Material data sheet
Steel grade

Last revised: Thu, 23 Feb 2023 16:19:57 GMT

22MnB5 All

General Information

Grade SB24M13B is a boron steel for general purposes without any specified mechanical properties.Its closest equivalent is found in the standard number 22MnB5.This grade is suitable to serve as chains (side-links) in materials handling equipment of various kinds that are exposed to heavy wear and varying stresses (bending, tensile, fatigue). This grade also works well as wear parts in snow ploughs/graders and in the machinery of agriculture machines because of its good hardness and toughness in heat-treated condition in dimensions up to Ø 40 mm or equivalent thickness.

Similar designations

SB24M13B - 24MnB5-4, 1.5528

Chemical composition

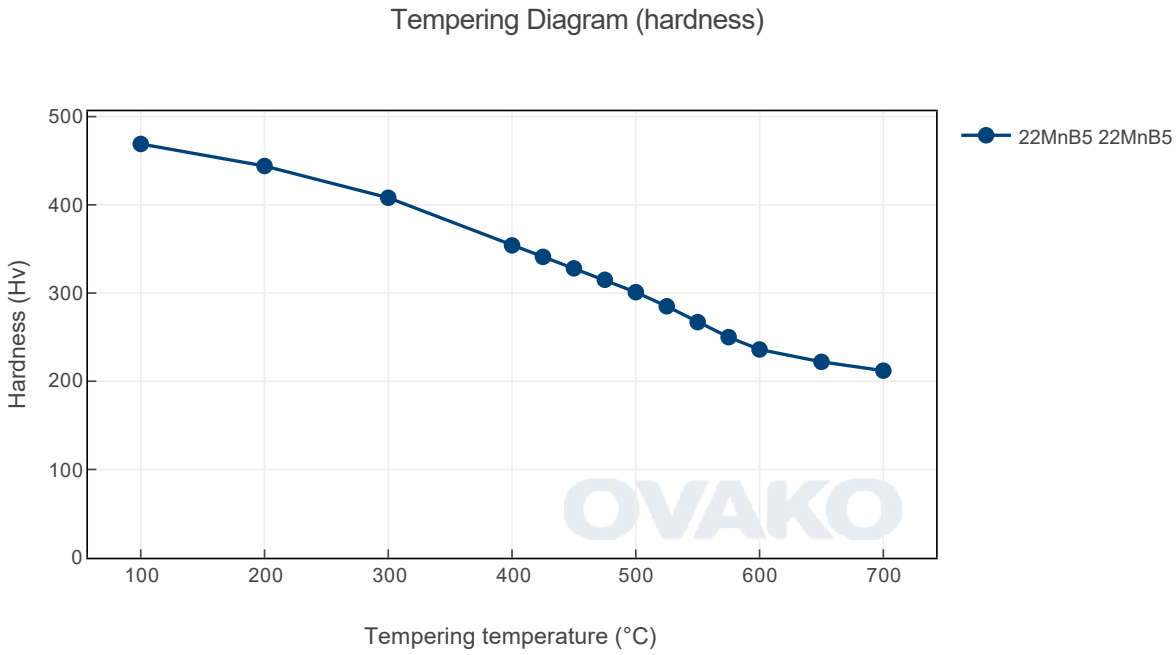
Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %	B %
SB24M13B	CC	CEV 0.51_{max}	Min	0.22	0.15	1.20	-	-	0.10	0.0010
		Pcm 0.35_{max}	Max	0.26	0.35	1.40	0.035	0.035	0.30	0.0060
22MnB5	Std	CEV 0.52_{max}	Min	0.19	-	1.10	-	-	-	0.0008
		Pcm 0.33_{max}	Max	0.25	0.40	1.40	0.025	0.015	0.40	0.0050

