

S235JR EN 10025-2 (Euronorm)

Standards

EN 10025-2

Hot rolled products of structural steels. - Part 2: Technical delivery conditions for non-alloy structural steels

Other designations

Euronorm

1.0038 - EN 10025-2

South Africa

1.0038 - SANS 50025-2

S235JR - SANS 50025-2

USA

1.0038 - ASME SA/EN 10025-2

S235JR - ASME SA/EN 10025-2

Chemical composition

C < 0.2

Mn < 1.4

P < 0.035

S < 0.035

Cu < 0.55

N < 0.012

Fe Rest

CE < 0.4

Ladle analysis.

$CE = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$

Thickness < 40mm: C < 0.17

Thickness < 40mm: CE < 0.35

Thickness < 150mm: CE < 0.38

0.25 < Cu < 0.40: CE + 0.02

Properties

By EN 10025-2

Thickness: < 16 mm ;

Yield Strength: > 235 MPa

Tensile Strength: 350 - 510 MPa

Thickness: 16 - 40 mm ;

Yield Strength: > 225 MPa

Tensile Strength: 350 - 510 MPa

Thickness: 40 - 100 mm ;

Yield Strength: > 215 MPa

Tensile Strength: 350 - 510 MPa

S235JR EN 10025-2 (Euronorm)

Thickness: 100 - 150 mm ;

Yield Strength: > 195 MPa

Tensile Strength: 350 - 500 MPa

Thickness: 150 - 200 mm ;

Yield Strength: > 185 MPa

Tensile Strength: 240 - 490 MPa

Thickness: 200 - 250 mm ;

Yield Strength: > 175 MPa

Tensile Strength: 240 - 490 MPa

Longitudinal test pieces

Thickness: < 1 mm ;

Elongation: > 17 %

Thickness: 1.0 - 1.5 mm ;

Elongation: > 18 %

Thickness: 1.5 - 2.0 mm ;

Elongation: > 19 %

Thickness: 2.0 - 2.5 mm ;

Elongation: > 20 %

Thickness: 2.5 - 3.0 mm ;

Elongation: > 21 %

Thickness: 3 - 40 mm ;

Elongation: > 26 %

Thickness: 40 - 63 mm ;

Elongation: > 25 %

Thickness: 63 - 100 mm ;

Elongation: > 24 %

Thickness: 100 - 150 mm ;

Elongation: > 22 %

Thickness: 150 - 250 mm ;

Elongation: > 21 %

Transverse test pieces

Thickness: < 1 mm ;

Elongation: > 15 %

Thickness: 1.0 - 1.5 mm ;

Elongation: > 16 %

Thickness: 1.5 - 2.0 mm ;

Elongation: > 17 %

Thickness: 2.0 - 2.5 mm ;

Elongation: > 18 %

S235JR EN 10025-2 (Euronorm)

Thickness: 2.5 - 3.0 mm ;

Elongation: > 19 %

Thickness: 3 - 40 mm ;

Elongation: > 24 %

Thickness: 40 - 63 mm ;

Elongation: > 23 %

Thickness: 63 - 150 mm ;

Elongation: > 22 %

Thickness: 150 - 250 mm ;

Elongation: > 21 %

Impact test

Thickness: < 150 mm ;

Impact energy KV 20°C: > 27 J

Thickness: 150 - 250 mm ;

Impact energy KV 20°C: > 27 J

Physical characteristics

Density: 7.85 g/cm³

Weldability

By ISO 15608

Group: 1.1

ASME Section IX

Welding

P-Number: 1

Group: 1