

MATERIAL NUMBER 1.0308 · CLASS 1.0

ES235

Material no. 1.0308

also listed as E235

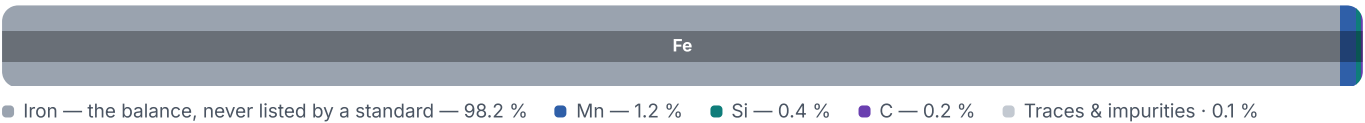
Chemical composition, mechanical and physical property values, and 69 standard designations from 9 regions.

DENSITY 7.85 g/cm ³	OTHER DESIGNATIONS 69 in 9 regions	PROPERTY VALUES 13 on file
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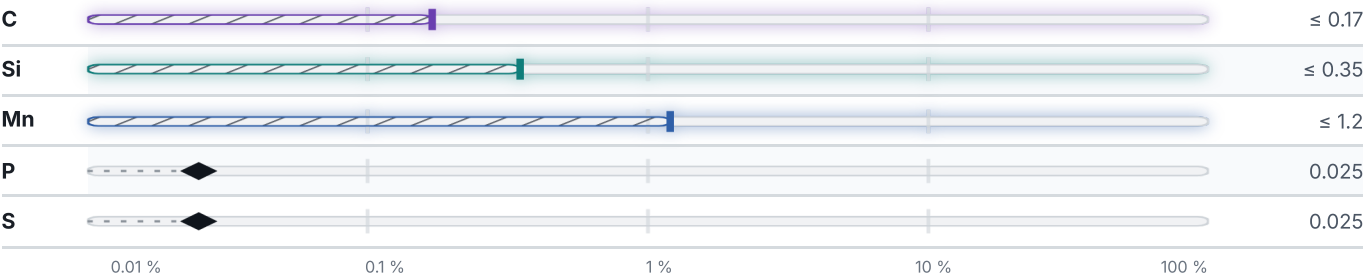
Chemical composition

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

15 values across 2 conditions

AS ROLLED	REH N/mm ²	RM N/mm ²
≤ 16	235	360

AS ROLLED	REH N/mm²	RM N/mm²	
16 – 40	225	360	
40 – 65	215	360	
65 – 100	–	340	
65 – 80	205	–	
80 – 100	195	–	
CONDITION · DIMENSION	RM N/mm²	RE N/mm²	A5 %
to 20	320–410	215	33
20 - 40	320–410	205	32

Physical properties

8 values

CONDITION · DIMENSION			RHO g/cm³
20			7.85
PROPERTY	VALUE	UNIT	
Density	7.85	g/cm³	
Transformation point Ac1	735	°C	
Transformation point Ac3	854	°C	
Transformation point Ar3	835	°C	
Transformation point Ar1	682	°C	

Technological properties

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

Heat treatment

7 regimes

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

STEP	TEMPERATURE	MEDIUM
Annealing	Temperature not stated	—
Tempering	Temperature not stated	—
Normalizing	Temperature not stated	—
Tempering	Temperature not stated	—
Annealing	Temperature not stated	—
source joins the operations with (or)		
Normalizing	Temperature not stated	—
Normalizing	Temperature not stated	Air
Normalizing	Temperature not stated	—
Normalizing	Temperature not stated	—
Normalizing	Temperature not stated	—
Normalizing	Temperature not stated	—
source joins the operations with (or)		
Annealing	Temperature not stated	—
Tempering	Temperature not stated	—

Designations across standards

69 designations · 7 documented as identical

Russia / CIS	44	United Kingdom	6
08Kh15N5D2T-Sh	gost	CEW4	bs
08X15H5Д2Т	gost	CFS4	bs
08X15H5Д2Т-Ш	gost	ERW2	bs
10	gost	ERW3	bs
10Kh14N5M2L	gost	ERW4	bs
10X14H5M2Л	gost	S360	bs
A2	gost		
CHKH2	gost	United States	5
CHN2KH	gost	G10100 This grade's own name	uns
KT-2	gost	K02504 This grade's own name	uns
L2	gost	1010 This grade's own name	aisi-sae
LR2	gost	1020	aisi-sae
P2	gost	A 53 GrA	astm
PA-ZhGr2	gost		
PA-ZhGr2D	gost	Europe	4
PA-ZhGr2K	gost	E235 This grade's own name	din-en
PF2	gost	RSt 37-2 This grade's own name	din-en
PL2	gost	S235G2T This grade's own name	din-en
PVK2	gost	St 35 This grade's own name	din-en
PZhR2	gost		
PZhV2	gost	China	4
St2kp	gost	Q215B	gb
V2F	gost	Q215B-b	gb
VSt2kp	gost	Q215B-F	gb
VSt2ps	gost	Q215B-Z	gb
VSt2sp	gost		
ACHK-2	gost	France	3
ACHS-2	gost	ES235	afnor
ACHV-2	gost	TS-34a	afnor
ВНЛ-2	gost	TU376	afnor
ВНС-2-Ш	gost		
Ж50-58	gost	Italy	1
ЖГр2	gost	Fe360	uni
ЖГр2-20	gost		
ЖГр2Д2.5	gost	Czechia	1
ЖГр2К1	gost	11353	csn
ЖГр3Д3	gost		
ЖГр3Д3-5.5	gost	Croatia	1
ЖГр3К0.8	gost	Č0361	hrn
ЖГр3К1	gost		
Ст2пс	gost		
Ст2сп	gost		
ЭП410	gost		
ЭП410-Ш	gost		

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 ES235
Quotation, availability, mill certificate or a technical question — directly on the material page.

Start an enquiry

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View the material page

GRADE SEARCH
Search all grades

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ISSUED
Aug 20, 2026