

Thalachrome SI

INDUCTION HARDENING STANDARD
 DIAMETER 16 - 125 MM

STEEL GRADES

C45E | C35E | 20MnV6 | 20MnV6X | 38MnVS6 | 38MnVS6X | 42CrMo4V

CHEMICAL ANALYSIS

Elements	C (%)	Si (%)	Mn (%)	S (%)	P (%)	V (%)	Cr (%)	Mo (%)	Ni (%)	N (%)	WERKSTOFF
C45E	0.42-0.50	≤ 0.40	0.50-0.80	≤ 0.035	≤ 0.035	-	≤ 0.40	≤ 0.10	≤ 0.40	-	1.1191
C35E	0.32-0.39	≤ 0.40	0.50-0.80	≤ 0.035	≤ 0.035	-	≤ 0.40	≤ 0.10	≤ 0.40	-	1.1181
20MnV6-20MnV6X	0.16-0.22	0.10-0.50	1.30-1.70	≤ 0.035	≤ 0.035	0.08-0.20	-	-	-	-	1.5217
38MnVS6-38MnVS6X	0.34-0.41	0.15-0.80	1.20-1.60	≤ 0.035	≤ 0.025	0.08-0.20	≤ 0.30	≤ 0.08	-	0.010-0.020	1.1303
42CrMo4V	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 Ø (mm)	Yield point (N/mm ²)	Tensile strength (N/mm ²)	Elongation %	PSI
C45E	16	≥ 340	620	≥ 10	-
	18 ≤ Ø ≤ 95	≥ 305	580 - 850	≥ 16	45 000
	95 < Ø ≤ 125	≥ 275	560 - 800	≥ 16	40 000
C35E	16 ≤ Ø ≤ 36	≥ 315	560 - 750	≥ 18	45 000
	36 < Ø ≤ 125	≥ 275	560 - 760	≥ 19	40 000
20MnV6	16	≥ 450	550 - 850	≥ 10	-
	18 ≤ Ø ≤ 19	≥ 450	550 - 850	≥ 17	-
	20 ≤ Ø ≤ 65	≥ 450	550 - 850	≥ 18	65 000
20MnV6X	65 < Ø ≤ 125	≥ 390	530 - 850	≥ 21	55 000
	18 ≤ Ø ≤ 70	≥ 520	650 - 800	≥ 19	75 000
	71 ≤ Ø ≤ 90	≥ 520	650 - 800	≥ 21	75 000
38MnVS6	91 ≤ Ø ≤ 125	≥ 440	550 - 750	≥ 21	64 000
	20 ≤ Ø ≤ 125	≥ 520	800 - 950	≥ 12	75 000
38MnVS6X	25 ≤ Ø ≤ 125	≥ 580	850 - 1000	≥ 14	84 000
42CrMo4V	18 ≤ Ø ≤ 40	≥ 750	1000 - 1200	≥ 11	100 000
	41 ≤ Ø ≤ 100	≥ 650	900 - 1100	≥ 12	95 000
	101 ≤ Ø ≤ 125	≥ 550	800 - 950	≥ 13	80 000

INDUCTION HARDENING
Depth:

• Ø 16 mm :	0.5 to 1.0 mm
• Ø 18 to 40 mm :	1.0 to 2.0 mm
• Ø 42 to 80 mm :	1.25 to 2.5 mm
• Ø 82.55 to 125 mm :	2.0 to 3.0 mm

Hardness:

• C45E :	55 to 60 HRC
• C35E :	52 to 57 HRC
• 20MnV6-20MnV6X :	42 to 52 HRC
• 38MnVS6 38MnVS6X :	55 to 60 HRC
• 42CrMo4V :	55 to 60 HRC

TOLERANCE

- Ø 16 to 19,05 mm : f8
- Ø 20 to 125 mm : f7

CHROME THICKNESS

- Ø 16 to 18 mm : 20 µm mini
- Ø 19,05 to 125 mm : 25 µm mini

CHROMIUM PLATING

- Hardness : 900 Hv_{0,1} min
- Microcracking : 5000 microcracks /mm² mini

SURFACE ROUGHNESS

- Ra : 0.07 to 0.20 µm
- Ry : 2.5 µm maxi

STRAIGHTNESS

- 0.2 mm/m maxi

STANDARD LENGTH

- 4.5 - 7.8 m

CORROSION RESISTANCE

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

 Acetic spray test according to ISO 9227 -
 Evaluation according to ISO 10289 :

Rating 10 (no point of rust)

120h00 mini NSS rating 10

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

312h00 mini NSS rating 9

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

48h00 ASS