STAR ICBA Induction Hardened and Chrome Plated Steel Bars

DIAMETER 5 - 130 mm

STEEL GRADES

Steel Grade	DIN	B.S	UNI	JIS	GOST	ASI/SAE/ASTM	Werkstoff
–	**20MnV6**	55M	–	–	–	A572	1.5217

CHEMICAL COMPOSITION - IN % BY WEIGHT

Steel Grade	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	N
20MnV6	0.16-0.22	0.10-0.50	1.30-1.70	≤0.035	≤0.035	–	–	–	–	0.08-0.20	–
20MnV6x	0.16-0.22	0.10-0.50	1.30-1.70	≤0.035	≤0.035	–	–	–	–	0.08-0.20	–

MECHNICAL PROPERTIES

Steel Grade	Diameter	Tensile Strength N/mm²	Yield Strength N/mm2	Elongation A%	Impact Energy J/Min.	Hardness Brinell N/mm2	Norm	Tristar Steel Product Code
20MnV6	6<Ø≤25 80<Ø≤130	Min. 600 Min. 550	Min. 520 Min. 440	Min. 10 Min. 18	– 27J / -20°C	213-260 155-220	Internal Norm	STAR ICBA
20MnV6x	20<Ø≤90	Min. 600	Min. 520	Min. 19	27J / -20°C	165-225	Internal Norm	STAR ICBAX

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

Diameter (mm)	Hardening Depth (mm)
6	0.5 - 0.8
6.35 - 12	0.6 - 1.0
12.7 - 15	0.8 - 1.5
15.875 - 18	0.8 - 1.5
19 - 19.05	0.8 - 1.5
20	1.0 - 2.0
22 - 25.4	1.0 - 2.0
28	1.0 - 2.0
28,575	1.0 - 2.0
30 - 36	1.0 - 2.0
38 - 40	1.0 - 2.0
42 - 45	1.3 - 2.5
48 - 80	1.3 - 2.5
82 - 101.6	2.0 - 3.0
105 - 120	2.0 - 3.0
125 - 130	2.0 - 3.5

TOLERANCE
f7, other on request

SURFACE HARDNESS
Surface hardness beneath the chrome layer

20MnV6	45±3 HRC
20MnV6x	45±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.