

## 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	CC	CEV 0.43 <sub>max</sub>	Mn	0.18	0.15	0.90	-	-	0.10	0.0010
		Pcm 0.3 <sub>max</sub>	Max	0.23	0.35	1.10	0.035	0.035	0.30	0.0060
20MnB4 EN 10263-4:2001	CC	CEV 0.43 <sub>max</sub>	Mn	0.18	0.15	0.90	-	-	0.10	0.0008
		Pcm 0.3 <sub>max</sub>	Max	0.23	0.35	1.20	0.035	0.035	0.30	0.0050

### Mechanical Properties

Variant
Rp0.2 * Reh, ** Rel

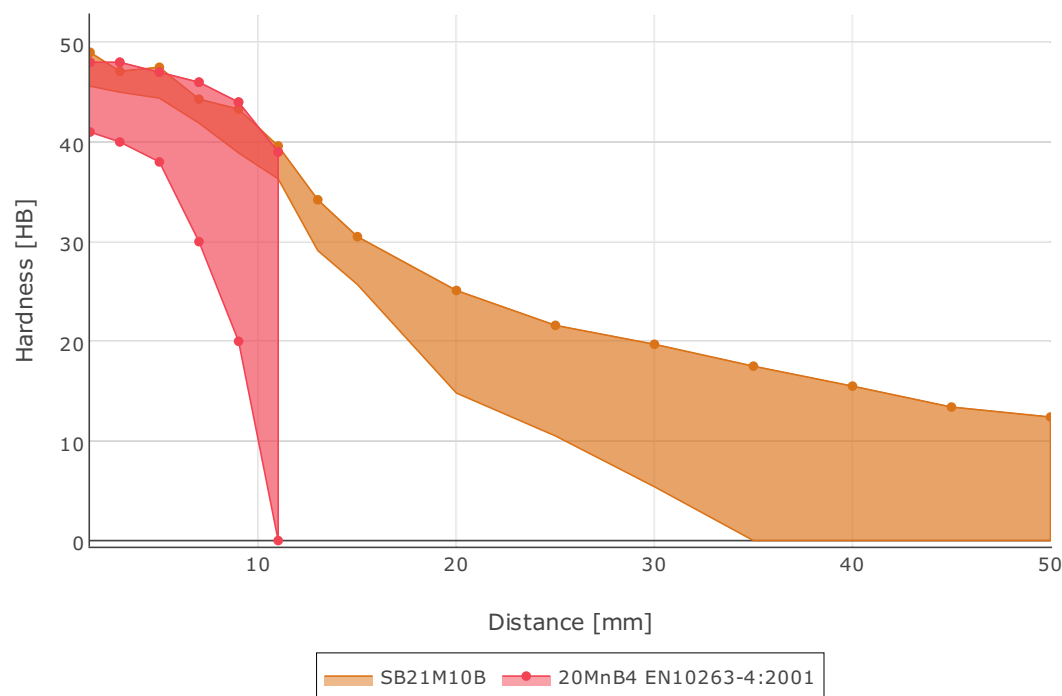
### Transformation temperatures

	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	

## Hardenability



## Other properties (typical values)

Youngs module (GPa)	Poisson's ratio (-)	Shear module (GPa)	Density (kg/m <sup>3</sup> )
210	0.3	80	7800
Average CTE 20-300°C (µm/m <sup>2</sup> K)	Specific heat capacity 50/100°C (J/kg <sup>2</sup> K)	Thermal conductivity Ambient temperature (W/m <sup>2</sup> K)	Electrical resistivity Ambient temperature (µΩm)
12	460 - 480	40 - 45	0.20 - 0.25

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