

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 30KHM (30XM).

Grade :	30KHM (30XM)
Substitute:	35XM, 35XPA
Classification :	Relaxation-resistant steel
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Chemical composition in % for grade 30KHM (30XM)

C	Si	Mn	Ni	S	P	Cr	Mo	Cu
0.26 - 0.34	0.17 - 0.37	0.4 - 0.7	max 0.3	max 0.035	max 0.035	0.8 - 1.1	0.15 - 0.25	max 0.3

Temperature of critical points for grade 30KHM (30XM).

$Ac_1 = 757$, $Ac_3(Ac_m) = 807$, $Ar_3(Arc_m) = 763$, $Ar_1 = 693$
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Mechanical properties under T=20°C for grade 30KHM (30XM)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Bar, GOST 4543-71			930	735	11	45	780	Guenching 880°C, oil, Drawing 540°C, water,
Forging	to 100		550	300	18	45		Annealing 860 - 880°C,
Forging	100 - 150		600	350	16	45	400	Normalizing 860°C,

Brinell hardness for 30KHM (30XM) (annealing) , GOST 4543-71	HB 10 ⁻¹ = 229 MPa
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Technological properties for grade 30KHM (30XM)

Weldability:	limited weldability.
Flakes :	weakly predisposed
Temper brittleness:	not predisposed

Physical properties for grade 30KHM (30XM)

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		270
100	2.07	12.3	41.9	7800	462	
200	2.04	12.6	40.7	7770		334
300	1.97	12.9	39.6	7740		425
400	1.88	13.9	38.4	7700		524
500	1.75	14.4		7660		628
600	1.6	14.6				757
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 30KHM (30XM)

Warning! Indicated both exact and nearest equivalents.

Matching materials both under and nearest equivalent																	
USA	Germany	Japan	France	England	European	Italy	Spain	China	Sweden	Bulgaria	Hungary	Poland	Romania	Czechia	Finland	Austria	Austr
-	DIN, WNr	JIS	AFNOR	BS	EN	UNI	UNE	GB	SS	BDS	MSZ	PN	STAS	CSN	SFS	ONORM	A
4130	1.7220	SCCrM1	25CD4	25CrMo4	1.7218	25CrMo4	25CrMo4	30CrMo	2225	25ChML	25CrMo4	25HM	26MoCr11	15130	G-	BOHLERV330	4130
G41300	24CrMo5	SCM2	25CD4FF	34CrMo4	1.7220	25CrMo4KB	AM25CrMo4	ML30CrMo	2233	25CrMo4	26HM	26HM	33MoCr11	15131	25CrMo4	BOHLERV340	4130
G41350	25CrMo4	SCM420	25CrMo4	708A25	25CrMo4	30CrMo4	AM26CrMo4	ML30CrMoA		30ChM		30HM	T30CrMo3				
	26CrMo4	SCM430	30CD4		34CrMo4	34CrMo4	F.222										
	34CrMo4	SCM432	30CD4FF		34CrMo4KD	35CrMo4											
	GS-		34CD4														
	25CrMo4		34CD4FF														
	GS-		34CrMo4														
	26CrMo4		34CrMo4RR														
	GS-																
	34CrMo4																

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

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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