

STEEL GRADE

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20MnB4

All

General Information

Grade SB21M10B is a boron steel for general purposes without any specified mechanical properties. Its closest equivalent is found in the EN 10263-4:2001 grade 20MnB4 but with a difference in boron and manganese content. SB21M10B is suitable for use in pegs, chains, simple wear parts and machinery parts as cogwheels and axles in dimensions up to Ø30 mm or equivalent thickness.

Similar designations

SB21M10B - 20MnB4-3, 20MnB5

Chemical composition

| Variant | Cast | Weldability | | C % | Si % | Mn % | P % | S % | Cr % | B % |
|------------------------|------|-------------------------|-----|------|------|------|-------|-------|------|--------|
| SB21M10B / 9625 | CC | CEV 0.43 _{max} | Min | 0.18 | 0.15 | 0.90 | - | - | 0.10 | 0.0010 |
| | | Pcm 0.3 _{max} | Max | 0.23 | 0.35 | 1.10 | 0.035 | 0.035 | 0.30 | 0.0060 |
| 20MnB4 EN 10263-4:2001 | Std | CEV 0.43 _{max} | Min | 0.18 | 0.15 | 0.90 | - | - | 0.10 | 0.0008 |
| | | Pcm 0.3 _{max} | Max | 0.23 | 0.35 | 1.20 | 0.035 | 0.035 | 0.30 | 0.0050 |

Transformation
temperatures

| | Temperature °C |
|-----|----------------|
| MS | 417 |
| AC1 | 723 |
| AC3 | 805 |

Heat treatment recommendations

| Treatment | Condition ⓘ | Temperature cycle | Cooling/quenching |
|-----------|-------------|--|-------------------|
| Quenching | +Q | 900 - 920 °C | water |
| Tempering | | none or at 200 °C for maximum hardness | |

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) |
|-------------|----------|-----------|---|--|
| SB21M10B | Flat bar | +AR | 403 | 166 |

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:

Via e-mail: 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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