



Induction Hardened and Chrome Plated Steel Bar

DIAMETER 5 - 130 mm

STEEL GRADES

Steel Grade	DIN	B.S	UNI	JIS	GOST	ASI/SAE/ASTM	Werkstoff
42CrMo4	42CrMo4	708M40	42CrMo4	SCM440(H)	40ChFA	4140	1,7225

CHEMICAL COMPOSITION - IN % BY WEIGHT

Steel Grade	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	N
42CrMo4	0.38-0.45	0.10-0.40	0.60-0.90	≤0.025	≤0.035	0.9-1.2	0.15-0.30	-	≤0.40	-	-

MECHANICAL PROPERTIES

Steel Grade	Diameter	Tensile Strength N/mm ²	Yield Strength N/mm ²	Elongation A%	Impact Energy J/Min.	Hardness Brinell N/mm ²	Norm	Tristar Steel Product Code
42CrMo4+QT	18<Ø≤40	1000-1200	Min. 750	Min. 11	35J / 20°C	298-359	EN ISO683-2	STAR ICBC
	40<Ø≤100	900-1100	Min. 650	Min. 12	35J / 20°C	271-331	EN ISO683-2	
	100<Ø≤130	800-950	Min. 550	Min. 13	35J / 20°C	240-290	EN ISO683-2	

STRAIGHTNESS

6 ≤ Ø ≤ 10mm: Max. 0.3 mm/1000 mm
12 ≤ Ø ≤ 18mm: Max. 0.25 mm/1000 mm
20 ≤ Ø ≤ 130 mm: Max. 0.20 mm/1000 mm

ROUNDNESS

Max. ½ from Dia. Tolerance

CHROME LAYER THICKNESS

Ø < 20 mm: min. 15 µm
Ø ≥ 20 mm: min. 20 µm

STANDARD LENGTH

5800 - 7500 mm
(Available on request)

SURFACE ROUGHNESS

Ra: max. 0.15 µm; Rt: max. 1.2 µm

CHROME LAYER MICROHARDNESS

900 HV0.1

TOLERANCE

f7, other on request

Diameter (mm)	Hardening Depth (mm)
6	0.5 - 0.8
6.35 - 12	0.6 - 1.2
12.7 - 15	0.8 - 1.4
15.875 - 19.05	1.1 - 1.5
19 - 19.05	1.2 - 1.5
20	1.2 - 1.5
22 - 25.4	1.4 - 1.7
28	1.5 - 1.8
28,575	1.5 - 1.8
30 - 36	1.5 - 1.9
38 - 40	1.7 - 2.3
42 - 45	1.7 - 2.3
48 - 80	2.2 - 2.6
82 - 101.6	2.2 - 3.2
105 - 120	2.5 - 3.5
125 - 130	2.5 - 3.5

SURFACE HARDNESS

Surface hardness beneath the chrome layer
42CrMo4+QT 58±3 HRC

CORROSION RESISTANCE

Neutral salt spray test according to ISO 9227 - Evaluation according to ISO 10289 :

RATING 10 (NO RUST)

Ø < 20 mm: 144 hours min.
Ø ≥ 20 mm: 200 hours min.