

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 20KHMFBP (20XMΦBP).

Grade :	20KHMFBP (20XMΦBP)
Classification :	Relaxation-resistant steel
Equivalent grades:	Is absent

Chemical composition in % for grade 20KHMFBP (20XMΦBP)

C	Si	Mn	Ni	S	P	Cr	Mo	V	Nb	Cu	B
0.17 - 0.26	max 0.37	0.5 - 0.8	max 0.45	max 0.03	max 0.03	1 - 1.5	0.8 - 1.1	0.7 - 1	max 0.15	max 0.2	max 0.005

Temperature of critical points for grade 20KHMFBP (20XMΦBP).

$Ac_1 = 810$, $Ac_3(Ac_m) = 950$, $Ar_3(Arc_m) = 800$, $Ar_1 = 690$

Mechanical properties under T=20°C for grade 20KHMFBP (20XMΦBP)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
			1076	958	13.3	46.6	150	Normalizing 1100°C, Drawing 650°C, 6h,
Bar		longitudinal	900		15	55	400	Normalizing 1100°C, Drawing 730°C, 5h,

Physical properties for grade 20KHMFBP (20XMΦBP)

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	2.17			7900		
100	2.11		41			
200	2.05		46.1			
300	1.96		48.2			
400	1.88		50.2			
500	1.8		52.8			
600	1.67		54.4			
700	1.52		56.1			
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

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]

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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