

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 08ps (08nc).

Grade :	08ps (08nc)
Substitute:	08
Classification :	High quality structural carbon steel
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Chemical composition in % for grade 08ps (08nc)

C	Si	Mn	Ni	S	P	Cr	Cu	As
0.05 - 0.11	0.05 - 0.17	0.35 - 0.65	max 0.3	max 0.04	max 0.035	max 0.1	max 0.3	max 0.08

Temperature of critical points for grade 08ps (08nc).

$A_{c1} = 732$, $A_{c3}(A_{cm}) = 874$, $A_{r3}(A_{rcm}) = 854$, $A_{r1} = 680$

Mechanical properties under T=20°C for grade 08ps (08nc)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet heat-treatment, GOST 4041-71	4 - 8		270-410		32			
Pipe, GOST 10705-80			314	196	25			
Rolled stock, GOST 10702-78			370		8	60		
Steel cold-drawn , GOST 10702-78			314-412			60		Annealing
Strip, GOST 1577-93	6 - 60		290	175	35	60		Normalizing

Brinell hardness for 08ps (08nc) , Sheet GOST 4041-71	HB 10 ⁻¹ = 109 MPa
Brinell hardness for 08ps (08nc) , Bar GOST 10702-78	HB 10 ⁻¹ = 115 MPa
Brinell hardness for 08ps (08nc) , Rolled stock GOST 10702-78	HB 10 ⁻¹ = 143 MPa
Brinell hardness for 08ps (08nc) (annealing) , Sheet trick GOST 1577-93	HB 10 ⁻¹ = 131 MPa

Technological properties for grade 08ps (08nc)

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

Physical properties for grade 08ps (08nc)

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	2.03					
100	2.06	12.5	60	7846	482	178
200	1.83	13.4	56	7814	498	252
300		14	51	7781	514	341
400		14.5	47	7745	533	448
500		14.9	41	7708	555	575
600		15.1	37	7668	584	725
700		15.3	34	7628	626	898
800			30	7598	695	1073
900			27	7602	703	1124
1000					695	
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 08ps (08nc)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	European	China	Bulgaria	Poland	Czechia	India
-	DIN, WNr	JIS	AFNOR	EN	GB	BDS	PN	CSN	IS
1008 A620 A622 G10080	DC01 DC04 DC04G1 DC04GT DD11 DD13 St12 St13 StW24 UQSt36 UStW23	SPHE	3C	1.0330 DC01	08F	08ps	08Y	11300 11304 11321	O

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)]

P - 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 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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