


S355J2
STRUCTURAL STEELS

Reference standard: EN 10025-2:2019

W.-Nr.	1.0577	AFNOR	-
AISI	-	BS	50 D
UNI	Fe510D	JIS	-
DIN	St 52-3 N	Other	ISO 630 E355

CHEMICAL COMPOSITION

C	Si	Mn	P	S	Cu	N
0.22	0.55	1.60	0.025	0.025	0.55	-

Cast analysis composition, maximum values in % by mass | The C figure is the maximum: up to 30 mm it is 0.20 | Fully killed steel (FF): no nitrogen limit is specified for quality J2

Carbon equivalent CEV max on cast analysis 0.45 ($t \leq 30$ mm) • 0.47 ($30 < t \leq 150$ mm) • 0.49 ($t > 150$ mm), 0.54 for long products | No heat treatment is prescribed: delivered as-rolled (+AR) or normalized (+N), normalizing 890-950 °C in air

MECHANICAL PROPERTIES

HOT-ROLLED - Tensile test at 20 °C 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
>	≤				
-	16	355	470-630	22	27
16	40	345	470-630	22	27
40	63	335	470-630	21	27
63	80	325	470-630	20	27
80	100	315	470-630	20	27
100	150	295	450-600	18	27
150	200	285	450-600	17	27
200	250	275	450-600	17	27
250	400	265	450-600	17	27

ReH = upper yield strength | KV2 = Charpy V impact energy at -20 °C, striker radius 2 mm, average of 3 test pieces | Below 3 mm thickness R is 510-680 N/mm², outside the range we supply

The last row (250-400 mm) applies to flat products only: for bars and sections the standard stops at 250 mm

PEELED AND ROLLER-BURNISHED +SH - Longitudinal tensile test at 20 °C			
Diameter/thick. (in mm)		R N/mm ²	HBW for info.
>	≤		
16	40	470-630	140-187
40	63	470-630	140-187
63	100	470-630	140-187

COLD-DRAWN +C - Longitudinal tensile test at 20 °C				
Diameter/thick. (in mm)		Rp 0.2 N/mm ² min	R N/mm ²	A% min
>	≤			
5	10	520	630-950	6
10	16	450	580-880	7
16	40	350	530-850	8
40	63	335	500-770	9
63	100	315	470-740	9

Cold-finished conditions to EN ISO 683-7:2024, which designates the steel S355J2C (1.0579): the C is suitability for cold drawing, not a different composition | The +SH HB column is hardness | Below 5 mm and above 100 mm the values are agreed at the time of order

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