

## STEEL GRADE

Last revised: Tue, 28 Jan 2025 16:18:38 GMT

27MnB4 All

## General Information

Grade SB27M12B is a boron steel for general purposes without any specified mechanical properties. Its closest equivalent is found in the EN 10263-4:2001 grade 27MnB4. The difference is the manganese content. SB27M12B may serve as wear parts in graders and snowploughs but also suitable for agriculture machinery.

## Similar designations

SB27M12B - 27MnB5-4

## Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	B %
SB27M12B	CC	CEV 0.53 <sub>max</sub>	Min	0.25	0.15	1.10	-	0.015	0.10	0.0010
		Pcm 0.38 <sub>max</sub>	Max	0.30	0.35	1.30	0.035	0.035	0.30	0.0060
27MnB4 EN 10263-4:2001	CC	CEV 0.57 <sub>max</sub>	Min	0.25	0.15	0.90	-	0.015	0.10	0.0008
		Pcm 0.42 <sub>max</sub>	Max	0.30	0.35	1.20	0.035	0.035	0.30	0.0050

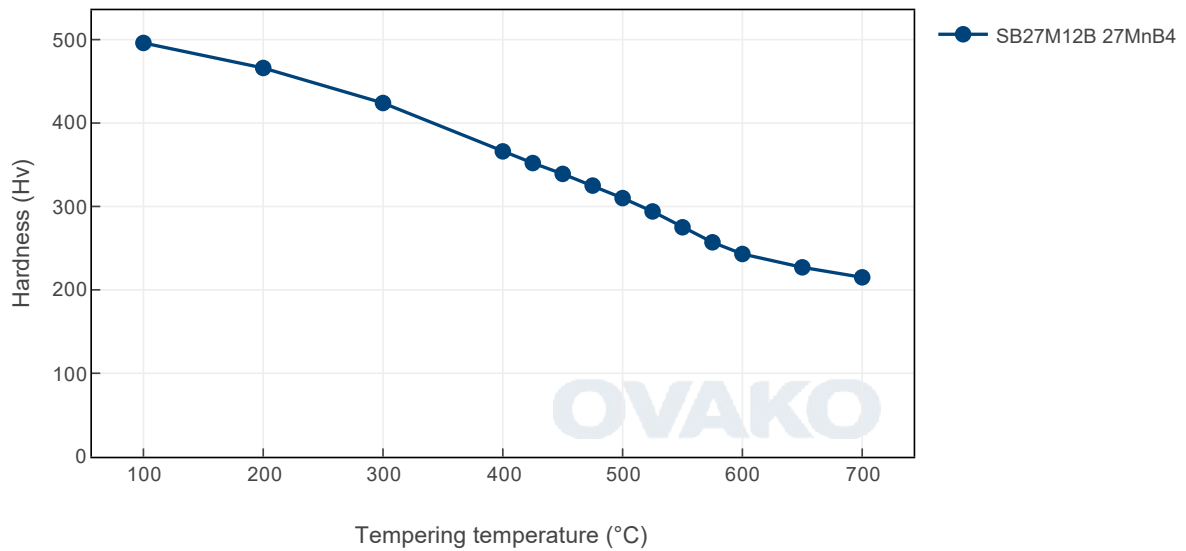
## Transformation temperatures

	Temperature °C
MS	384
AC1	721
AC3	787

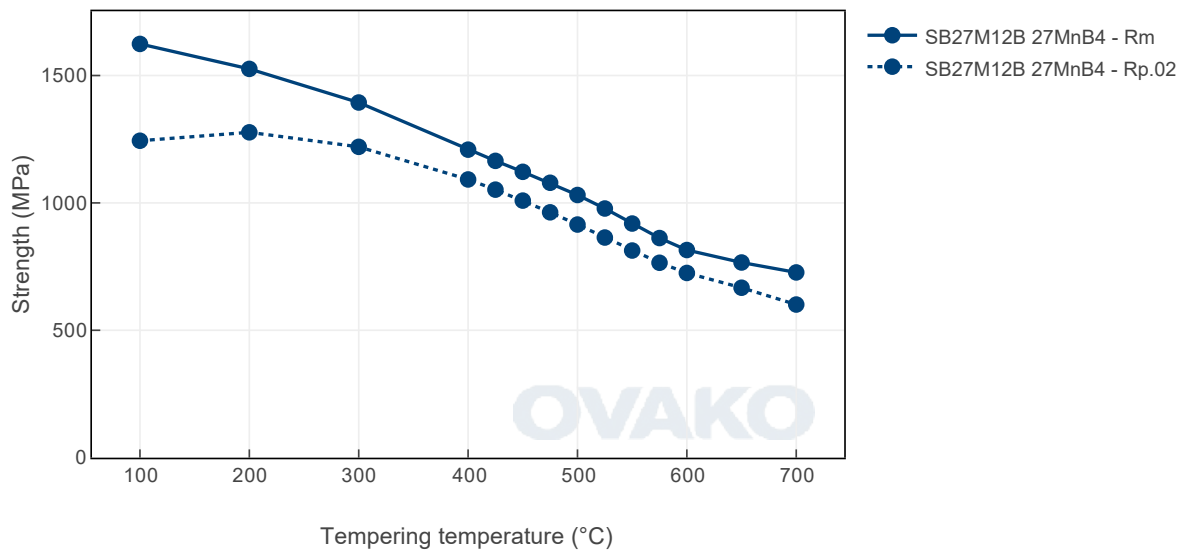
## Heat Treatment Guide generated Graphs

The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.

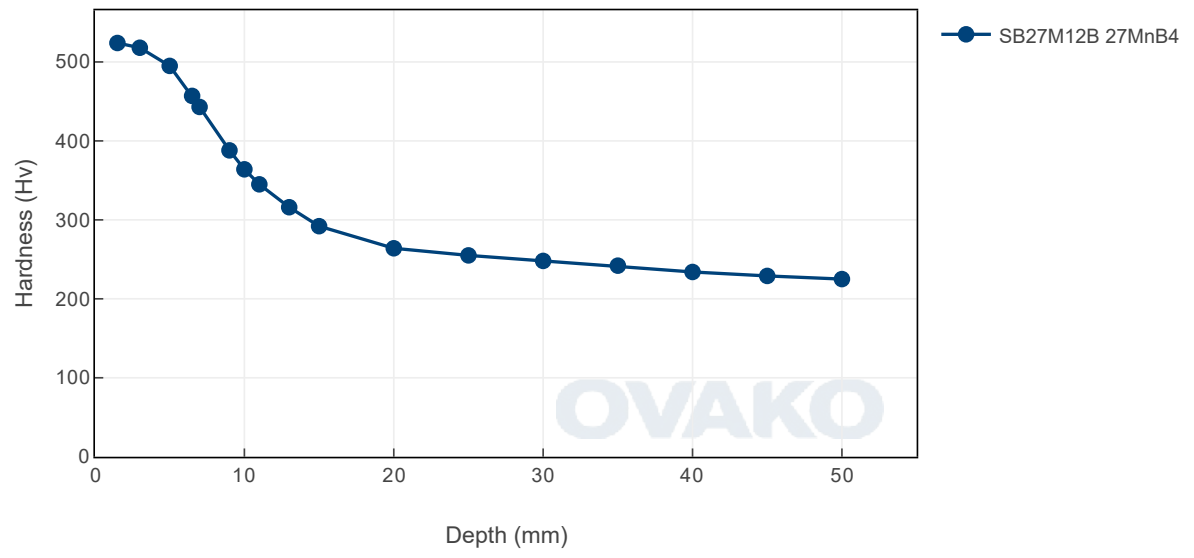
Tempering Diagram (hardness)



Tempering Diagram (strength)

