

MATERIAL NUMBER 1.0310 · CLASS 1.0

PA-ZhNGr10TSs

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/cm ³	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/cm ³
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		Europe		1
10KHSND	gost		C10D	This grade's own name	din-en
10ps	gost		Japan		1
10YuA	gost		S10C		jis
10XCHД-Ш	gost		China		1
ASU10E	gost		10	This grade's own name	gb
AU10E	gost				
PA-ZhNGr10TSs	gost				
PK10	gost				
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 PA-ZhNGr10TSs

Quotation, availability, mill certificate or a technical question — directly on the material page.

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ISSUED

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