

Hard Chrome Bar Mechanical Properties

The following are typical mechanical properties for hard chrome bar before induction hardening.

(1) - The hardness values are for information only. Data may vary from different mills so please request a material test certificate where strength is critical.

| Mechanical properties | | | | | | |
|-----------------------|---------------------|---|---|-----------------------|--|---|
| Steel grade | Diameter Ø mm | Tensile strength Rm N/mm ² | Yield point Rp0.2 N/mm ² | Elongation A5 % | Impact energy KV J ² | Hardness (1) Brinell N/mm ² |
| C45E | 6 ≤ Ø ≤ 10 | 750 - 1050 | min. 565 | min. 5 | - | 225 - 320 |
| C45E | 10 < Ø ≤ 16 | 710 - 1030 | min. 500 | min. 6 | - | 210 - 315 |
| C45E | 16 < Ø ≤ 40 | 650 - 1000 | min. 410 | min. 7 | - | 200 - 298 |
| C45E | 40 < Ø ≤ 63 | 630 - 900 | min. 360 | min. 8 | - | 200 - 298 |
| C45E | 18 ≤ Ø ≤ 100 | min. 580 | min. 305 | min. 14 | - | 172 - 242 |
| C45E | 100 < Ø ≤ 160 | min. 560 | min. 275 | min. 14 | - | 172 - 242 |
| 38MnVS6 | 20 < Ø ≤ 120 | 800 - 950 | min. 520 | min. 12 | - | 240 - 290 |
| 38MnVS6 | 120 < Ø ≤ 160 | 700 - 950 | min. 520 | min. 12 | - | 210 - 300 |
| 42CrMo4+QT | 6 < Ø ≤ 16 | 1100 - 1300 | min. 900 | min. 10 | - | 298 - 359 |
| 42CrMo4+QT | 16 < Ø ≤ 40 | 1000 - 1200 | min. 750 | min. 11 | - | 298 - 359 |
| 42CrMo4+QT | 40 < Ø ≤ 100 | 900 - 1100 | min. 650 | min. 12 | min. 35J / 20°C | 271 - 331 |
| 42CrMo4+QT | 100 < Ø ≤ 160 | 800 - 950 | min. 550 | min. 13 | - | 240 - 290 |

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