

Database of Steel and Alloy (Marochnik)

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[Home](#) [European steel grades](#) [Steel and Alloy](#) [Search](#) [Equivalent grades](#) [Grading](#) [GOST Standard](#) [Contacts](#)

YOU HERE: [Steel and Alloy](#) -> [Structural steel](#)

Characteristics for grade St2sp (Cт2сп).

Grade :	St2sp (Cт2сп)
Classification :	Normal quality structural carbon steel
Equivalent grades:	Go here

Chemical composition in % for grade St2sp (Cт2сп)

C	Si	Mn	Ni	S	P	Cr	N	Cu	As
0.09 - 0.15	0.15 - 0.3	0.25 - 0.5	max 0.3	max 0.05	max 0.04	max 0.3	max 0.008	max 0.3	max 0.08

Mechanical properties under T=20°C for grade St2sp (Cт2сп)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe, GOST 8696-74			334	225	24			
Pipe, GOST 10705-80			333	206	24			
Rolled stock, GOST 535-2005			335-430	195-225	29-32			
Sheet trick, GOST 14637-89			330-430	195-225	29-32			
Wire rods , GOST 30136-95			420-470			60		

Brinell hardness for St2sp (Cт2сп) ,	HB 10⁻¹ = 116 MPa
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Technological properties for grade St2sp (Cт2сп)

Weldability:	without limitations.
Flakes :	not predisposed
Temper brittleness:	not predisposed

Physical properties for grade St2sp (Cт2сп)

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				7850		

Equivalent steels for grade St2sp (Cт2сп)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	France	England	European	Italy	China	Bulgaria	Hungary	Poland	Romania	Czechia
-	DIN,WNr	AFNOR	BS	EN	UNI	GB	BDS	MSZ	PN	STAS	CSN
A192 K02502	1.0034 RSt34-2 S185 St35 St37-2	A34-2 A34-2NE	1449-34/20HR, 34/20HS S360	1.0034 1.0038 E195 S235JR	Fe330BFN	Q215 Q215A Q215A-Z Q215B Q215B-Z	ASt0 BSt2sp WSt2ps WSt2sp	Fe310O	St0S	OL34.1	10000

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 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

[Top](#)

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