

Database of Steel and Alloy (Marochnik)

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Characteristics for grade 15KH25T (15X25T).

Grade :	15KH25T (15X25T) (X25T ЭИ439)
Substitute:	12X18H10T
Classification :	Corrosion-resistant high-temperature steel
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Chemical composition in % for grade 15KH25T (15X25T)

C	Si	Mn	S	P	Cr	-
max 0.15	max 1	max 0.8	max 0.025	max 0.035	24 - 27	(5 C - 0.9) Ti, остальное Fe

Mechanical properties under T=20°C for grade 15KH25T (15X25T)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Pipe cooling strain, GOST 9941-81			461		17			
Pipe hot strain, GOST 9940-81			441		17			
Bar, GOST 5949-75			440	295	20	45		
Sheet trick, GOST 7350-77			440		14		200	Annealing
Sheet thin, GOST 5582-75			530		17			Annealing 740 - 780°C,

Technological properties for grade 15KH25T (15X25T)

Weldability:	hard weldability.
Temper brittleness:	predisposed

Physical properties for grade 15KH25T (15X25T)

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	2.04		17	7600		710
100	2				462	
200	1.97	10				
300	1.89	10.6				
400	1.76	10.8				
500	1.64	11.3				
600	1.4	11.5				
700	1.24	11.6				
800	1.19	11.6				
900	1.09	12.2				

T	E 10⁻⁵	α 10⁶	λ	ρ	C	R 10⁹
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Equivalent steels for grade 15KH25T (15X25T)

Warning! Indicated both exact and nearest equivalents.

USA	Germany	Japan	France	European	China	Sweden	Czechia
-	DIN, WNr	JIS	AFNOR	EN	GB	SS	CSN
446	10CrAl24 X8CrTi25	SUN446	Z10C24	1.4746	1Cr25Ti	2322	17153

Specification :**Mechanical properties :**

- σ_B** - Tensile strength , [MPa]
σ_T - Yield stress , [MPa]
δ₅ - 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 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).
 Helpfull for specialists in grade technology, structural engineer, mechanical engineer, metallurgy and metal trader

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