Technical Datasheet

Unalloyed Steel C35 XTP

General product description:

The unalloyed steel C35 can be optimised using Xtreme Performance Technology to produce a material with very high toughness for the manufacture of construction and mechanical components. In addition to its suitability for machining operations, the combination of good elasticity and high material toughness makes this steel well suited to processing in advanced cold-forming procedures.

Mechanical-technological properties

Variant	$R_{p0.2}$ [MPa]	R_m [MPa]	A_5 [%]	A_g [%]	Z [%]	KV_{RT} [J]	T_{27} [°C]
very high strength, high toughness	580	760	20	8	50	≥ 120	-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, KV = notch impact energy as per 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	Mo	Ni	Ti
min.	0.32	-	0.50	-	-	-	-	-	-
max.	0.39	0.40	0.80	0.045	0.045	0.40	0.10	0.40	-

The chemical analysis corresponds to C35 (1.0501).

Maximum carbon equivalent:

Max. CET (CEV) 0.52 (0.67)

Typ. CET (CEV) 0.46 (0.55)

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

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

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:

Bars, XTP-treated
Diameter range 18 – 40 mm, tolerance h11
Bar straightness 0.5 mm/m

Fabrication and other recommendations:

Moderately good machinability, excellent cold workability.

STEELTEC AG | Emmenweidstrasse 72, CH-6020 Emmenbrücke, www.steeltec-group.com

Steeltec