

MATERIAL NUMBER 1.0050 · CLASS 1.0

PA-ZhGrD5

Material no. 1.0050

also listed as E295

Chemical composition, mechanical and physical property values, and 123 standard designations from 23 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 123 in 23 regions	PROPERTY VALUES 11 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

Not enough recorded composition to predict a transformation temperature for this grade — missing: C, Mn, Si, Ni, Cr, Mo.

Mechanical properties

36 values across 3 conditions

FLAT AND LONG PRODUCTS	REH N/mm ²	RM N/mm ²
≤ 3	—	490–660
3 – 100	—	470–610

FLAT AND LONG PRODUCTS		REH N/mm ²	RM N/mm ²			
≤ 16		295	–			
16 – 40		285	–			
40 – 63		275	–			
63 – 80		265	–			
80 – 100		255	–			
100 – 150		245	450–610			
150 – 250		–	440–610			
150 – 200		235	–			
CONDITION · DIMENSION		A80 % · Lo = 80 mm	A % · Lo = 5,65 √So			
≤ 1		12	–			
1 – 1.5		13	–			
1.5 – 2		14	–			
2 – 2.5		15	–			
2.5 – 3		16	–			
3 – 40		–	20			
40 – 63		–	19			
63 – 100		–	18			
100 – 150		–	16			
150 – 250		–	15			
NORMALIZING		RM N/mm ²	RE N/mm ²	A5 %	Z %	KCU kJ/m ²
100 - 300		350	175	24	50	590
300 - 500		350	175	22	45	540
500 - 800		350	175	20	40	490

Physical properties

8 values

CONDITION · DIMENSION	RHO g/cm ³	E GPa
20	7.85	198
100	–	196
200	–	191

CONDITION · DIMENSION	RHO g/cm ³	E GPa
300	–	185
400	–	164

PROPERTY	VALUE	UNIT
Density	7.85	g/cm ³
Transformation point Ac1	730	°C
Transformation point Ac3	825	°C
Transformation point Ar3	815	°C
Transformation point Ar1	690	°C

Technological properties

PROPERTY	VALUE	UNIT
Weldability	limited weldability.	
Flake sensitivity	not predisposed	
Temper brittleness	not predisposed	

Designations across standards

123 designations · 3 documented as identical

Russia / CIS		53		
08Fkp	gost	ЖД10		gost
08GBYu	gost	ЖД5		gost
08GDNF	gost	МЖГ1		gost
08GDNFL	gost	C285		gost
08KhGSBDP	gost	ст.08кп		gost
08KhGSDP	gost	Ст5сп		gost
08KhMChA	gost	United States		12
08KhMFChA	gost	A570		aisi-sae
08KhMFchYuA	gost	A570(50)		aisi-sae
08YuA	gost	A570Gr.50		aisi-sae
08кп	gost	A572		aisi-sae
08ХМФЧ	gost	A572(50)		aisi-sae
08ХМЧ	gost	A572Gr.50		aisi-sae
30HG1	gost	Gr.50		aisi-sae
30ХГ1	gost	K02305		aisi-sae
5KHGM	gost	K02507		aisi-sae
5KHNV5	gost	A 570 Grade 50		astm
5МФПЛ	gost	A 622		astm
CHS5	gost	A570		astm
CHS5SH	gost	United Kingdom		7
L5	gost	1449 1 HR		bs
LR5	gost	43/35HS		bs
PA-ZhD5	gost	4360-50B		bs
PA-ZhGrD5	gost	50B		bs
PZhR5	gost	BS 1449 1 HR		bs
PZhV5	gost	E295		bs
S285	gost	Fe490-2FN		bs
St5Gps	gost	France		6
St5ps	gost	3C		afnor
Sv-08	gost	A50		afnor
Sv-08A	gost	A50-2		afnor
Sv-08AA	gost	A60-2		afnor
Sv-08GA	gost	E295		afnor
Sv-08GS	gost	A 50-2		afnor
Sv-08GSMТ	gost	Spain		4
Sv-08KhGSMA	gost	A490		une
Sv-08KhGSMFA	gost	A490-2		une
Sv-08KhM	gost	E295		une
Sv-08KhMFА	gost	Fe490-2FN		une
Sv-08KhMNFBA	gost	Sweden		4
Sv-08MKh	gost	1550		ss
VSt5sp	gost	1550-00		ss
ЖГр0.25Д5	gost	1550-01		ss
ЖГр1.5Д10	gost	2172		ss
ЖГр1.5Д5	gost			

Bulgaria	4	Czechia	2
ASt5	bds	10 500 HŽ	csn
E295	bds	11500	csn
WSt5ps	bds		
WSt5sp	bds	Poland	2
Europe	3	MSt5	pn
E295 This grade's own name	din-en	St5	pn
Fe490-2	din-en	Austria	2
St 50-2 This grade's own name	din-en	St490	onorm
International	3	St50F	onorm
E355-C	iso	Belgium	2
Fe490	iso	A490-1.2	nbn
Fe510-C	iso	FE490-2FN	nbn
Japan	3	South Korea	2
SS 50	jis	SPHE This grade's own name	ks
SS490	jis	SS490	ks
SS500	jis	Slovakia	1
China	3	11 500	stn
Q275	gb	Serbia	1
Q275Z	gb	Č.0545	srps
Q345C	gb	Romania	1
Italy	3	OL50.1	stas
E295	uni	Finland	1
Fe480	uni	Fe50	sfs
Fe490	uni	Switzerland	1
Hungary	3	St50-2	snv
A 50	msz		
E295	msz		
Fe490-2	msz		

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-ZhGrD5

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

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DATASHEET ONLINE

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GRADE SEARCH

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MATERIAL NO.

1.0050

ISSUED

Aug 20, 2026