



## 42CrMo4

Quenched and tempered steels

<b>Material no.</b>	17225
according to	DIN EN ISO 683-2
Tensile strength class	D

### General

The steel grade 42CrMo4 belongs to the product category of quenched and tempered steels according to DIN EN ISO 683-2. These are used for highly stressed components, where the combination of high strength and wear-resistance with tenaciousness is of utmost importance.

### Chemical composition<sup>1)2)</sup>

(in percent by weight)

	min. in %	max. in %
C	0.38	0.45
Si <sup>3)</sup>	0.10	0.40
Cu		0.40
Mn	0.60	0.90
P <sup>4)</sup>		0.020
S <sup>4)</sup>		0.010
Cr	0.90	1.20
Mo	0.15	0.30

1) Heat analysis

2) Reference analysis

3) Steels may be supplied with lower silicon content. In this case, other materials must be used to kill the steels.

4) According to DIN EN ISO 683-2 the following is applicable:

P ≤ 0.025 % und S ≤ 0.035 %

### Mechanical properties<sup>5)</sup>

Test direction	Yield strength R <sub>p0.2</sub> in MPa
longitudinal	600 - 900
transversal	650 - 950

Test direction	Tensile strength R <sub>m</sub> in MPa
longitudinal	850 - 1,050
transversal	900 - 1,100

Test direction	Total elongation A <sub>80</sub> <sup>6)</sup> in %
longitudinal	5 - 10
transversal	5 - 9

Test direction	Total elongation A <sub>5</sub> <sup>6)</sup> in %
longitudinal	8 - 15
transversal	6 - 14

5) The values in the table above are mainly from coil ends. Slightly lower values are to be expected in the middle of the coil.

The mechanical properties are not standardized for the condition of delivery.

6) The following applies to the nominal thickness e:

e < 3 mm: A<sub>80</sub>

e ≥ 3 mm: A<sub>5</sub>

Hot-rolled coils pickled, mill edge

Thickness in mm	Width in mm
2.00 - 2.20	900 - 1,300
2.21 - 2.99	900 - 1,350
3.00 - 3.99	900 - 1,450
4.00 - 4.99	900 - 1,500
5.00 - 7.99	900 - 1,530
8.00 - 10.00	900 - 1,450

Trimmed material up on request.

Hot-rolled coils, slit lengthwise

Thickness in mm	Width in mm
2.00 - 2.99	100 - 640
3.00 - 4.60	100 - 690
4.61 - 6.00	100 - 740

Widths up to 100 mm on request.

Thicknesses > 6 mm on request.

### Available dimensions

Hot-rolled coils unpickled, mill edge

Thickness in mm	Width in mm
2.00 - 2.20	900 - 1,300
2.21 - 2.99	900 - 1,350
3.00 - 3.99	900 - 1,450
4.00 - 4.99	900 - 1,500
5.00 - 5.99	900 - 1,650
6.00 - 15.00	900 - 1,700

Thicknesses up to 25 mm on request.

Widths up to 2,000 mm on request.





# SALZGITTER FLACHSTAHL

A Member of the Salzgitter Group

## 42CrMo4

Quenched and tempered steels

### Microstructure

The 42CrMo4 in hot rolled state usually has a ferritic-pearlitic microstructure with a typical grain size of > 9 ASTM.



200:1



500:1

### Examples of application

Parts with high tenaciousness used in the automotive and aircraft industry, such as axle legs, axles, drive rods, crankshafts, pinions, gearwheels, linings, link plates, belt buckles, springs, saw blades, knives and scissors.

### Condition of delivery, scope of testing and certificate

The provisions of DIN EN ISO 683-2, chapters 6.3.1 und 8 shall apply for delivery and inspection. All quenched and tempered steels are delivered in a hot-rolled and untreated condition.

Test certificates according to DIN EN 10204 can be supplied as follows: EDP, remote data transmission, fax, e-mail, paper.

Commitments regarding certain properties or a certain purpose of use require written agreements. Technical changes as well as typesetting and printing errors reserved



**SALZGITTER  
FLACHSTAHL**  
A Member of the Salzgitter Group

Salzgitter Flachstahl GmbH / Eisenhüttenstraße 99 / 38239 Salzgitter  
PHONE +49(0)53 41 21 28 90 / MAIL [flachstahl@salzgitter-ag.de](mailto:flachstahl@salzgitter-ag.de)  
[www.salzgitter-flachstahl.de](http://www.salzgitter-flachstahl.de)