SALZGITTER FLACHSTAHL
A member of the Salzgitter Group

16Mo3

Heat-resistant pressure-vessel steels

Material no.	1.5415
according to	DIN EN 10028-2
Tensile strength class	B

Usage

These steel grades are characterised by a good weldability. They are used above all for manufacturing boilers, pressure vessels and pipes transporting hot liquids.

The user of these steel grades must make sure that his calculation, design and processing methods are appropriate for the material. The grades of this series offer good cold and hot-forming properties.

Chemical composition [1) 2)]

(in percent by weight)

	min.	max.
C	0,12%	0,20%
Si		0,35%
Mn	0,40%	0,90%
P		0,025%
S		0,010%
N		0,012%
Cu		0,30% [3)]
Cr		0,30%
Ni		0,30%
Mo	0,25%	0,35%

1) Heat analysis

2) The Al-content of the melting is to determine and to indicate in the certification.

3) A lower Cu-content and a maximum tin content may be agreed in the order, e. g. with respect to formability.

Welding

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

Mechanical properties [1)]

Nom. thick. e	Yield strength R_{eH}
≤16 mm	≥ 275 MPa
>16 mm	≥ 270 MPa

Nom. thick. e	Tensile stength R_m
≤25 mm	440 – 590 MPa

Nom. thick. e	Total elongation A_5
≤25 mm	≥ 22 %

1) Transverse samples, normalised

Notch impact energy [1)]

Temperature	Notch impact energy
+20°C	≥ 31J
0°C [2)]	–
-20°C [2)]	–

1) 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.

2) A value can be agreed on in the request and order.

Condition of delivery, scope of testing and certificate

The provisions of EN 10028-2, chapters 8.2 and 9 shall apply for delivery and inspection. The steel grade 16Mo3 is delivered in the as-rolled condition; the test is carried out on simulating heattreated samples (normalised and tempered).

Yield point at elevated temperature

Test temperature	Yield point at elev. temp. $R_{p0,2}$ e ≤ 16 mm	e > 16 mm
50°C	≥ 273 MPa	≥ 268 MPa
100°C	≥ 264 MPa	≥ 259 MPa
150°C	≥ 250 MPa	≥ 245 MPa
200°C	≥ 233 MPa	≥ 228 MPa
250°C	≥ 213 MPa	≥ 209 MPa
300°C	≥ 194 MPa	≥ 190 MPa
350°C	≥ 175 MPa	≥ 172 MPa
400°C	≥ 159 MPa	≥ 156 MPa
450°C	≥ 147 MPa	≥ 145 MPa
500°C	≥ 141 MPa	≥ 139 MPa

Available dimensions

Hot-rolled coils unpickled, mill edge

Thickness in mm	Width in mm
2,00 – 2,24	900 –1400
2,25 – 2,49	900 –1450
2,50 – 2,99	900 –1500
3,00 – 3,99	900 –1680
4,00 –12,70	900 –1750

Widths < 900 mm and thicknesses > 12.70 mm on request

Hot-rolled slit strip

Thickness in mm	Width in mm
2,00 – 2,24	100 – 690
2,25 – 2,49	100 – 715
2,50 – 2,99	100 – 740
3,00 – 4,60	100 – 800
4,61 – 6,00	116 – 800
6,01 – 7,00	175 – 800
7,01 – 8,00	233 – 800

Widths <100 mm on request

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