



16MnCr5

Case-hardened steels

Material no.	1.7131
according to	DIN EN 10084
Tensile strength class	B

General

When either hot- or cold-rolled, casehardened steels are predominantly used for transmission parts (plate springs, clutch disks). The hot-rolled steels offer good punching quality and formability. After case-hardening, the finished components have a very strong core, whereas the surface is characterised by good wear resistance.

As the melting and hot-rolling conditions have an effect on further treatment at the customer, the customer should always state the intended use when placing an order.

Chemical composition¹⁾²⁾

(in percent by weight)

	min. in %	max. in %
C	0.14	0.19
Si ³⁾		0.40
Mn	1.00	1.30
P ⁴⁾		0.025
S ⁴⁾		0.025
Cr	0.80	1.10

1) Heat analysis

2) Deviating commitments possible according to agreement.

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

4) According to DIN EN ISO 683-3 the following is applicable: P ≤ 0,025 % and S ≤ 0,035 %

Mechanical properties⁵⁾⁶⁾

Yield strength R_{p0,2} in MPa
350 – 550

Tensile strength R_m in MPa
530 – 680

Total elongation A₈₀⁷⁾ in %
10 – 25

Total elongation A₅⁷⁾ in %
15 – 30

5) The specifications apply only to unannealed material.

Hot-rolled strip values are not specified in the untempered condition.

6) The values for the mechanical properties are determined on transverse samples.

7) It applies for the nominal thickness e:

e < 3 mm: A₈₀

e ≥ 3 mm: A₅

Available dimensions

Hot-rolled coils unpickled, mill edge

Thickness in mm	Width in mm
2.00 – 2.24	900 – 1,400
2.25 – 2.49	900 – 1,450
2.50 – 2.99	900 – 1,500
3.00 – 3.99	900 – 1,680
4.00 – 4.99	900 – 1,750
5.00 – 15.00	900 – 1,900

Thicknesses up to 25 mm on request.

Widths up to 2,000 mm on request.

Hot-rolled coils pickled, mill edge

Thickness in mm	Width in mm
2.00 – 2.24	900 – 1,400
2.25 – 2.49	900 – 1,450
2.50 – 2.99	900 – 1,500
3.00 – 3.99	900 – 1,680
4.00 – 4.99	900 – 1,750
5.00 – 5.99	900 – 1,900
6.00 – 12.49	900 – 1,560

Hot-rolled coils pickled, trimmed edge

Thickness in mm	Width in mm
2.00 – 2.24	900 – 1,380
2.25 – 2.49	900 – 1,430
2.50 – 2.99	900 – 1,480
3.00 – 3.99	900 – 1,660
4.00 – 4.99	900 – 1,730
5.00 – 5.99	900 – 1,880
6.00 – 6.99	900 – 1,510

Hot-rolled coils, slit lengthwise

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

Condition of delivery, scope of testing and certificate

The provisions of DIN EN 10084, chapters 6.4.1 and 8 shall apply for delivery and inspection. All case-hardened 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.