

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 12KH2MFSR (12X2MΦCP).

Grade :	12KH2MFSR (12X2MΦCP)
Classification :	Low alloy high-temperature steel
Equivalent grades:	Is absent

Chemical composition in % for grade 12KH2MFSR (12X2MΦCP)

C	Si	Mn	Ni	S	P	Cr	Mo	V	Cu	B
0.08 - 0.15	0.4 - 0.7	0.4 - 0.7	max 0.25	max 0.025	max 0.025	1.6 - 1.9	0.5 - 0.7	0.2 - 0.35	max 0.25	0.002 - 0.005

Temperature of critical points for grade 12KH2MFSR (12X2MΦCP).

$A_{c1} = 775 - 825$, $A_{c3}(A_{cm}) = 865 - 925$, $A_{r3}(A_{rcm}) = 770 - 820$, $A_{r1} = 715 - 765$
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Mechanical properties under T=20°C for grade 12KH2MFSR (12X2MΦCP)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe	Ø 42 x 6		240	480	24		2700	
Pipe	Ø 32 x 5		530	330	22		2300	
Pipe	Ø 273 x 36		600	440	24	72	1900	

Physical properties for grade 12KH2MFSR (12X2MΦCP)

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			29.4	7800		
100		10.95				
200		11.95				
300		12.65				
400		13.15				
500		13.7				
600		14				
700		14.3				
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 / m ²]
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/m ³]
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 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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