Technical Datasheet

Micro-alloyed Steel 38MnVS6 XTP®

30.06.23 Rev. N°1

General product description

The micro-alloyed steel 38MnVS6 can be tailored to meet individual processing and component requirements through the application of Xtreme Performance Technology. Two optimization options are available. The focus in the process control can either be placed on the disproportionate increase of strength properties, which also achieves a significant increase in toughness. Alternatively, the focus can be on an extreme increase in ductile properties while significantly increasing strength.

Mechanical-technological properties

Variant	$R_{p0,2}$ [MPa]	R_m [MPa]	A_5 [%]	A_g [%]	Z [%]	KV_{RT} [J]	T_{27} [°C]
high strength, very high toughness	640	840	20	10	55	≥ 100	-60
very high strength, high toughness	950	1100	18	10	55	≥ 90	-40

Typical mechanical-technological properties:
$R_{p0.2}$ = 0.2% yield strength, R_m = tensile strength, A_5 = elongation at fracture, A_g = uniform elongation
Z = reduction of area, KV = Charpy impact strength according to DIN EN ISO 148-1:2017-05,
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	V
min.	0,34	0,15	1,20	–	0,020	–	0,08
max.	0,41	0,80	1,60	0,025	0,060	0,30	0,20

The analysis corresponds to 38MnVS6 (1.1303) according to DIN EN 10267.

Carbon equivalent

Max. CET (CEV) 0,60 (0,81)

Typ. CET (CEV) 0,55 (0,70)

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

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

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Surface properties

The surface condition complies with the requirements of SN EN 10277-1. The bars are crack-tested according to surface quality class 3 as standard. In the standard version, the ends of the bars up to 50 mm are not tested.

Miscellaneous

Other agreements according to order.

Condition of delivery

- Round bars, treated with XTP
- Dimension range 18 - 40 mm, tolerance h11
- Bar straightness 0,5 mm/m

Fabrication and other recommendations

Very good weldability, comparatively easy to machine, very good inductive hardenability.

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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