

Technical Datasheet

Q&T Steel 42CrMo(S)4 XTP®

General product description:

Steeltec's Xtreme Performance Technology enables the Q&T steel 42CrMo(S)4 to be modified to meet customer-specific processing or component requirements. 42CrMo(S)4 XTP® is particularly well suited for components which are exposed to extreme mechanical loads.

Mechanical-technological properties:

Strength class	R _{p0.2} [MPa]	R _m [MPa]	A ₅ [%]	Z [%]
1	>1000	1100 - 1300	≥12	≥50
2	>1200	1300 - 1500	≥11	≥45
3	>1300	1500 - 1700	≥10	≥45
4	>1500	1700 - 1900	≥8	≥35

Typical mechanical-technological values

R_{p0.2} = yield strength (at 0.2% offset), R_m = tensile strength, A₅ = elongation after fracture, Z = reduction of area at fracture

Chemical composition (cast analysis by mass-%):

Element	C	Si	Mn	P	S	Cr	Mo
min.	0.38	-	0.60	-	0.020 / 0	0.90	0.15
max.	0.45	0.40	0.90	0.025	0.040 / 0.035	1.20	0.30

The chemical analysis corresponds to 42CrMoS4 / 42CrMo4 (1.7227 / 1.7225) according to DIN EN 10083-3.

Carbon equivalent:

Max. CET (CEV)

0.64 (0.93)

Typ. CET (CEV)

0.58 (0.83)

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

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

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, XTP-treated

Diameter range 18 – 40 mm, tolerance h11

Bar straightness 0,5 mm/m

Fabrication and other recommendations:

Moderately good machinability