

Database of Steel and Alloy (Marochnik)

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[Home](#) [European steel grades](#) [Steel and Alloy](#) [Search](#) [Equivalent grades](#) [Grading](#) [GOST Standard](#) [Contacts](#)

YOU HERE: [Steel and Alloy](#) -> [Structural steel](#)

Characteristics for grade 10KHSND (10XCHД).

Grade :	10KHSND (10XCHД) (10XCHД-Ш)
Substitute:	16Г2АФ
Classification :	Low alloy structural steel for welding construct
Equivalent grades:	Go here

Chemical composition in % for grade 10KHSND (10XCHД)

C	Si	Mn	Ni	S	P	Cr	N	Cu	As
max 0.12	0.8 - 1.1	0.5 - 0.8	0.5 - 0.8	max 0.04	max 0.035	0.6 - 0.9	max 0.008	0.4 - 0.6	max 0.08

Mechanical properties under T=20°C for grade 10KHSND (10XCHД)

Assortment	Dimension	Direct.	σ_B	σ_T	δ_5	ψ	KCU	Heat treatment
-	mm	-	MPa	MPa	%	%	kJ / m ²	-
Sheet, GOST 19282-73	5 - 9		540	400	19			
Rolled stock, GOST 6713-91			510-685	390	19		290	

Technological properties for grade 10KHSND (10XCHД)

Weldability:	without limitations.
Flakes :	not predisposed
Temper brittleness:	weakly predisposed

Physical properties for grade 10KHSND (10XCHД)

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						
100	1.97		40			
200	2.01		39			
300	1.95		38			
400	1.88		36			
500	1.8		34			
600	1.69		31			
700	1.56		29			

800	1.35					
900	1.25					
T	E 10 ⁻⁵	α 10 ⁶	λ	ρ	C	R 10 ⁹

Equivalent steels for grade 10KHSND (10XCHД)

Warning! Indicated both exact and nearest equivalents.

Bulgaria
BDS
10ChSND

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]

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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