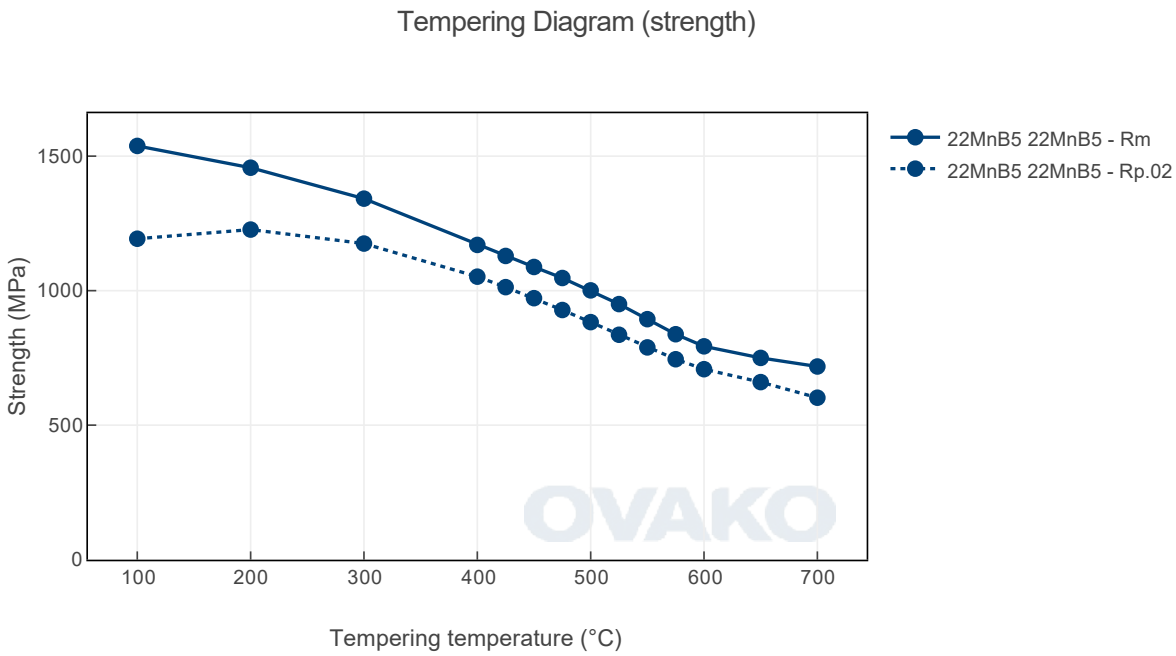
Transformation temperatures

	Temperature °C
MS	400
AC1	719
AC3	790

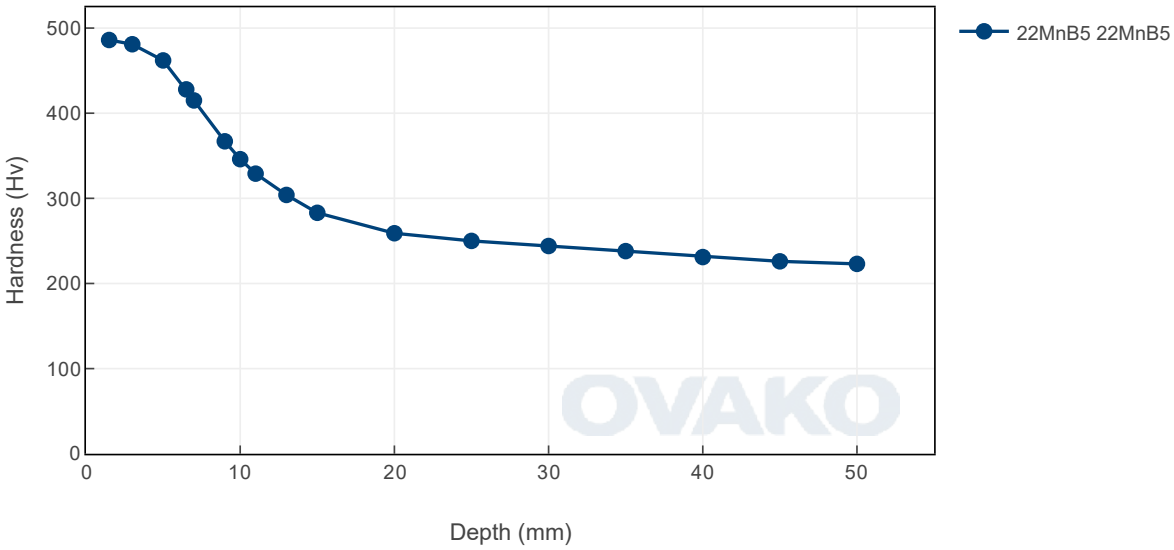
Heat Treatment Guide generated Graphs

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.

