

30MnB5

Boron alloyed quenched and tempered steel

Material no.	–
according to	DIN EN 10083, Teil 3
Tensile strength class	B

General Information

This steel grade 30MnB5 belongs to the product category of quenched and tempered steels, and features outstanding forming properties in the soft delivery state and high strength after heat treatment (hardening). The material's strength is propagated by adding a small fraction of boron to the carbon, manganese and chromium composition.

Chemical composition ¹⁾

(melt analysis in percent by weight)

	min.	max.
C	0,27%	0,33%
Si	0,10% ³⁾	0,40%
Mn	1,15%	1,45%
P		0,025%
S		0,010% ³⁾
Al	0,015%	0,080%
N		0,010%
Cr	0,10% ³⁾	0,30% ³⁾
Ti	0,020% ³⁾	0,050% ³⁾
B	0,0010% ³⁾	0,0050%

1) restriction according to the specification of the norm

Typical mechanical properties ¹⁾

Nom. thick. e	Yield strength R _{p0,2}
	510 MPa

Nom. thick. e	Tensile strength R _m
	700 MPa

Nom. thick. e	Total elongation A ²⁾
A ₈₀	15 %
A ₅	20 %

1) derived from tensile tests transversal to rolling direction (reference value for a hot rolled coil)

2) For the nominal thickness e, the following applies:
e < 3 mm: A₈₀
e = 3 mm: A₅

Microstructure

The 30MnB5 in hot rolled state usually has a ferritic-pearlitic microstructure with a typical grain size of > 9 ASTM according to DIN 50602.



200:1

Available dimensions

Hot-rolled coils pickled, mill edge

Thickness in mm	Width in mm
2,00 – 2,99	900 – 1300
3,00 – 3,99	900 – 1450
4,00 – 8,00	900 – 1500

Widths < 900 mm on request

Hot-rolled slit strip

Thickness in mm	Width in mm
2,50 – 2,99	100 – 640
3,00 – 4,50	100 – 690
4,51 – 8,00	140 – 740

Widths < 100 mm on request

Examples of use

Welded precision steel tubes made of 30MnB5 can - for example - be used as stabilizers, drive and gear shafts and parts of passive safety by the automotive industry.

Moreover, agricultural engineers employ the material to build rotary harrows and plow blades. Within the building industry it is used for components subject to wear and tear.