

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 St3Gps (Ст3Гпс).

Grade :	St3Gps (Ст3Гпс)
Classification :	Normal quality structural carbon steel
Equivalent grades:	Go here

Chemical composition in % for grade St3Gps (Ст3Гпс)

C	Si	Mn	Ni	S	P	Cr	N	Cu	As
0.14 - 0.22	max 0.15	0.8 - 1.1	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 St3Gps (Ст3Гпс)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Roll stock, GOST 535-2005			370-490	205-245	23-26			
Sheet trick, GOST 14637-89			370-490	205-245	23-26			

Technological properties for grade St3Gps (Ст3Гпс)

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

Physical properties for grade St3Gps (Ст3Гпс)

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 St3Gps (Ст3Гпс)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	Inter
-	DIN,WNr	JIS	ISO
Grade42	P275N S235J2G3 S275J2G3 S275JR St44-3G USt37-2G	SM400B SM41B	E235-B Fe360-B

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	- Thermal (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 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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