

# Thalachrome SIE CASS 96

DIAMETER  
25 - 55 MM

THE JAPANESE STANDARD INDUCTION HARDENED CHROME BAR

**STEEL GRADES**

C45E | C35E | 20MnV6 | 20MnV6X | 38MnVS6 | 38MnVS6X | 42CrMo4+QT

**CHEMICAL ANALYSIS**

Elements	C (%)	Si (%)	Mn (%)	S (%)	P (%)	V (%)	Cr (%)	Mo (%)	Ni (%)	N (%)	WERKSTOFF
<b>C45E</b>	0.42-0.50	≤ 0.40	0.50-0.80	≤ 0.035	≤ 0.035	-	≤ 0.40	≤ 0.10	≤ 0.40	-	1.1191
<b>C35E</b>	0.32-0.39	≤ 0.40	0.50-0.80	≤ 0.035	≤ 0.035	-	≤ 0.40	≤ 0.10	≤ 0.40	-	1.1181
<b>20MnV6-20MnV6X</b>	0.16-0.22	0.10-0.50	1.30-1.70	≤ 0.035	≤ 0.035	0.10-0.20	-	-	-	-	1.5217
<b>38MnVS6-38MnVS6X</b>	0.34-0.41	0.15-0.80	1.20-1.60	≤ 0.035	≤ 0.025	0.10-0.20	≤ 0.30	≤ 0.08	-	0.010-0.020	1.1303
<b>42CrMo4+QT</b>	0.38-0.45	≤ 0.40	0.60-0.90	≤ 0.035	≤ 0.035	-	0.90-1.20	0.15-0.30	-	-	1.7225

For steel grades C45E and C35E : Cr + Mo + Ni ≤ 0.63%

**MECHANICAL PROPERTIES**

Steel grade	Range $\phi$ (mm)	Yield point (N/mm <sup>2</sup> )	Tensile strength (N/mm <sup>2</sup> )	Elongation %	PSI
<b>C45E</b>	25 ≤ $\phi$ ≤ 55	≥ 305	580 - 850	≥ 16	45 000
<b>20MnV6</b>	25 ≤ $\phi$ ≤ 55	≥ 450	550 - 850	≥ 18	65 000
<b>20MnV6X</b>	25 ≤ $\phi$ ≤ 55	≥ 520	650 - 800	≥ 19	75 000
<b>38MnVS6</b>	25 ≤ $\phi$ ≤ 55	≥ 520	800 - 950	≥ 12	75 000
<b>38MnVS6X</b>	25 ≤ $\phi$ ≤ 55	≥ 580	850 - 1000	≥ 14	84 000
<b>42CrMo4+QT</b>	25 ≤ $\phi$ ≤ 40	≥ 750	1000 - 1200	≥ 11	100 000
	41 ≤ $\phi$ ≤ 55	≥ 650	900 - 1100	≥ 12	95 000

**INDUCTION HARDENING**
**Depth:**

- $\phi$  25 to 40 mm : 1.0 to 2.0 mm
- $\phi$  42 to 55 mm : 1.25 to 2.5 mm

**Hardness:**

- C45E : 55 to 60 HRC
- C35E : 52 to 57 HRC
- 20MnV6-20MnV6X : 42 to 52 HRC
- 38MnVS6-38MnVS6X : 55 to 60 HRC
- 42CrMo4+QT : 55 to 60 HRC

**TOLERANCE**

- $\phi$  25 to 28,575 mm : f8
- $\phi$  30 to 55 mm : f7

**CHROME THICKNESS**

- $\phi$  25 to 55 mm : 30  $\mu$ m mini

**CHROMIUM PLATING**

- Hardness : 900 Hv<sub>01</sub> min
- Microcracking : 5000 microcracks /mm<sup>2</sup> mini

**SURFACE ROUGHNESS**

- Ra : 0.10  $\mu$ m mini
- Rt : 1.0  $\mu$ m maxi

**STRAIGHTNESS**

- 0.2 mm/m maxi

**STANDARD LENGTH**

- 4,5 - 7,8 m

**CORROSION RESISTANCE**

CASS test according to ISO 9227 - Evaluation according to ISO 10289 :

**Rating 10**  
(no point of rust)

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**Rating 9**  
(less than 0.1 % of the surface corroded)

96h00 mini rating 9