Technical Datasheet

Q&T Steel
33MnCrB5-2 XTP®

30.06.23 Rev. N°1

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	$R_{p0,2}$ [MPa]	R_m [MPa]	A_5 [%]	A_g [%]	Z [%]	KV_{RT} [J]	T_{27} [°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.
$R_{p0.2}$ = yield strength (at 0.2% offset), R_m = tensile strength, A_5 = elongation after fracture, A_g = uniform elongation, Z = reduction of area at fracture, AV = notch impact energy (ISO-V,specimens), RT = room temperature, T = temperature, T_{27} = 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)

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

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

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

Discover our Green Steel portfolio on www.swissgreensteel.com

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