

MATERIAL NUMBER 1.0045 · CLASS 1.0

Gr 50B

Material no. 1.0045

also listed as S355JR

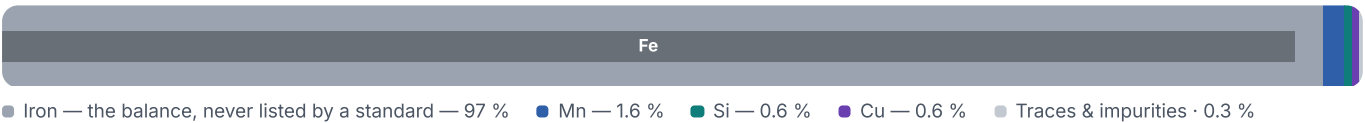
Chemical composition, mechanical and physical property values, and 32 standard designations from 17 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 32 in 17 regions	PROPERTY VALUES 8 on file
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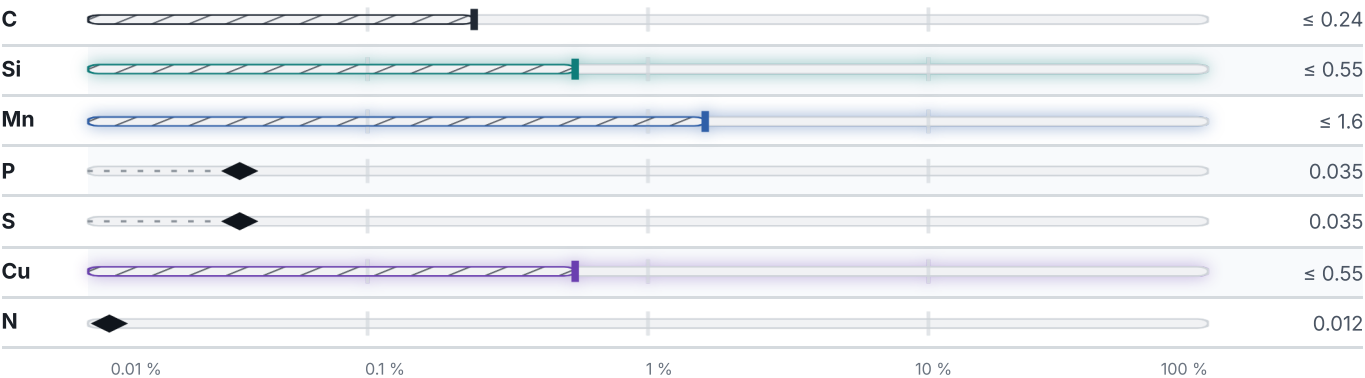
Chemical composition

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: Ni, Cr, Mo.

Mechanical properties

46 values across 3 conditions

FLAT AND LONG PRODUCTS	REH N/mm ²	RM N/mm ²	
≤ 3	–	510–680	
3 – 100	–	470–630	
≤ 16	355	–	
16 – 40	345	–	
40 – 63	335	–	
63 – 80	325	–	
80 – 100	315	–	
100 – 150	295	450–600	
150 – 250	–	450–600	
150 – 200	285	–	
200 – 250	275	–	
CONDITION · DIMENSION	A80 % · Lo = 80 mm	A % · Lo = 5,65 √So	
≤ 1	14	–	
1 – 1.5	15	–	
1.5 – 2	16	–	
2 – 2.5	17	–	
2.5 – 3	18	–	
3 – 40	–	22	
40 – 63	–	21	
63 – 100	–	20	
100 – 150	–	18	
150 – 250	–	17	
CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A %
≤ 16	470–630	≥ 345	≥ 20
16 – 40	470–630	≥ 335	≥ 20
40 – 63	470–630	≥ 325	≥ 19
63 – 80	470–630	≥ 315	≥ 19
80 – 100	470–630	≥ 305	≥ 19
100 – 150	450–600	≥ 285	≥ 18

CONDITION · DIMENSION	RM N/mm ²	RE N/mm ²	A %
150 – 200	450–600	≥ 275	≥ 17
200 – 250	450–600	≥ 265	≥ 17

Physical properties

1 values

PROPERTY	VALUE	UNIT
Density	7.85	g/cm ³

Designations across standards

32 designations · 4 documented as identical

United States		5	Japan		2
K02404	This grade's own name	uns	SM490A		jis
K02702	This grade's own name	uns	SS490		jis
A572		aisi-sae	Canada		2
A678Gr.A		aisi-sae	350W		csa
SSGrade50		aisi-sae	350WT		csa
Europe		4	France		1
Fe510B		din-en	E36-2		afnor
S355JR	This grade's own name	din-en	Spain		1
SSGrade50		din-en	AE355B		une
St52-3		din-en	Portugal		1
China		3	FE510-B		np
50B	This grade's own name	gb	Italy		1
Q345B		gb	Fe510B		uni
Q345C		gb	Sweden		1
Brazil		3	2132-01		ss
NBR 5000 Grau 35		abnt	Poland		1
NBR 5004 Grau Q35		abnt	18G2A		pn
NBR 7007 AR350		abnt	Hungary		1
United Kingdom		2	Fe 355 B		msz
50B		bs	South Africa		1
Gr 50B		bs	350 WA		sans
International		2	Belgium		1
E355C		iso	AE355B		nbn
Fe510B		iso			

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 Gr 50B

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

[Start an enquiry](#)

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ISSUED
Aug 20, 2026