


S275JR
STRUCTURAL STEELS

Reference standard: EN 10025-2:2019

W.-Nr.	1.0044	AFNOR	E 28-2
AISI	-	BS	43 B
UNI	Fe430B	JIS	-
DIN	St 44-2	Other	ISO 630-2 S275B

CHEMICAL COMPOSITION

C	Si	Mn	P	S	Cu	N
0.22 + 0.03	- -	1.50 + 0.10	0.035 + 0.010	0.035 + 0.010	0.55 + 0.05	0.012 + 0.002

Cast analysis composition, maximum values in % by mass; the second line is the permissible deviation of the product analysis | The C figure is the maximum: up to 40 mm it is 0.21, and on sections above 100 mm it is agreed at the time of order | For long products, and therefore for bars, P and S are allowed 0.040 instead of 0.035

Carbon equivalent CEV max on cast analysis $0.40 (t \leq 40 \text{ mm}) \cdot 0.42 (40 < t \leq 150 \text{ mm}) \cdot 0.44 (150 < t \leq 250 \text{ mm})$ | Deoxidation FN: only rimming steels are ruled out, fully killed applies to J2 alone | No heat treatment is prescribed: on long products the delivery condition is +AR, +N or +M at the manufacturer's discretion

MECHANICAL PROPERTIES

HOT-ROLLED - Tensile and longitudinal impact test at 20 °C EN 10025-2:2019					
Diameter/thick. (in mm)		ReH N/mm ² min	R N/mm ²	A% min	KV2 J min
>	≤				
3	16	275	410-560	23	27
16	40	265	410-560	23	27
40	63	255	410-560	22	27
63	80	245	410-560	21	27
80	100	235	410-560	21	27
100	150	225	400-540	19	27
150	200	215	380-540	18	27
200	250	205	380-540	18	27

ReH = upper yield strength | KV2 = Charpy V impact energy at 20 °C, striker radius 2 mm, average of 3 test pieces: on quality JR the 27 J are specified, but the test is carried out only when required at the time of order, and on sections above 100 mm the values are agreed | For quality JR the standard's scope stops at 250 mm: beyond it, only flat products of qualities J2 and K2 are covered

We supply this steel as hot-rolled bars in the as-rolled condition: the bright-product standard does not list S275JR, so no standardised cold-drawn or peeled values exist for this grade

Physical properties to EN 1993-1-1 (elastic moduli, expansion) and EN 1993-1-2 (density, conductivity, specific heat). The expansion coefficient applies up to 100 °C. Density 7.85 kg/dm³ · thermal conductivity 53.3 W/(m·K) · specific heat 440 J/(kg·K), both at 20 °C

Temperature ° C	Elastic modulus GPa		Mean expansion 10 ⁻⁶ K ⁻¹ (20 °C → T)
	E long	G tang	
20	210	81	12