

28MnB5* All

General Information

Grade SB27M12Bm is boron steel used in quenched and tempered condition. The material is suitable for moderately or highly stressed parts such as wear parts on agricultural, forestry and excavators. The grade has tighter chemical analysis than grade SB27M12CB and is recommended for thickness ≤15 mm. Its closest equivalent is 28MnB5 (1.0871).

Similar designations

SB27M12Bm - 26MnB5-3, 1.0871

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	Al %	B %
SB27M12Bm	CC	CEV 0.53 _{max}	Min	0.25	0.15	1.10	-	-	0.15	0.010	0.0010
		Pcm 0.38 _{max}	Max	0.30	0.35	1.30	0.025	0.015	0.25	0.040	0.0050
28MnB5	CC	CEV 0.57 _{max}	Min	0.25	0.15	1.00	-	-	-	-	0.0008
		Pcm 0.4 _{max}	Max	0.32	0.40	1.50	0.035	0.035	0.30	0.020	0.0050

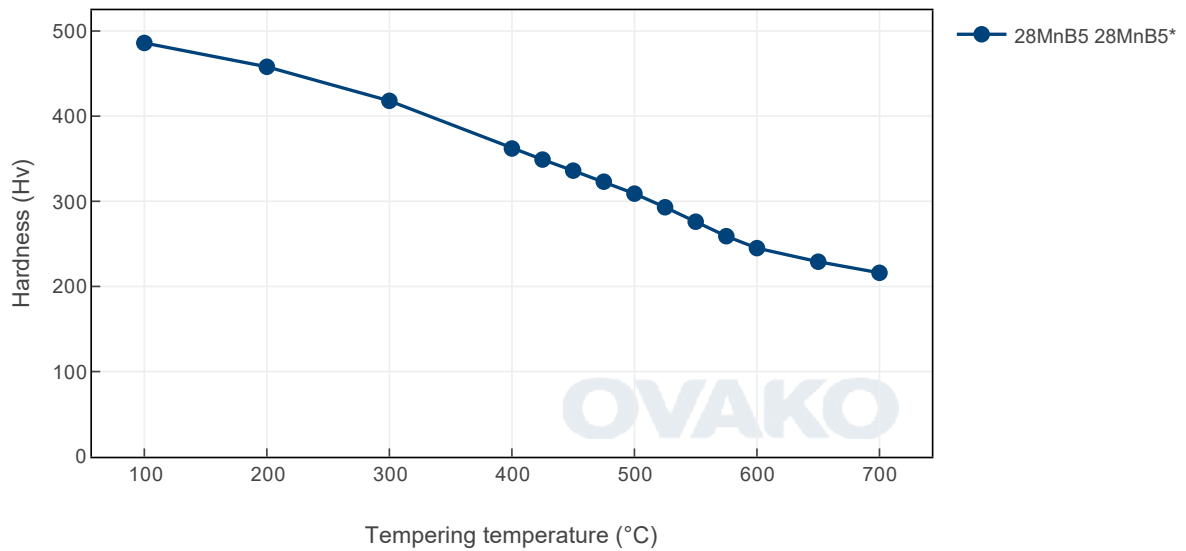
Transformation temperatures

	Temperature °C
MS	379
AC1	720
AC3	784

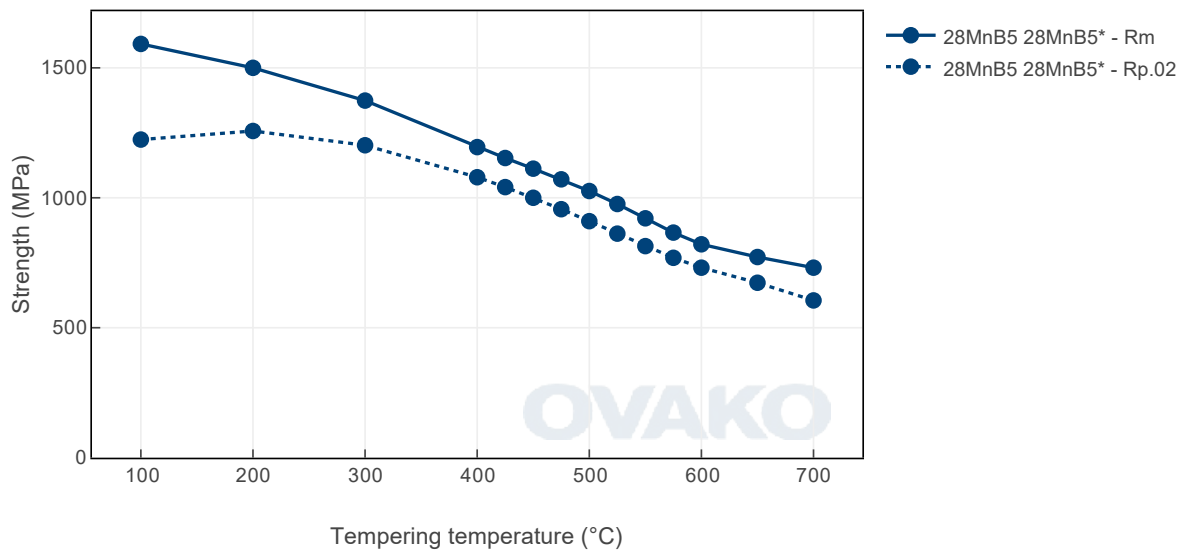
Heat Treatment Guide generated Graphs

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.

