

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 17GS (17ГC).

Grade :	17GS (17ГC)
Substitute:	16ГC
Classification :	Low alloy structural steel for welding construct
Equivalent grades:	Go here

Chemical composition in % for grade 17GS (17ГC)

C	Si	Mn	Ni	S	P	Cr	N	Cu	As
0,14 - 0,2	0,4 - 0,6	1 - 1,4	max 0,3	max 0,04	max 0,035	max 0,3	max 0,008	max 0,3	max 0,08

Temperature of critical points for grade 17GS (17ГC).

$Ac_1 = 745$, $Ac_3(Ac_m) = 870$, $Ar_3(Arc_m) = 790$, $Ar_1 = 680$, $Mn = 380$

Mechanical properties under T=20°C for grade 17GS (17ГC)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet, GOST 5520-79			490-510	335-345	23			
Pipe, GOST 10705-80			490	343	20			

Technological properties for grade 17GS (17ГC)

Weldability:	without limitations.
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Equivalent steels for grade 17GS (17ГC)

Warning! Indicated both exact and nearest equivalents.

Germany	Japan	France	England	Canada	European	Italy	Belgium	Spain	China	Sweden	Bulgaria	Hungary	Poland	Romania	Czechia	Austria	South Korea
DIN, WNr	JIS	AFNOR	BS	HG	EN	UNI	NBN	UNE	GB	SS	BDS	MSZ	PN	STAS	CSN	ONORM	KS
1.0570 Fe510D1 P275N S355J0 S355J2G3 S355J0	SM490A SM490B SM490C SM490YA SM490YB SM520B	E36-3 E36-4 S355J0 S355J2G3 S355K2G3	1449- 50/35HR 1449- 50/35HS 4360-50D 50D	350W 350WT	1.0570 Fe510 Fe52CFN Fe52DFN S355J2G3	Fe510 Fe510B Fe510C Fe510CFN Fe510D FeE420	FE510D1FF	AE355D Fe510D1FF S355J2G3 S355J2G4	16Mn 16MnDR 16MnG 16MnL 16MnR HP345	2132 2133 2134 2174	17GS S355J2G3	45D B50.36 Fe355C/FF S355J2G3	15GA 16G2 18G2AA G355	OL52.3	11483 11523	St510D St52F	STKM16C
St52-3 St52-3G	SM520C SM53C STK490 STKM16C STKR490		CEW5 D1FF ERW5 Fe510 Fe510D1FF S355J2G3 SAW5			S355J0 S355J2G3 S355JR											

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]

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 than 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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