

**TATA STEEL**



## **Boron manganese steel**

High formability combined with ultimate wear resistance



# Easy and efficient to process

Boron manganese steel is easy to process into relatively complex shapes and gains its final hardness after heat treatment, ensuring a longer lifespan. Our boron manganese product family offers processing efficiencies through its extensive dimensions, consistent flatness and world-class surface quality.

Available in grades from 22MnB5 to 38MnB5, our boron manganese steel coils are made in our IJmuiden steelworks in the Netherlands and is supplied according to EN 10083. The range is available in your local area through a robust supply chain, offering tailor-made steel sheets and reduced lead times.



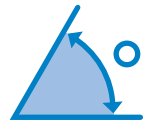
Longer lasting because of high wear resistance



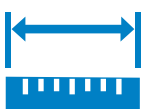
Consistent high quality strip production process, delivering cost efficiency



Thicker and wider (over 2m) than alternative strip products



Consistent dimensional tolerances and flatness



Coil can be cut to any length



Outstanding service and technical know-how of Tata Steel



Local supply on demand



High-quality finish



# A lasting performance for your applications

Based on more than a century of steel know-how and extensive market knowledge, we have developed our family of boron manganese steels to be robust and consistent. Designed as easy to process steel, it gains its final hardness when the end product is quenched and tempered, resulting in a longer life span. This type of wear resistant steel is typically used in heavy agricultural equipment, precision tubes and other parts for the automotive market, and oil and gas pipelines.

Reliable and consistent product quality, combined with unique dimensions in the market, results in multiple benefits for your processing operations, improving yield and reducing waste while offering trouble-free operating 24/7. Our boron manganese steel family has been thoroughly tested and with its carefully selected chemistry plus a robust supply chain, it is now the new benchmark in the industry.

## Key properties

- Boron manganese steels are available in unique thickness/width and in tailor-made lengths
- Superior surface quality versus alternative solutions in reversing mill plate
- Material provides state-of-the-art cleanliness
- Consistent dimensional tolerances and flatness exceeding the EN standard
- The benchmark CEV (carbon equivalent value) guarantees trouble-free processing
- Boron manganese steels offer guaranteed hardness values after quenching and tempering





# Why boron manganese steel?

## Efficiency

Our extensive dimensions in thickness, width and length combined with tight tolerances, provide you with an increased manufacturing efficiency, optimising yield and minimising waste.

## Service

A robust supply chain offering tailor made lengths and flexible lead times, plus support from technical experts with comprehensive application know-how.

## Quality

Consistent product quality with excellent surface, perfect flatness and tight tolerances. Boron manganese steel is the perfect substrate for your end product with guaranteed hardness after quenching and tempering. Its consistency ensures trouble-free processing 24/7.

## Availability

Boron manganese steels are generally available in thicknesses 3-20mm and 1000-2070mm widths. Some grades can also be offered as hot-rolled pickled and oiled. We can supply our material with a certificate of your choice.

For some dimensions, a minimum order quantity may apply. Please enquire for grade specific advice.

## Technical features

Grade	C		Mn		P	S	Si		Al		Cr		Ti		B		Calculated CEV	Calculated Brinell hardness
	min.	max.	min.	max.	max.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.		
22MnB5	0.210	0.250	1.200	1.300	0.020	0.010	0.200	0.300	0.020	0.060	0.150	0.250	0.020	0.035	0.0020	0.0035	0.49	175
26MnB5	0.240	0.280	1.200	1.400	0.015	0.010	0.200	0.250	0.020	0.060	0.100	0.180	0.020	0.035	0.0020	0.0035	0.52	180
27MnB5	0.245	0.275	1.150	1.250	0.020	0.010	0.200	0.250	0.020	0.060	0.200	0.300	0.020	0.035	0.0020	0.0035	0.52	180
27MnCrB5	0.260	0.300	1.200	1.350	0.020	0.010	0.150	0.300	0.020	0.060	0.300	0.400	0.020	0.035	0.0020	0.0035	0.57	185
30MnB5	0.280	0.310	1.100	1.300	0.020	0.010	0.200	0.250	0.020	0.060	0.150	0.250	0.020	0.035	0.0020	0.0035	0.56	190
34MnB5	0.330	0.370	1.200	1.400	0.15	0.010	0.200	0.250	0.020	0.060	0.100	0.180	0.020	0.035	0.0020	0.0035	0.61	200
38MnB5	0.360	0.400	1.200	1.300	0.020	0.010	0.200	0.300	0.020	0.060	0.200	0.300	0.020	0.035	0.0020	0.0035	0.65	215