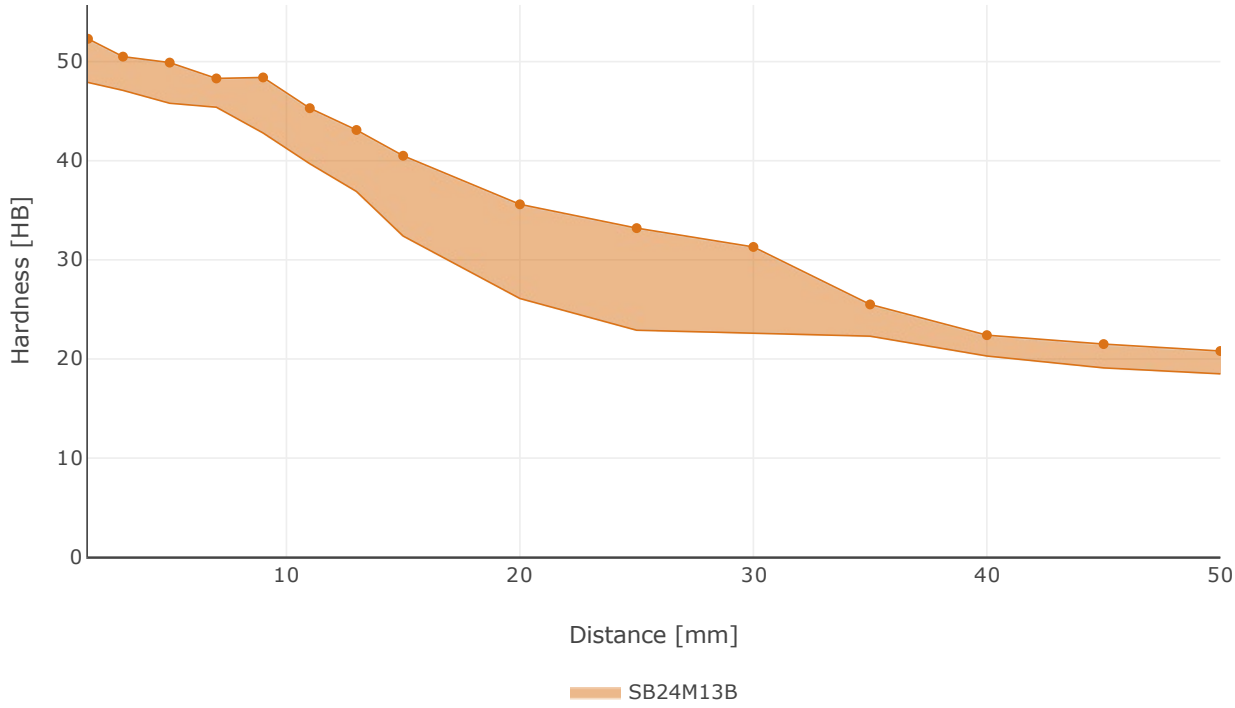




Jominy


Hardness (Hv)
500
400
300
200
100
0
0
10
20
30
40
50
Depth (mm)
22MnB5 22MnB5
OVAKO

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 CO_2 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
CO2e/kg	120	62	76

To get the full picture of our products environmental impact we have to look at all of our CO_2 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)
SB24M13B	Flat bar	+AR	547	180
22MnB5	Flat bar	+AR	547	180

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 resistivityAmbient 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/