

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

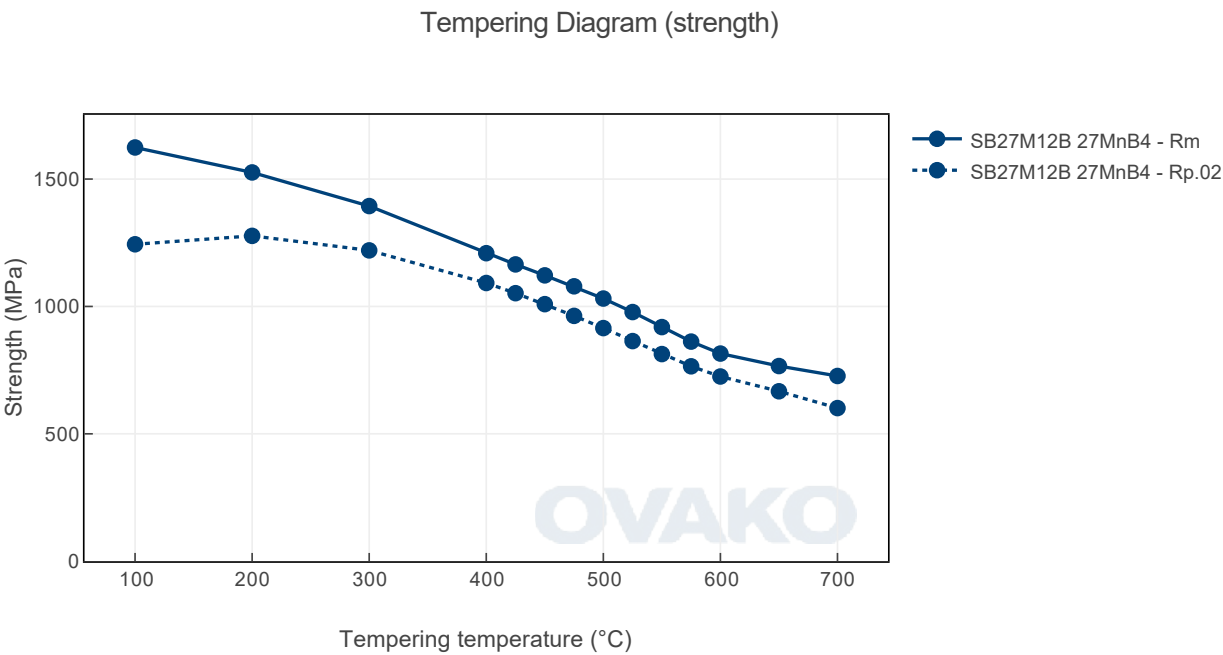
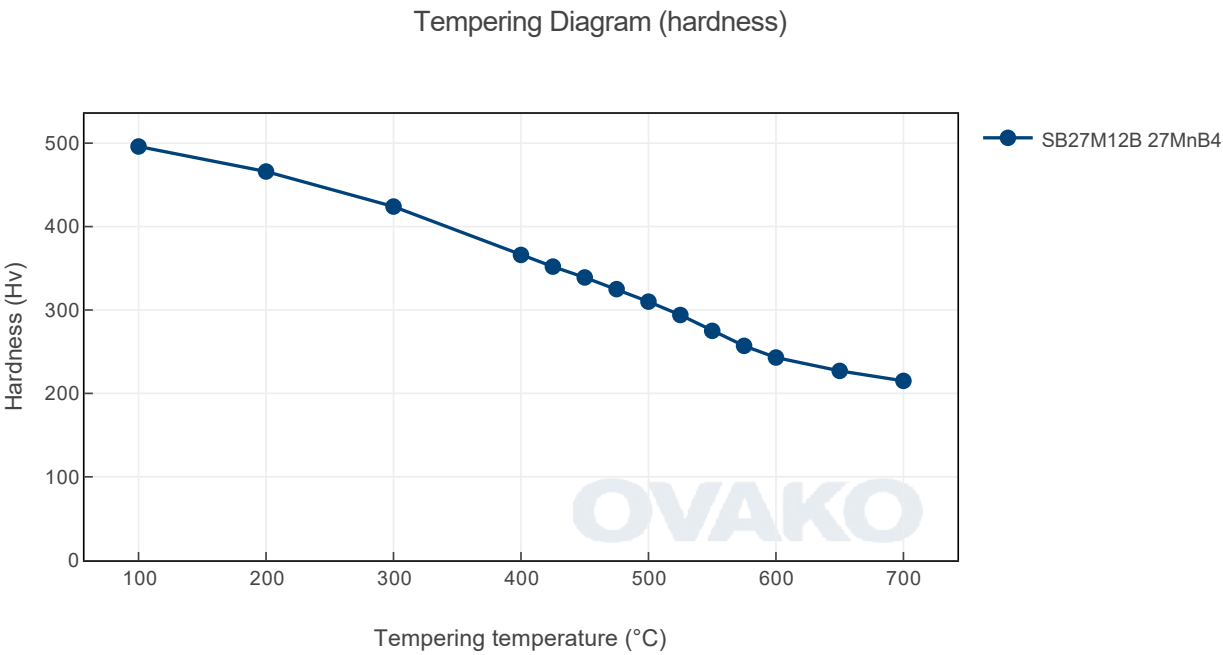
| Variant | Cast | Weldability | | C % | Si % | Mn % | P % | S % | Cr % | B % |
|------------------------|------|-------------------------|-----|------|------|------|-------|-------|------|--------|
| SB27M12B | CC | CEV 0.53 _{max} | Min | 0.25 | 0.15 | 1.10 | - | 0.015 | 0.10 | 0.0010 |
| | | Pcm 0.38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

