

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 18k (18K).

Grade :	18k (18K)
Classification :	High quality structural carbon steel
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Chemical composition in % for grade 18k (18K)

C	Si	Mn	Ni	S	P	Cr	Cu	As
0.14 - 0.22	0.17 - 0.37	0.55 - 0.85	max 0.3	max 0.04	max 0.04	max 0.3	max 0.3	max 0.08

Mechanical properties under T=20°C for grade 18k (18K)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet, GOST 5520-79			430-520	255-275	20		590	

Technological properties for grade 18k (18K)

Weldability:	without limitations.
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Equivalent steels for grade 18k (18K)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Sweden	Bulgaria	Hungary	Poland	Czechia	Austria	Australia
-	DIN,WNr	JIS	AFNOR	BS	EN	UNI	SS	BDS	MSZ	PN	CSN	ONORM	AS
K02100	1.0436	SG325	A48AP	151-430	1.0481	C18	2103	18K	A45.47	K18	11444	17Mn4KW	7-430R
K02704	ASt45	SPV315	A48FP	161-430	P295GH	Fe510-			KL3	St44K	11478		
K02707	HIII	STB410		223-460		1KG					11481		
K02800	P285NH	STPT480		430LT		Fe510-					12022		
K03006	P295GH					1KW							
X46	St45.8												

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]

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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