

Characteristics for grade: 09G2S (09Г2С)

Grade :	09G2S (09Г2С)
Substitute:	09Г2, 09Г2ДТ, 09Г2Т, 10Г2С
Classification :	Structural steel for welding construct

Chemical composition in % for grade 09G2S (09Г2С)

C	Si	Mn	Ni	S	P	Cr	V	N	Cu	As
≤0.12	0.5 - 0.8	1.3 - 1.7	≤0.3	≤0.035	≤0.03	≤0.3	≤0.12	≤0.008	≤0.3	≤0.08

Temperature of critical points for grade 09G2S (09Г2С).

$A_{c1} \equiv 725^{\circ}\text{C}$,	$A_{c3}(A_{c\mu}) \equiv 860^{\circ}\text{C}$,	$A_{r3}(A_{r\mu}) \equiv 780^{\circ}\text{C}$,	$A_{r1} \equiv 625^{\circ}\text{C}$
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Mechanical properties under T=20°C for grade 09G2S (09Г2С)

Assortment	Dimension	Direct.	σ_s	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet, GOST 5520-79			430-490	265-345	21		590-640	
Pipe, GOST 10705-80			490	343	20			
Bars	to 250		430	265	21			

Technological properties for grade 09G2S (09Г2С)

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

Physical properties for grade 09G2S (09Г2С)

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						
100		11.4				
200		12.2				
300		12.6				
400		13.2				
500		13.8				
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 09G2S (09Г2С)

Germany	Japan	China	Bulgaria	Hungary	Romania
DIN, WNr	JIS	GB	BDS	MSZ	STAS
13Mn6 9MnSi5	SB49	12Mn	09G2S	VH2	9SiMn16

Types of delivery of grade 09G2S (09Г2С)

B22 - Graded and shaped rolling

B23 - Sheets and Strips

B33 - Sheets and Strips

B62 - Steel pipes and connecting parts to them

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 - Termal (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 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

09G2S (09Г2С) - Structural steel for welding construct: chemical composition, mechanical and physical properties, hardness

Database of steels and alloys (Marochnik) contains information about chemical composition and properties more then 3000 steels and alloys.

详细联系方式

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