Transformation
temperatures

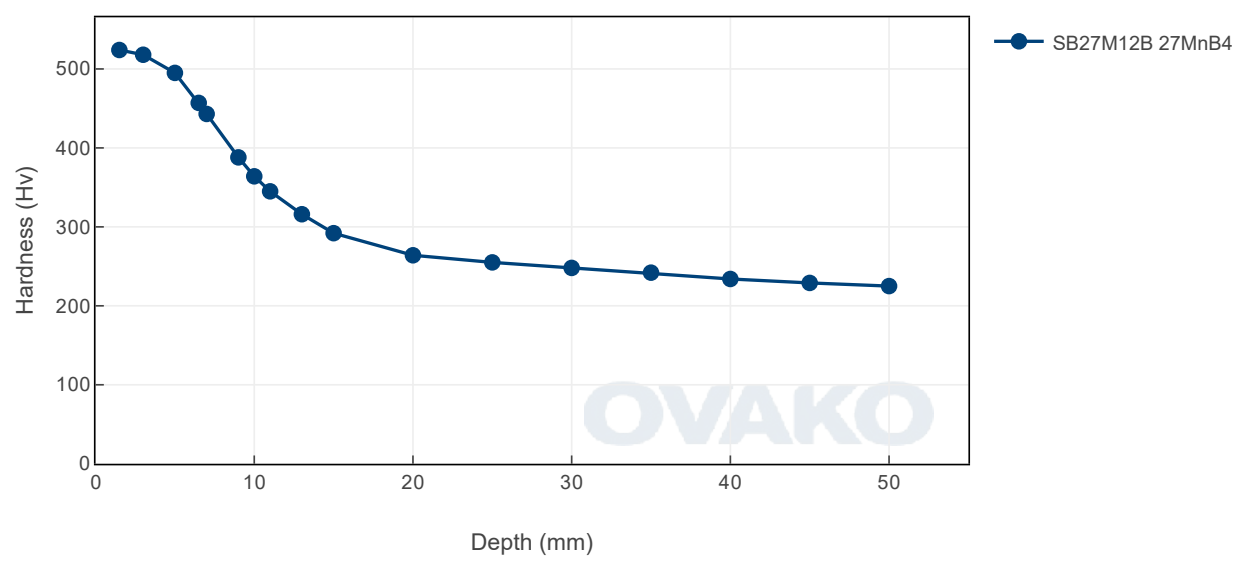
| | Temperature °C |
|-----|----------------|
| MS | 384 |
| AC1 | 721 |
| AC3 | 787 |

Heat Treatment Guide generated Graphs

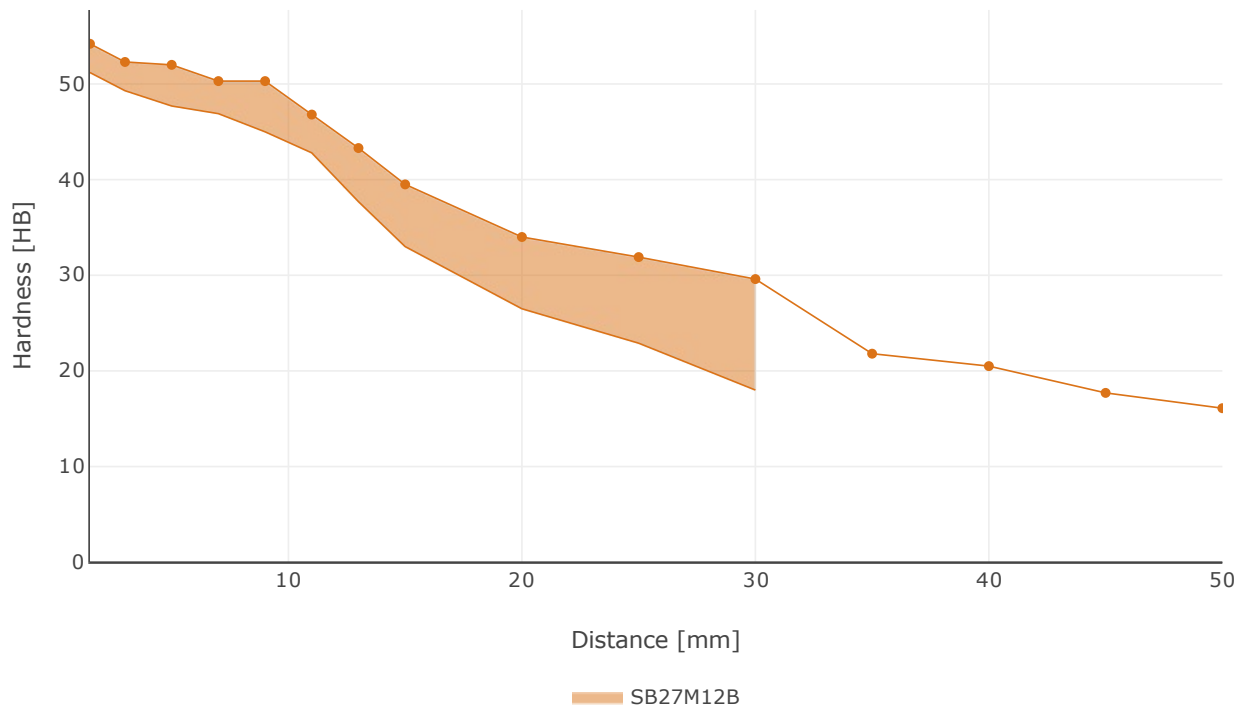
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



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 |
|----------------------|--------|--------------|--------|
| 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) |
|-------------|----------|-------------|---|--|
| 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/m ³) |
|-------------------------------|---|--|--|
| 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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Via telephone: +46 8 622 1300

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

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