

#### General product description

Steeltec's Xtreme Performance Technology enables the boron-containing Q&T steel 33MnCrB5-2 to be modified to meet customer-specific processing or component requirements. As 33MnCrB5-2 XTP combines very high strength and toughness, it is particularly well suited for safety-relevant parts in automotive construction, such as chassis and suspension components and drive and transmission shafts. It is also suitable for components that are exposed to extremely low temperatures.

#### Mechanical-technological properties

Variant	R <sub>p0,2</sub> [MPa]	R <sub>m</sub> [MPa]	A <sub>5</sub> [%]	A <sub>g</sub> [%]	Z [%]	KV <sub>RT</sub> [J]	T <sub>27</sub> [°C]
high strength, extreme toughness	880	940	17	6	60	130	-101
very high strength, very high toughness	1090	1130	15	4	60	100	-80
very high strength, high toughness	1290	1350	12	3	60	50	-40

Typical mechanical-technological values.

R<sub>p0,2</sub> = yield strength (at 0.2% offset), R<sub>m</sub> = tensile strength, A<sub>5</sub> = elongation after fracture, A<sub>g</sub> = uniform elongation, Z = reduction of area at fracture, AV = notch impact energy (ISO-V, specimens), RT = room temperature, T = temperature, T<sub>27</sub> = transition temperature at 27 J

#### Chemical composition (cast analysis by mass-%)

Variant	C	Si	Mn	P	S	Cr	B
min.	0,30	-	1,20	-	-	0,30	0,0008
max.	0,36	0,40	1,50	0,025	0,035	0,60	0,0050

The chemical analysis corresponds to 33MnCrB5-2 (1.7185).

#### Maximum carbon equivalent

Max. CET (CEV) 0,55 (0,74)

Typ. CET (CEV) 0,50 (0,68)

$$\text{CET} = \text{C} + \frac{\text{Mn} + \text{Mo}}{10} + \frac{\text{Cr} + \text{Cu}}{20} + \frac{\text{Ni}}{40}$$

$$\text{CEV} = \text{C} + \frac{\text{Mn}}{6} + \frac{\text{Cr} + \text{Mo} + \text{V}}{5} + \frac{\text{Cu} + \text{Ni}}{15}$$

#### Surface properties

Bars are 100% eddy current tested acc. to surface quality class 3 of EN 10277-1. Bar ends untested on both sides with a length of 50 mm if not otherwise requested by customer.

#### Miscellaneous

Other agreements acc. to order.

#### Condition of delivery

- Bar, black or peeled
- Diameter range 18 – 40 mm, tolerance h11 (black) or h9 (peeled)
- Bar straightness 0,5 mm/m

#### Fabrication and other recommendations

Moderately good machinability, good cold workability, good weldability.

For further info on our product range of tool steel, stainless steel and Engineering steel please visit [www.swisssteelgroup.com](http://www.swisssteelgroup.com)

Discover our Green Steel portfolio on [www.swissgreensteel.com](http://www.swissgreensteel.com)

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Subject to change, errors and printing mistakes. The desired performance characteristics are only binding if they are exclusively agreed upon at the time of contract conclusion.

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