

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 30KH (30X).

Grade :	30KH (30X)
Substitute:	30XPA, 35X, 35XPA
Classification :	Alloy structural steel
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Chemical composition in % for grade 30KH (30X)

C	Si	Mn	Ni	S	P	Cr	Cu
0.24 - 0.32	0.17 - 0.37	0.5 - 0.8	max 0.3	max 0.035	max 0.035	0.8 - 1.1	max 0.3

Temperature of critical points for grade 30KH (30X).

$Ac_1 = 740$, $Ac_3(Ac_m) = 815$, $Ar_1 = 670$

Mechanical properties under T=20°C for grade 30KH (30X)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
, GOST 4543-71			880	685	12	45	690	Guenching and drawing

Brinell hardness for 30KH (30X) (annealing), GOST 4543-71	HB 10 ⁻¹ = 187 MPa
Brinell hardness for 30KH (30X) (cold-worked), GOST 4543-71	HB 10 ⁻¹ = 241 MPa
Brinell hardness for 30KH (30X) , Bar GOST 10702-78	HB 10 ⁻¹ = 170 MPa

Technological properties for grade 30KH (30X)

Weldability:	limited weldability.
Flakes :	predisposed
Temper brittleness:	predisposed

Physical properties for grade 30KH (30X)

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	2.08			7820		210

100	2.11	12.4	46.5	7800	482	259
200		12.9	44.4	7770	496	330
300	1.97	13.3	42.3	7740	513	417
400		13.8	38.5	7700	532	517
500	1.75	14.1	35.6	7670	555	636
600		14.5	31.9	7630	583	778
700		14.8	28.8	7590	620	934
800			26	7610	703	1106
900			26.7	7560	687	1146
1100				7470	670	1205
1200				7430	670	1230
T	$E \cdot 10^{-5}$	$\alpha \cdot 10^6$	λ	ρ	C	$R \cdot 10^9$

Equivalent steels for grade 30KH (30X)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	England	European	Italy	Spain	China	Bulgaria	Poland
-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	UNE	GB	BDS	PN
5130	1.7030	SCr2	28C4	28Cr4	1.7030	34Cr4	28Cr4	30Cr	30Ch	30H
5130H	28Cr4	SCr430	32C4	530A30	1.7033					
5130RH	34Cr4	SCr430H	32C4FF		28Cr4					
G51300			34Cr4		34Cr4					

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)]
- 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 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

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