

MATERIAL NUMBER 1.0050 · CLASS 1.0

5МФРЛ

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



Iron — the balance, never listed by a standard — 99.9 % P — 0 % S — 0 % N — 0 %

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	ЖД10	gost
08Fkp	gost	ЖД5	gost
08GBYu	gost	МЖГ1	gost
08GDNF	gost	C285	gost
08GDNFL	gost	ст.08кп	gost
08KhGSBDP	gost	Ст5сп	gost
08KhGSDP	gost	United States	12
08KhMChA	gost	A570	aisi-sae
08KhMFChA	gost	A570(50)	aisi-sae
08KhMFChYuA	gost	A570Gr.50	aisi-sae
08YuA	gost	A572	aisi-sae
08кп	gost	A572(50)	aisi-sae
08ХМФЧ	gost	A572Gr.50	aisi-sae
08ХМЧ	gost	Gr.50	aisi-sae
30HG1	gost	K02305	aisi-sae
30ХГ1	gost	K02507	aisi-sae
5KHGM	gost	A 570 Grade 50	astm
5KHNV5	gost	A 622	astm
5МФПЛ	gost	A570	astm
CHS5	gost	United Kingdom	7
CHS5SH	gost	1449 1 HR	bs
L5	gost	43/35HS	bs
LR5	gost	4360-50B	bs
PA-ZhD5	gost	50B	bs
PA-ZhGrD5	gost	BS 1449 1 HR	bs
PZhR5	gost	E295	bs
PZhV5	gost	Fe490-2FN	bs
S285	gost	France	6
St5Gps	gost	3C	afnor
St5ps	gost	A50	afnor
St5sp	gost	A50-2	afnor
Sv-08	gost	A60-2	afnor
Sv-08A	gost	E295	afnor
Sv-08AA	gost	A 50-2	afnor
Sv-08GA	gost	Spain	4
Sv-08GS	gost	A490	une
Sv-08GSMТ	gost	A490-2	une
Sv-08KhGSMA	gost	E295	une
Sv-08KhGSMFA	gost	Fe490-2FN	une
Sv-08KhM	gost	Sweden	4
Sv-08KhMFA	gost	1550	ss
Sv-08KhMNFBA	gost	1550-00	ss
Sv-08KhNM	gost	1550-01	ss
Sv-08MKh	gost	2172	ss
VSt5sp	gost		
ЖГр0.25Д5	gost		
ЖГр1.5Д10	gost		
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		
China	3	Slovakia	1
Q275	gb	11 500	stn
Q275Z	gb	Serbia	1
Q345C	gb	Č.0545	srps
Italy	3	Romania	1
E295	uni	OL50.1	stas
Fe480	uni	Finland	1
Fe490	uni	Fe50	sfs
Hungary	3	Switzerland	1
A 50	msz	St50-2	snv
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 5MΦPЛ

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GRADE SEARCH

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MATERIAL NO.

1.0050

ISSUED

Aug 20, 2026