

MATERIAL NUMBER 1.0406 · CLASS 1.0

F.221

Material no. 1.0406

also listed as C25

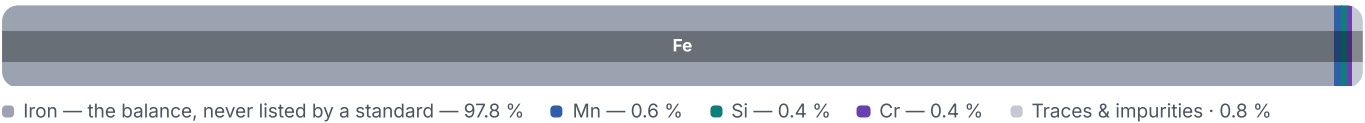
Chemical composition, mechanical and physical property values, and 58 standard designations from 20 regions.

DENSITY 7.85 g/cm³	OTHER DESIGNATIONS 58 in 20 regions	PROPERTY VALUES 16 on file
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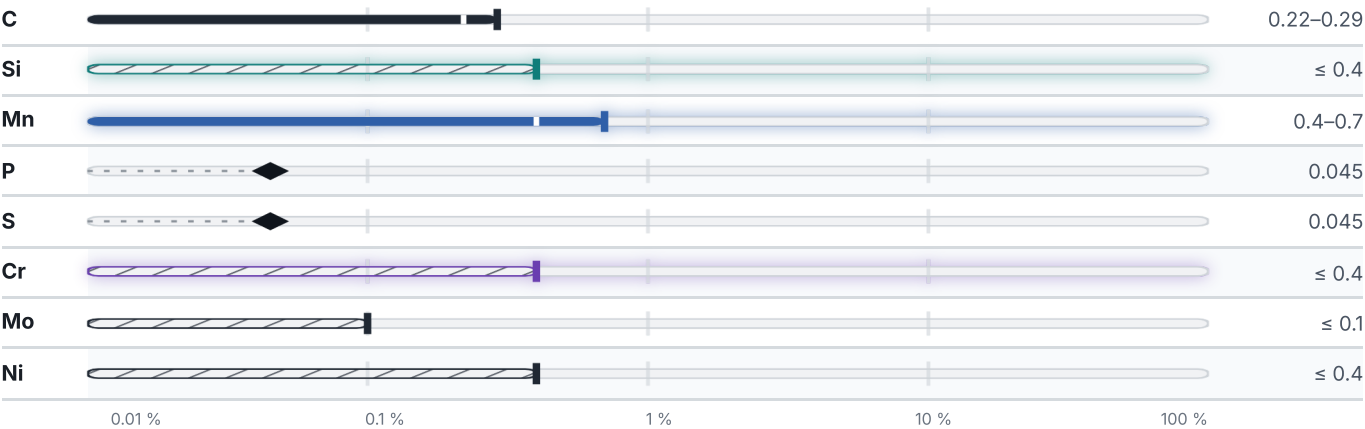
Chemical composition

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 803 °C	PREDICTED AE1 725 °C	PREDICTED ACM 503 °C	PREDICTED BS 572 °C
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Mechanical properties

29 values across 5 conditions

CONDITION · DIMENSION	RM N/mm ²	A5 %	Z %	HB
Rolled stock cold-worked , GOST 1050-88	540	7	40	–
Rolled stock annealed , GOST 1050-88	410	19	50	–
Band annealed , GOST 2284-79	340–590	18	–	–
Band cold-worked , GOST 2284-79	540–880	–	–	–
Sheet GOST 4041-71	–	–	–	138
Bar GOST 10702-78	–	–	–	156
Rolled stock GOST 1050-88	–	–	–	217
Sheet trick GOST 1577-93	–	–	–	170
NORMALIZED	RM N/mm ²	A %		
≤ 100	440	23		
100 – 250	420	23		
250 – 500	400	23		
500 – 1000	390	22		
CONDITION · DIMENSION	RM N/mm ²	A5 %		
4 - 14	390–540	26		
CONDITION · DIMENSION	RM N/mm ²	Z %		
Bar cold-drawn , GOST 10702-78	540	50		
NORMALIZING	RM N/mm ²	RE N/mm ²	A5 %	Z %
to 80	450	275	23	50

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	7.82	198	–	–	–	169
100	–	196	12.2	51	470	219
200	–	191	13	49	483	292
300	–	186	13.7	46	–	381

CONDITION · DIMENSION	RHO g/cm³	E GPa	ALPHA 10^-6/K	LAMBDA W/(m·K)	CP J/(kg·K)	RHO_EL nΩ·m
400	–	163	14.3	43	521	488
500	–	–	14.7	40	571	601
600	–	–	15	36	–	758
700	–	–	15.2	32	–	925
800	–	–	–	26	–	–

PROPERTY	VALUE	UNIT
Density	7.85	g/cm³
Transformation point Ac1	735	°C
Transformation point Ac3	835	°C
Transformation point Ar3	825	°C
Transformation point Ar1	680	°C

Technological properties

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

Designations across standards

58 designations · 4 documented as identical

Russia / CIS		9	United States		5	
25	gost		G10250	This grade's own name	uns	
25GS	gost		1025	This grade's own name	aisi-sae	
25GSL	gost		1026		aisi-sae	
25KhGL	gost		G10250		aisi-sae	
25KHGNMT	gost		M1025	This grade's own name	aisi-sae	
25KHGSA	gost		United Kingdom			5
25KHGT	gost		070M26		bs	
25ps	gost		1C25		bs	
R2M5	gost		C25		bs	
France		6	C25 C25E C25R		bs	
2C25	afnor		C25E		bs	
AF50C30	afnor					
C25	afnor					
C25E	afnor					
FR28	afnor					
XC25	afnor					

Italy	5	Poland	2
C22E	uni	20G	pn
C22R	uni	25	pn
C25	uni		
C25E	uni	Bulgaria	2
C25R	uni	25	bds
		C25E	bds
Spain	4		
C25E	une	South Korea	2
C25k	une	SM25C	ks
F.1120	une	SM28C	ks
F.221	une		
Japan	3	Europe	1
S25C	jis	C25 This grade's own name	din-en
S28C	jis	Sweden	1
SWRCH25K	jis	1450	ss
China	3	Czechia	1
25	gb	12030	csn
25Z	gb		
ML25	gb	Latin America	1
		1025	copant
Romania	3		
OLC25	stas	Slovakia	1
OLC25q	stas	12 030	stn
OLC25X	stas		
		Hungary	1
International	2	C25E	msz
C25	iso	Belgium	1
C25 C25E4 C25M2	iso	C25-2	nbn

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 F.221

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

[Start an enquiry](#)

DATASHEET ONLINE	GRADE SEARCH	MATERIAL NO.	ISSUED
View the material page	Search all grades	1.0406	Aug 20, 2026