

P275SL

Steels for the manufacture of simple pressure vessels

Material no.	1.1100
according to	DIN EN 10207 (2005)
Tensile strength class	A

Usage

These steel grades are characterised by a good weldability.

The user of these steel grades must make sure that his calculation, design and processing methods are appropriate for the material.

Chemical composition

(in percent by weight)

	min.	max.
C		0.160%
Si		0.400%
Mn	0.500%	1.500%
P		0.025%
S		0.020%
Al	0.020% ¹⁾	

¹⁾ The minimum aluminium content does not apply if the steel contains sufficient quantities of other nitrogen-fixing elements.

Notch impact energy

If agreed in the order, the notch impact energy is proved using longitudinal samples at -20 °C. Average values of 3 samples; one individual value may fall short of the required minimum value by not more than 30 %.

The sample width shall equal the product thickness if the latter is between 6 and 10 mm. The tests are performed by using samples similar to Charpy-V samples.

The values specified in the table above are to be reduced proportionally to the sample width.

Mechanical properties ¹⁾

Nom. thick. e	Yield strength R _{p0,2}
< 16 mm	≥ 275 MPa
≥ 16 mm	≥ 265 MPa

Nom. thick. e	Tensile strength R _m
	390 – 510 MPa

Nom. thick. e	Total elongation A ²⁾
2 < e ≤ 2.5 mm	≥ 19 %
2.5 < e < 3 mm	≥ 20 %
≥ 3 mm	≥ 24 %

¹⁾ It applies to nominal thickness e:
e < 3 mm: A_{B0}
e ≥ 3 mm: A₅

Yield point at elevated temperature

Test temperature	Yield point at elev. temperature R _{p0,2}
100°C	≥ 221 MPa
150°C	≥ 203 MPa
200°C	≥ 176 MPa
250°C	≥ 159 MPa
300°C	≥ 132 MPa

Available dimensions

Hot-rolled coils unpickled, mill edge

Thickness in mm	Width in mm
1.50 – 1.79	900 – 1250
1.80 – 1.99	900 – 1390
2.00 – 2.24	900 – 1540
2.25 – 2.49	900 – 1700
2.50 – 2.99	900 – 1880
3.00 – 3.99	900 – 1880
4.00 – 6.00	900 – 1880
6.01 – 12.70	900 – 1880

Widths < 900 mm and thicknesses > 12.70 mm on request

Hot-rolled slit strip

Thickness in mm	Width in mm
1.50 – 1.79	100 – 515
1.80 – 1.99	100 – 635
2.00 – 2.24	100 – 760
2.25 – 7.00	100 – 800
7.01 – 8.00	140 – 800
8.01 – 9.00	175 – 800
9.01 – 10.00	233 – 800

Widths < 100 mm on request

Welding

The steel grades of this series may be welded by means of the usual welding techniques.

Condition of delivery, scope of testing and certificate

The products are delivered in a condition obtained by normalised rolling. The provisions of EN 10207 shall apply for delivery and inspection, chapters 8.2 and 9.