All values are in weight%  
For alternative chemistries, please contact your sales representative, technical support engineer or our marketing department







## Added value for you

Our boron manganese steel family will provide improved end product performance. It will also help you to increase yield, save on processing and minimise waste.

Our supply chain, including our downstream operations and selected independent decoilers, provide a reliable supply chain delivering end-to-end cost efficiencies for you.

### Improve your end products

The chemistry of our boron manganese steel family is specially designed to ensure extreme wear resistance of your final product after quenching and tempering with water or oil. Using boron manganese steels can deliver:

- extended operational life
- reduced maintenance cost
- outstanding aesthetics
- extreme cleanliness

### Increase your manufacturing efficiency

Our boron manganese steel family is available in the most extensive strip dimension range in the market. This, combined with cutting sheets to tailor-made lengths, offers opportunities for:

- improved nesting yield
- minimised waste
- reduced processing such as welding

The consistent flatness, tight dimensional tolerances and surface quality of our boron manganese steel family enable:

- repeatable processing 24/7
- minimised part rejection rate
- increased yield
- potential for reducing shotblasting and other pre-painting requirements

Local supply on demand, through carefully selected channel partners, means:

- a flexible local service to match your needs
- reduced lead times for cut-to-length sheets





## Sustainable lifecycle

Our boron manganese steel family ensures a longer lifetime even in the toughest conditions, making it the sustainable choice

Our boron manganese steel family ensures a longer lifetime even in the toughest conditions, making it the sustainable choice.

The chemistry of our boron manganese steels is carefully selected to allow your products to be formed in complex shapes. The final strength of the end products, acquired from quenching and tempering means they can withstand the toughest working environments.

Boron manganese steels are typically used in abrasive environments such as working agricultural land, automotive parts that require extreme strength, or transporting abrasive fluids. The calculated hardness guarantees the lifecycle of the product, while the calculated CEV value allows for trouble-free processing.

All these factors combine to make our boron manganese steel family your sustainable choice.



anti-roll bar



# Supporting our customers

Our technical experts are always on hand to help you gain maximum advantage from boron manganese steels

We match product quality and local, flexible service with a commitment to working in partnership with you – helping you to get the best from boron manganese steels. Our knowledgeable and proactive customer technical services team offers technical consultancy and practical, hands-on support.

Decades of experience in supplying construction equipment, mining, and agriculture sectors means that we have a deep understanding of what customers require from our products. Using our steel know-how and application knowledge, we have worked closely with global brands to help them take advantage of our steel in their products to:

- maximise payload
- improve fuel efficiency
- save weight
- reduce component count
- boost production output
- increase the lifetime

Our technical experts are always on hand to help you gain maximum advantage from boron manganese steels. Our tailored product and process solutions are backed by world-class research and development facilities.

## Tata Steel

Tata Steel is one of the world's most geographically diversified steel producers, with operations and commercial offices presence across the world. In Europe, we are one of the largest steel producers. We serve many different and demanding markets worldwide including Automotive, Packaging, Engineering and Construction.

Our approach to business is unique. We focus on market sectors to allow us to better recognise the individual needs of our customers. We believe our strength is in how we build collaborative relationships that create new success for our customers, adding value to their business and helping them to perform in their markets.

## Discover what boron manganese steel family can do for you

Boron manganese steels offer consistent quality for long-lasting performance and multiple processing benefits.

For more information and to discuss how boron manganese steels could help improve your manufacturing efficiency and end products, please contact us:

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[www.tatasteleurope.com/heat-treatable-steel](http://www.tatasteleurope.com/heat-treatable-steel)



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