :	55S2A (55C2A)
Classification :	Spring structural steel
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Chemical composition in % for grade 55S2A (55C2A)

C	Si	Mn	Ni	S	P	Cr	Cu
0.53 - 0.58	1.5 - 2	0.6 - 0.9	max 0.25	max 0.025	max 0.025	max 0.3	max 0.2

Temperature of critical points for grade 55S2A (55C2A).

$Ac_1 = 775$, $Ac_3(Ac_m) = 840$

Mechanical properties under T=20°C for grade 55S2A (55C2A)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar, GOST 14959	to Ø 80		1275	1177	6	30		Guenching 870°C, oil, Drawing 470°C,

Brinell hardness for 55S2A (55C2A) (without heat treatment), GOST 14959	HB 10⁻¹ = 285 MPa
Brinell hardness for 55S2A (55C2A) (heat treatment), Rolled stock GOST 14959-79	HB 10⁻¹ = 241 MPa

Technological properties for grade 55S2A (55C2A)

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

Equivalent steels for grade 55S2A (55C2A)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Bulgaria
-	DIN,WNr	BDS
9255	55Si7	55S2A
G92550		

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 / m ²]
HB	- Brinell hardness , [MPa]

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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