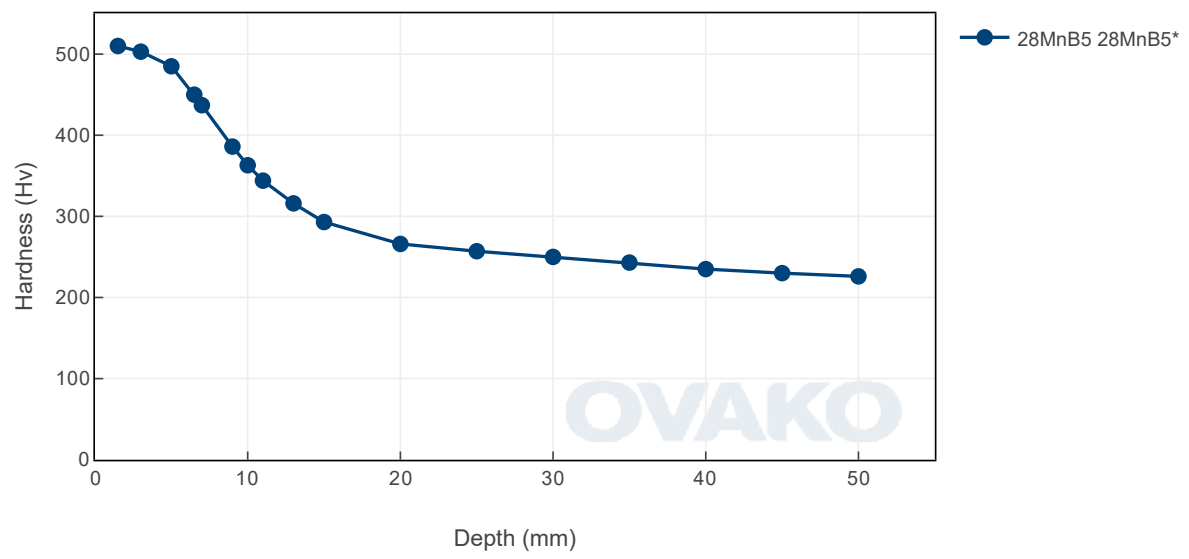
Tempering Diagram (hardness)



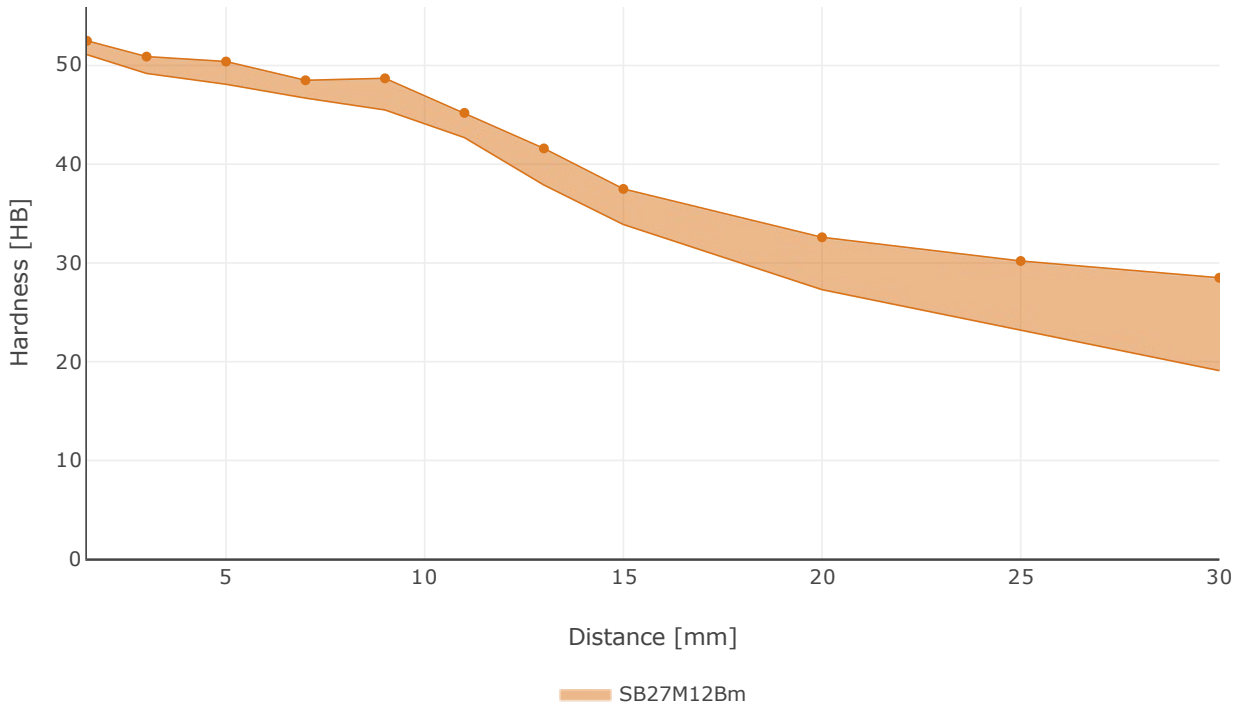
Tempering Diagram (strength)



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](#).

In many international comparisons the crude steel Scope 1-2 emission is a key parameter, ie. the CO₂ emission from the steel works itself.

As of 1 January 2022 we carbon offset all our scope 1 and 2 volume shown below.

Steel works	Hofors	Smedjebacken	Imatra
CO ₂ e/kg	120	62	76

To get the full picture of our products environmental impact we have to look at all of our CO₂ 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 (CO ₂ e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO ₂ e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
28MnB5	Flat bar	+AR	409	172
SB27M12Bm	Flat bar	+AR	398	162

As of 1 January 2022 we use carbon offset for all our scope 1- 2 emissions, so in practice the climate compensated data is the same as the full Scope 3 level.

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:

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

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