

Series	Description
<b>NIMAX 500S-CB</b>	Hard Chrome Plated Steel Bars with High Corrosion Resistance and Superior Mechanical Properties steel grade: C45E, 20MnV6, 38MnVS6, 42CrMo4 / Ø20 - 160 mm / Ø3/4" - 6"

### Steel grades correspondents

EN	Werkstoff	DIN	B.S.	UNI	JIS	GOST	AISI SAE ASTM
C45E	1.1191	Ck45	080M46	C45	S45C	45	1045
-	1.5217	20MnV6	55M	-	-	-	A572
38MnVS6	1.1303	38MnSiVS5	-	-	-	-	(10V45) *
42CrMo4	1.7225	42CrMo4	708M40	42CrMo4	SCM440(H)	40ChFA	4140

\* equivalent

### Chemical composition - in % by weight

Steel grade	C	Si	Mn	P	S	Cr	Mo	Ni	V	N
C45E	0.42 ÷ 0.50	max. 0.40	0.50 ÷ 0.80	max. 0.030	max. 0.035	max. 0.40	max. 0.10	max. 0.40	-	-
20MnV6	0.16 ÷ 0.22	0.10 ÷ 0.50	1.30 ÷ 1.70	max. 0.035	max. 0.035	-	-	-	0.08 ÷ 0.20	-
38MnVS6	0.34 ÷ 0.41	0.15 ÷ 0.80	1.20 ÷ 1.60	max. 0.025	0.020 - 0.060	max. 0.30	max. 0.08	-	0.08 ÷ 0.20	0.010 ÷ 0.020
42CrMo4	0.38 ÷ 0.45	max. 0.40	0.60 ÷ 0.90	max. 0.025	max. 0.035	0.90 ÷ 1.20	0.15 ÷ 0.30	-	-	-

### Mechanical properties

Steel grade	Diameter Ø mm	Tensile strength R <sub>m</sub> N/mm <sup>2</sup>	Yield point R <sub>p0.2</sub> N/mm <sup>2</sup>	Elongation A <sub>5</sub> %	Hardness * Brinell N/mm <sup>2</sup>	Norm
C45E	16 < Ø ≤ 40	min. 650	min. 520	min. 7	200 - 298	EN 10277-5
	18 ≤ Ø ≤ 100	min. 630	min. 520	min. 14	180 - 270	EN 10083-2
	100 < Ø ≤ 160	min. 630	min. 520	min. 16	180 - 270	
20MnV6	6 < Ø ≤ 25	min. 700	min. 620	min. 10	213 - 260	Technical data according to internal norm
	19 < Ø ≤ 80	min. 600	min. 520	min. 18	159 - 172	
	80 < Ø ≤ 160	min. 550	min. 520	min. 18	159 - 172	
38MnVS6	20 < Ø ≤ 160	800 - 950	min. 520	min. 12	240 - 290	EN 10267
42CrMo4+QT	16 < Ø ≤ 40	1000 - 1200	min. 750	min. 11	298 - 359	EN 10083-3
	40 < Ø ≤ 100	900 - 1100	min. 650	min. 12	271 - 331	
	100 < Ø ≤ 160	800 - 950	min. 550	min. 13	240 - 286	

Note:

Impact energy: min. 27J at -20° C for 20MnV6

Impact energy: min. 27J at -40° C for 42CrMo4+QT

\* The hardness values are for information only

## Hard Chrome Plated Steel Bars

steel grade: C45E / 20MnV6 / 38MnVS6, 42CrMo4



Series **NIMAX 500S-CB** - C45E+C / C45E+QT / AISI1045  
**NIMAX 500S-CBM** - 20MnV6 / 38MnVS6  
**NIMAX 500S-CBV** - 42CrMo4+QT

Dimensions	Ø20 - 160 mm / Ø3/4" - 6"
Diameter tolerance	ISO f7 / other, on request
Roundness	max. 1/2 from diameter tolerance
Standard length	5000 - 7500 mm / on request cut lengths and special lengths
Surface roughness	Ra: max. 0.20 µm
Chrome layer thickness	Ø ≥ 20 mm: min. 30 µm
Chrome layer microhardness	min. 900 HV0.1

- ✓ *The hard chrome surface of the bars confers corrosion and wear resistance, reduces friction, improves durability and through abrasion tolerance ensures good oil holding as well.*
- ✓ *Strongly recommended for applications that request high corrosion resistance combined with superior mechanical resistance, but for rods not exposed to mechanical strokes or blows.*
- ✓ *The smooth appearance of the hard chrome surface is conferred by an attentive preparation of the steel bars before plating.*

### Table of dimensions - tolerance

Diameter mm	ISO f7 µm
18 < Ø ≤ 30	-20 / -41
30 < Ø ≤ 50	-25 / -50
50 < Ø ≤ 80	-30 / -60
80 < Ø ≤ 120	-36 / -71
120 < Ø ≤ 160	-43 / -83

### High corrosion resistance

Diameter mm	NIMAX 500S-CB NIMAX 500S-CBM NIMAX 500S-CBV
Ø ≥ 20	rating 10 after 500 h in NSS

*Tested in our own laboratory according to ISO 9227, evaluated according to ISO 10289.*