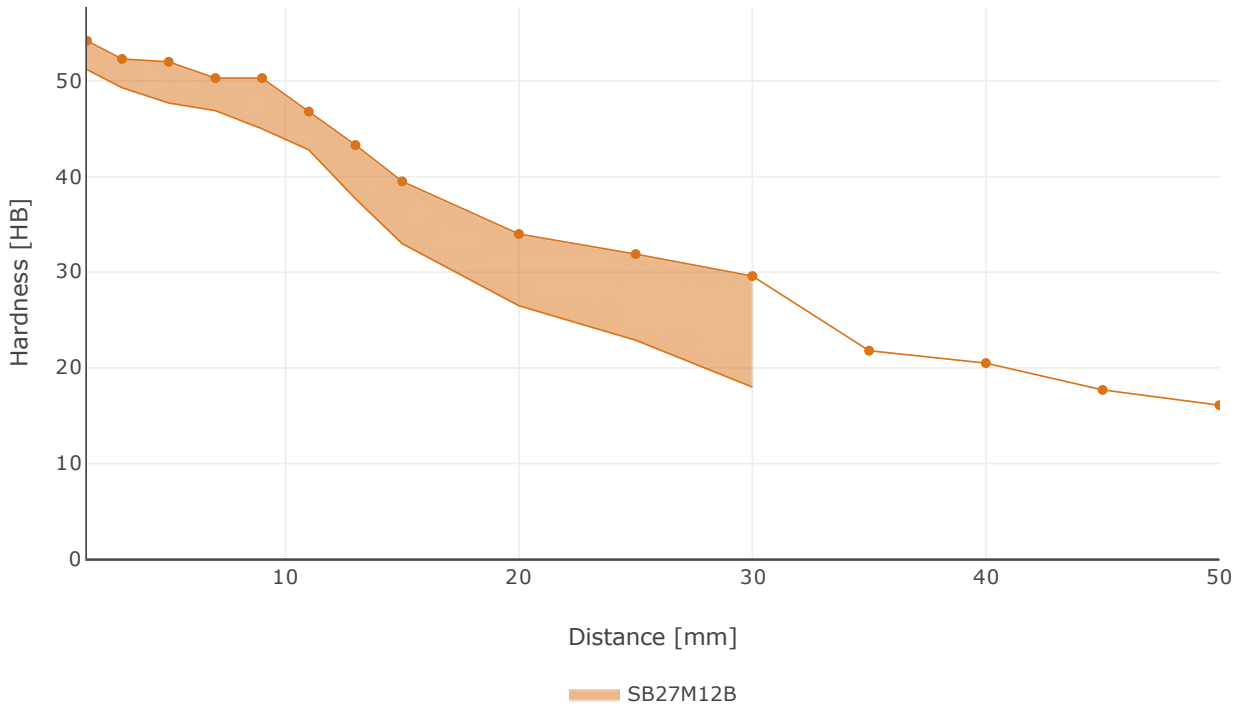


# Jominy





## Hardenability



## SUSTAINABILITY-ENVIRONMENTAL IMPACT DATA

At Ovako sustainability and reduction of our environmental impact is a major focus in everything we do.

Further information is found [here](#).

Steel works	Hofors	Smedjebacken	Imatra
CO2e/kg	120	62	76

To get the full picture of our products environmental impact we have to look at all of our CO<sub>2</sub> emission sources.

Not only the steel work Scope 1-2 itself, but all operations downstream in our production, heating and heat treatment furnaces etc (full scope 1-2) as well as all the emission from input material, eg. alloys, scope 3.

Steel Grade	Format	Condition	Scope 1-3 (CO2e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO2e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
SB27M12B	Flat bar	+AR	438	168

All above data are to be seen as typical values for the specified format and condition. Detailed information about your specific product please contact your sales contact.

## Other properties (typical values)

Youngs module (GPa)	Poisson´s ratio (-)	Shear module (GPa)	Density (kg/m3)
210	0.3	80	7800
Average CTE 20-300°C (µm/m°K)	Specific heat capacity 50/100°C (J/kg °K)	Thermal conductivity Ambient temperature (W/m°K)	Electrical resistivity Ambient temperature (µΩm)
12	460 - 480	40 - 45	0.20 - 0.25

## Contact us

Would you like to know more about our offers? Don´t hesitate to contact us:

Via e-mail: [info@ovako.com](mailto:info@ovako.com)

Via telephone: +46 8 622 1300

For more detailed information please visit <http://www.ovako.com/en/Contact-Ovako/>

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