

Precision Steel

precidur[®] HLB 42 / 40MnB4

Product information for hot-rolled precision strip made in Hohenlimburg



thyssenkrupp

Version 01/22

Boron-alloyed heat-treatable steel

BU Precision Steel supplies boron-alloyed heat treatable steels in accordance with DIN EN ISO 683, DIN EN 10083 and Stahl-Eisen list. They are a cost-effective alternative for substituting of heat-treatable steels and offer significantly better cold formability due to their low carbon content.

Depending on grade and application, boron-alloyed steels can be fine blanked without prior annealing. Boron steels offer good processing and forming properties even in the hot-rolled condition.

precidur[®]

- is used in virtually all industry sectors.
- offers close thickness tolerances similar to cold-rolled strip, optimum surface finishes and consistent material properties over the entire strip length and width.
- is characterized by its symmetrical strip profiles and mill edges.
- is the sum of all the experience we have gained in more than 100 years of manufacturing and processing steel.

Contents

Brief portrait
Technical features
Chemical composition
Mechanical properties
General thickness tolerances
Delivery options
Application examples

Technical features

Boron-alloyed heat-treatable steel

Material number:	1.5527
Material name:	40MnB4
Proprietary brand:	precidur® HLB 42
Delivery specification:	based on DIN EN 10083
Application:	Heat-treatable steel for parts in machinery and plant construction

Chemical composition

Ladle analysis mass percentages	C [%]	Si [%]	Mn [%]	P [%]	S [%]	Cr [%]	Al [%]	Ti [%]	B [%]
min.	0.38	0.15	0.80	-	-	0.20	0.020	0.020	0.0010
max.	0.44	0.40	1.10	0.020	0.008	0.40	0.060	0.060	0.0040

Further special analyses available

Mechanical properties

Longitudinal to rolling direction	Yield Strength Rp _{0.2} [MPa]	Tensile strength R _m [MPa]	Elongation A ₅ [%]
Rolled condition*	max. 560	max. 800	min. 17
GKZ annealed		max. 610	min. 24

* Modified strength target values can be agreed on request

Possible delivery options

Options	Mill edge (NK) Cut edge (GK)	pickled	unpickled	slit	trimmed	cut to length	annealed	not annealed
precidur® HLB 42	NK or GK	✓ or	✓	✓	✓	✓	✓	✓

General thickness tolerances

Strip thickness [mm]	1.5 – 2.54	2.55 – 4.03	4.04 – 6.03	6.04 – 8.03	8.04 – 9.03	9.04 – 11.03	11.04 – 14.03	14.04 – 16.00
Standard tolerances [mm]	± 0.04	± 0.04	± 0.05	± 0.055	± 0.06	± 0.07	± 0.08	± 0.10
Special tolerances [mm]	± 0.03	± 0.035	± 0.04	± 0.045	± 0.05	± 0.055	± 0.06	± 0.07

General delivery options

Coil inner diameter:	standard 508 mm / optional 610 mm
Coil outer diameter:	max. 1,890 mm
Coil weight:	max. 20.5 kg/mm strip width
Strip width*:	max. 720 mm
Strip thickness*:	1.5 – 16 mm

* May be subjected to restrictions.

Application examples for boron-alloyed heat-treatable steel



Special mill grades feature unique thyssenkrupp properties. Other terms and conditions of supply not specified here will be based on the applicable specifications. The specifications used will be those valid on the date of publication of this product information.

General information:

All statements as to the properties or utilization of material and products are for the purpose of description only. Guarantees in respect of the existence of certain properties or utilization are only valid if agreed in writing. Subject to technical changes. Reprints, in whole or in part, only with the permission of thyssenkrupp Hohenlimburg GmbH. The latest version of this product information can be found at: <https://www.thyssenkrupp-steel.com/en/publications/>

Please contact our sales/technical customer support team for detailed information.

thyssenkrupp Hohenlimburg GmbH, Oeger Str. 120, 58119 Hagen
T: +49 2334 91 2555
www.thyssenkrupp-steel.com, info.precisionsteel@thyssenkrupp.com