

Database of Steel and Alloy (Marochnik)

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Characteristics for grade St5sp (Cr5cn).

Grade :	St5sp (Cr5cn)
Classification :	Normal quality structural carbon steel
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Chemical composition in % for grade St5sp (Cr5cn)

C	Si	Mn	Ni	S	P	Cr	N	Cu	As
0.28 - 0.37	0.15 - 0.3	0.5 - 0.8	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 St5sp (Cr5cn)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe, GOST 8731-87			490	274	17			
Rolled stock, GOST 535-2005			490-630	255-295	17-20			
Sheet trick, GOST 14637-89			490-630	255-285	17-20			
Rebar, GOST 5781-82			490	295	19			

Brinell hardness for St5sp (Cr5cn) ,	HB 10⁻¹ = 170 MPa
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Technological properties for grade St5sp (Cr5cn)

Weldability:	limited weldability.
Flakes :	not predisposed
Temper brittleness:	not predisposed

Physical properties for grade St5sp (Cr5cn)

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 St5sp (Cr5cn)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Belgium	Spain	China	Sweden	Bulgaria	Hungary	Poland	Romania	Czechia	Austria	Switzerland	South Korea	Inter
-	DIN,WNr	JIS	AFNOR	BS	EN	UNI	NBN	UNE	GB	SS	BDS	MSZ	PN	STAS	CSN	ONORM	SNV	KS	ISO
A570(50) A572(50) K02305 K02507	1.0050 E295 Fe490-2 St50-2	SS490 SS50	A50-2 E295	4360-50B E295 Fe490-2FN	1.0050 1.0060 E295 E335 Fe50-2FN Fe50-3FN	E295 Fe490	FE490-2FN	A490-2 E295 Fe490-2FN	Q275 Q345C	1550 2172	AST5 E295 WSt5ps WSt5sp	E295 Fe490-2	MS15 St5	OL50.1	11500	St50F	St50-2	SS490	E355-C Fe490 Fe510-C

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]

Physical properties :

T	- Test temperature , [Grade]
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E - Young modulus , [MPa]

α - Coefficient of linear expansion (range $20^{\circ} - T$) , [1/Grade]

λ - Thermal (heat) condition coefficient , [Watt/(m·Grade)]

ρ - Density , [kg/m³]

C - Specific heat (range $20^{\circ} - T$) , [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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