

MATERIAL NUMBER 1.0310 · CLASS 1.0

10ХСНД-Ш

Material no. 1.0310

also listed as C10D

Chemical composition, mechanical and physical property values, and 33 standard designations from 5 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 33 in 5 regions	PROPERTY VALUES 18 on file
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Chemical composition

Mass fraction in %

What this alloy is



Logarithmic scale, 0.01 % to 100 % — every value here compares directly, decade by decade.



The scale is logarithmic, not the element's raw share of the alloy — the only honest way to fit 0.01 % and 100 % in one picture, and it means every value here can be compared with every other.

Predicted transformation temperatures

computed from composition · °C

PREDICTED AE3 831 °C	PREDICTED AE1 722 °C	PREDICTED ACM 363 °C	PREDICTED BS 596 °C
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Mechanical properties

36 values across 4 conditions

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²	HB
Pipe hot strain, GOST 550-75	353	216	25	50	780	–
Pipe, GOST 8731-87	353	216	24	–	–	–
Pipe, GOST 10705-80	314	196	25	–	–	–
Rolled stock cold-worked , GOST 1050-88	410	–	8	50	–	–
Rolled stock annealed , GOST 1050-88	290	–	26	55	–	–
Rolled stock, GOST 10702-78	390	–	8	50	–	–
(cold-drawn, cold-worked) , GOST 1050-88	–	–	–	–	–	187
(hot-rolled) , GOST 1050-88	–	–	–	–	–	143
Sheet GOST 4041-71	–	–	–	–	–	117
Pipe GOST 8731-87	–	–	–	–	–	137
Pipe GOST 550-75	–	–	–	–	–	137
Bar GOST 10702-78	–	–	–	–	–	115
CONDITION · DIMENSION	RM N/mm ²				A %	
≤ 16	335–475				≥ 24	
≥ 16	335–475				≥ 24	
CONDITION · DIMENSION	RM N/mm ²				A5 %	
4 - 14	290–420				32	
NORMALIZING	RM N/mm ²	RE N/mm ²	A5 %	Z %		
to 80	330	205	31	55		

Physical properties

8 values

CONDITION · DIMENSION	RHO g/cm³	E GPa	ALPHA 10 ⁻⁶ /K	LAMBDA W/(m·K)	CP J/(kg·K)	RHO_EL nΩ·m
20	7.856	210	–	–	–	140
100	7.832	203	12.4	57	494	190
200	7.8	199	13.2	53	532	263
300	7.765	190	13.9	49.6	565	352
400	7.73	182	14.5	45	611	458
500	7.692	172	14.85	39.9	682	584
600	7.653	160	15.1	35.7	770	734
700	7.613	–	15.2	32	857	905
800	7.582	–	12.05	29	875	1081
900	7.594	–	14.08	27	795	1130
1000	–	–	12.6	–	666	–
1100	–	–	14.4	–	668	–

PROPERTY	VALUE	UNIT
Density	7.85	g/cm³
Transformation point Ac1	724	°C
Transformation point Ac3	876	°C
Transformation point Ar3	850	°C
Transformation point Ar1	682	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	without limitations.	
Flake sensitivity	not predisposed	
Temper brittleness	not predisposed	

Designations across standards

33 designations · 4 documented as identical

Russia / CIS	28	United States	2
10	gost	G10100 This grade's own name	uns
10GT	gost	1010 This grade's own name	aisi-sae
10KHNDP	gost		
10KHSND	gost	Europe	1
10ps	gost	C10D This grade's own name	din-en
10YuA	gost		
10XCHД-Ш	gost	Japan	1
ASU10E	gost	S10C	jis
AU10E	gost		
PA-ZhNGr10TSs	gost	China	1
PK10	gost	10 This grade's own name	gb
PK10F	gost		
ShKh10	gost		
Sv-10GA	gost		
Sv-10GN	gost		
Sv-10GSMТ	gost		
Sv-10KhM	gost		
Sv-10KhMFA	gost		
Sv-10KhMFT	gost		
Sv-10MKh	gost		
Sv-10NMA	gost		
МГ30ЖН1К	gost		
ПК10-6.0	gost		
ПК10-6.4	gost		
ПК10-6.8	gost		
ПК10-7.2	gost		
ПК10-7.6	gost		
ПК10Φ-6.8	gost		

Note on use. The data is compiled to the best of our knowledge from publicly available standards and manufacturer documentation. It replaces neither material testing nor an inspection document to EN 10204. Please request a mill certificate to EN 10204 2.1, 3.1 or 3.2 together with your enquiry. The standard in its current valid edition always prevails.

Enquiry about 10XCHД-Ш

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ISSUED

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