

MATERIAL NUMBER 1.0535 · CLASS 1.0

55nn

Material no. 1.0535

also listed as C55

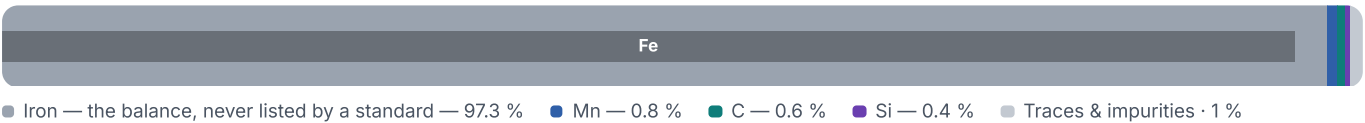
Chemical composition, mechanical and physical property values, and 101 standard designations from 21 regions.

DENSITY 7.85 g/cm³	OTHER DESIGNATIONS 101 in 21 regions	PROPERTY VALUES 16 on file
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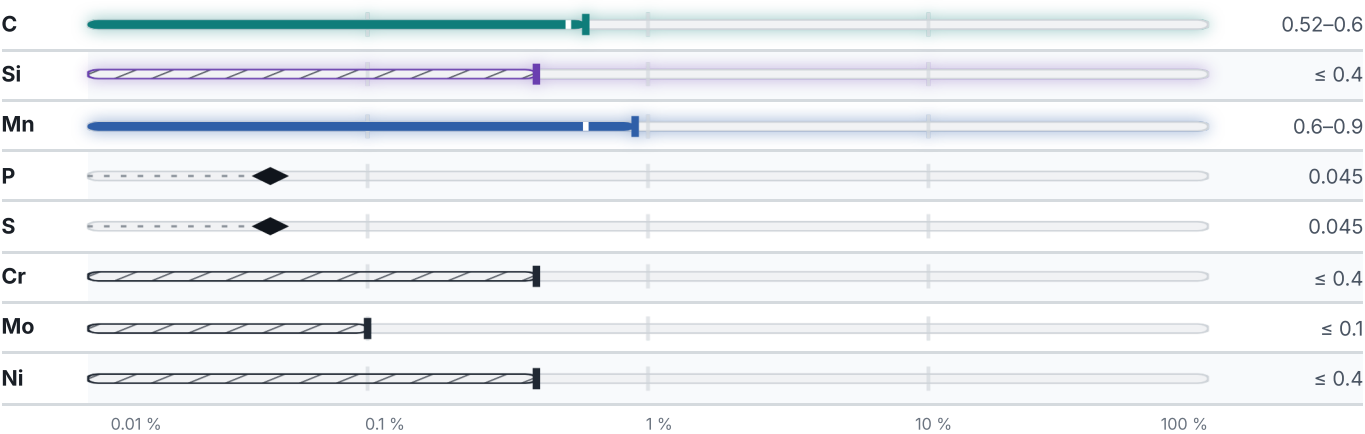
Chemical composition

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 744 °C	PREDICTED AE1 723 °C	PREDICTED ACM 687 °C	PREDICTED BS 547 °C
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Mechanical properties

33 values across 8 conditions

NORMALIZED		RM N/mm ²	A %	
≤ 16		680	11	
16 – 100		640	12	
100 – 250		620	12	
250 – 500		600	–	
500 – 1000		590	–	
COLD DRAWN / HARD		RM N/mm ²	A %	
5 – 10		770–1100	5	
10 – 16		730–1080	6	
16 – 40		690–1050	7	
40 – 63		650–1030	8	
CONDITION · DIMENSION	RM N/mm ²	A5 %	Z %	HB
Rolled stock cold-worked , GOST 1050-88	660	6	30	–
Rolled stock annealed , GOST 1050-88	560	12	40	–
Bar GOST 10702-78	–	–	–	217
Rolled stock GOST 1050-88	–	–	–	241
NORMALIZING	RM N/mm ²	RE N/mm ²	A5 %	Z %
to 80	630	375	14	40
TREATED TO IMPROVE SHEARABILITY				HB
Treated to improve shearability				255
ANNEALING		RM N/mm ²	A5 %	
6 - 60		580	17	
SOFT ANNEALED			HB	
Soft annealed			229	
AS ROLLED AND TURNED			HB	
As rolled and turned			181–269	

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	7.81	216	–	48	–	272
100	–	213	11.2	48	487	–
200	–	207	12	47	500	–
300	–	200	12.8	44	517	–
400	–	180	13.4	41	533	–
500	–	171	13.9	38	559	–
600	–	154	14.2	35	584	–
700	–	136	14.5	31	–	–
800	–	123	13.4	27	–	–

PROPERTY	VALUE	UNIT
Density	7.85	g/cm ³
Transformation point Ac1	725	°C
Transformation point Ac3	760	°C
Transformation point Ar3	750	°C
Transformation point Ar1	690	°C

Technological properties

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

Heat treatment

1 regimes

STEP	TEMPERATURE	MEDIUM
source joins the operations with + / procedural order		
Normalizing	Temperature not stated	—
Normalizing	Temperature not stated	—
Tempering	Temperature not stated	—

Designations across standards

101 designations · 3 documented as identical

France		18	Italy		8
1C55	afnor		1C55	uni	
2C50	afnor		C50	uni	
2C55	afnor		C50E	uni	
AF70	afnor		C50R	uni	
AF70C55	afnor		C53	uni	
C45E	afnor		C55	uni	
C50E	afnor		C55E	uni	
C50RR	afnor		C55R	uni	
C54	afnor		Russia / CIS		
C55	afnor				6
C55E	afnor		50	gost	
XC48H1	afnor		55	gost	
XC48H1TS	afnor		55KH	gost	
XC48TS	afnor		55SL	gost	
XC50	afnor		55nn	gost	
XC54	afnor		58	gost	
XC55	afnor		Spain		
XC55H1	afnor				5
United States		9	C50E	une	
G10550	This grade's own name	uns	C55	une	
G10600		uns	C55E	une	
1049	aisi-sae		C55k	une	
1050	aisi-sae		F.1150	une	
1055	This grade's own name	aisi-sae	Japan		
1060	aisi-sae				5
G10490	aisi-sae		S40C	jis	
G10500	aisi-sae		S50C	jis	
G10550	aisi-sae		S53C	jis	
			S55C	jis	
			S55C-CSP	jis	
United Kingdom		9	China		
060A52	bs				5
060A57	bs		50	gb	
070M55	bs		55	gb	
080A52	bs		SM50	gb	
080M50	bs		SM55	gb	
C50E	bs		ZG340-640	gb	
C55	bs		Poland		
C55E	bs				5
En9	bs		55	pn	
			55A	pn	
			55rs	pn	
			60	pn	
			D50	pn	

Romania		5	Sweden		2
OLC50AT	stas		1655	ss	
OLC50X	stas		1674	ss	
OLC55	stas		Czechia		2
OLC55A	stas		12051	csn	
OLC55X	stas		12060	csn	
Bulgaria		5	Hungary		2
50	bds		C50E	msz	
55	bds		C55E	msz	
C50E	bds		Australia / New Zealand		2
C55	bds		1050	as-nzs	
C55E	bds		1055	as-nzs	
Europe		3	South Korea		2
1.0535	din-en		SM50C	ks	
C55	din-en	This grade's own name	SM55C	ks	
CF53	din-en		Slovakia		1
International		3	12 060	stn	
C50	iso		Serbia		1
C55	iso		Č.1630	srps	
C55E4	iso				
Belgium		3			
C53	nbn				
C55-1	nbn				
C55-2	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 55nn

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	1.0535	Aug 20, 2026