

Database of Steel and Alloy (Marochnik)

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Characteristics for grade St3ps (Cr3nc).

Grade :	St3ps (Cr3nc)
Classification :	Normal quality structural carbon steel
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Chemical composition in % for grade St3ps (Cr3nc)

C	Si	Mn	Ni	S	P	Cr	N	Cu	As
0.14 - 0.22	0.05 - 0.15	0.4 - 0.65	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 St3ps (Cr3nc)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe, GOST 8696-74			372	245	23			
Pipe, GOST 10705-80			372	225	22			
Rolled stock, GOST 535-2005			370-480	205-245	23-26			
Sheet trick, GOST 14637-89			370-480	205-245	23-26			
Rebar, GOST 5781-82			373	235	25			
Wire rods , GOST 30136-95			490-540			60		

Brinell hardness for St3ps (Cr3nc) ,	HB 10 ⁻¹ = 131 MPa
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Technological properties for grade St3ps (Cr3nc)

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

Physical properties for grade St3ps (Cr3nc)

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 St3ps (Cr3nc)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Belgium	Spain	China	Sweden	Bulgaria	Hungary	Poland	Romania	Czechia	Finland	Inter
-	DIN,WNr	JIS	AFNOR	BS	EN	UNI	NBN	UNE	GB	SS	BDS	MSZ	PN	STAS	CSN	SFS	ISO
A284Gr.D	1.0038	SS400	E24-2NE	1449-	Fe37-3FN	Fe360B	FE360BFN	AE235BFN	Q235	1312	BS13ps	Fe235B/FN	St3SY	OL37.2	11373	FORM300H	E235-
A570(36)	1.0116		E24-3	27/23CR	Fe37-3FU	Fe360BFN	FE360BFU	AE235BFU	Q235A	1313	BS13sp	Fe235D	St3W		11375		B
A573Gr.58	Fe360B		E24-4	1449-	Fe37B1FN	Fe360C	FED1FF	AE235D	Q235A-		Ew-08AA	S235J2G3			11378		Fe360-
A611Gr.C	Fe360D1		S235J0	37/23CR	Fe37B1FU	Fe360CFN		Fe360BFN	B		S235J2G3	S235JRG2					B
GradeC	RS137-2		S235J2G3	37/23HR	Fe37B3FN	Fe360D		Fe360BFU	Q235A-		S235JRG2						
K01804	S235J2G3		S235J2G4	40B	Fe37B3FU	Fe360DFF		Fe360D1FF	Z		WSt3ps						
K02001	S235JRG1		S235JRG2	40D	S235J0	Fe37-2		S235J2G3	Q235B		WSt3sp						
K02301	S235JRG2			4360-40B	S235J2G3	S235J0		S235JRG2	Q235B-								
K02502	St37-2			4360-40D	S235JR	S235J2G3			Z								
K02601	US137-2			4449-250	S235JRG2	S235J2G4											
K02702				722M24	S235JRG3	S235JRG2											
				Fe360BFU													
				Fe360D1FF													
				HFS3													
				HFS4													
				HFV3													
				HFV4													
				S235J2G3													
				S235JR													
				S235JRG2													

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]
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/m ³]
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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