

General product description

The unalloyed steel C15 can be optimized for construction and machine parts with very high toughness requirements using Xtreme Performance Technology. The combination of good uniform elongation and very high toughness enables further processing by means of demanding cold forming.

Mechanical-technological properties

Variant	R _{p0,2} [MPa]	R _m [MPa]	A ₅ [%]	A _g [%]	Z [%]	KV _{RT} [J]	T ₂₇
High strength, very high toughness	400	500	26	13	65	≥ 150	-70

Typical mechanical-technological properties:

R_{p0,2} = 0.2% yield strength, R_m = tensile strength, A₅ = 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, T₂₇ = transition temperature of the Charpy impact strength at 27 J.

Chemical composition (cast analysis by mass-%)

Variant	C	Si	Mn	P	S
min.	0,12	–	0,30	–	–
max.	0,18	0,40	0,80	0,045	0,045

The analysis corresponds to C15 (1.0401) according to DIN EN 10277-2.

Carbon equivalent

Max. CET (CEV) 0,28 (0,36)

Typ. CET (CEV) 0,22 (0,28)

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

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

Surface properties

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

Fabrications and other recommendations

Comparatively easy to machine, good weldability, good cold formability.

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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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.

30.06.23 Rev. N°1

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