

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 15KH28 (15X28).

Grade :	15KH28 (15X28) (X28 ЭИ349)
Substitute:	20X23H18
Classification :	Corrosion-resistant high-temperature steel
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Chemical composition in % for grade 15KH28 (15X28)

C	Si	Mn	S	P	Cr	-
max 0.15	max 1	max 0.8	max 0.025	max 0.035	27 - 30	(5 C - 0.9) Ti, остальное Fe

Mechanical properties under T=20°C for grade 15KH28 (15X28)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe hot strain, GOST 9940-81			441		17			
Bar, GOST 5949-75			440	295	20	45		Annealing
Sheet thin, GOST 5582-75			530		17			Annealing 740 - 780°C,

Technological properties for grade 15KH28 (15X28)

Weldability:	limited weldability.
Temper brittleness:	predisposed

Physical properties for grade 15KH28 (15X28)

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			7600		
100		10				
500		11				
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 15KH28 (15X28)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	Italy	Spain	Sweden
-	DIN, WNr	JIS	AFNOR	UNI	UNE	SS
446	1.4762 10CrAl24	SUH446	Z10CAS24	X16Cr26	F.3154 X10CrAl24	2322

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]

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 than 2500 steels and alloys (stainless steel, alloy steel, carbon steel, structural steel, tool steel, cast iron, aluminum alloy, titanium alloy, copper alloy, nickel alloy, magnesium alloy and others).
Helpful for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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