



**Hard chrome plated barsteel Cromax® 280X/20MnV6 en C45E**

artikelcode: **329**  
artikelcode: **364**

**General**

Hard chrome plated barsteel Cromax® 280X/20MnV6 and C45E.  
The bar is ready to use and has a diameter tolerance of f7.  
The thickness of the chrome layer is minimum 20 µm; sizes <20 mm minimum 15 µm. The surface roughness (Ra) is maximum 0,2 µm (cut-off 0,8 mm). The surface hardness is minimum 800HV.  
The X added to the 280 grade is giving clearly higher mechanical properties for the sizes 25 - 80 mm.  
The hard chrome plated bars will be mainly used as pistonrods for hydraulic and pneumatic cylinders. In an aggressive environment, like the process industry, in the mining industry, along the shore, on the roads and in the offshore-industry, one could use bars of chrome plated stainless steel bars or nickel chrome plated bars.

The lengths are about 6 meter, cutting on request.

**Corresponding norms**

|       |        |        |
|-------|--------|--------|
| DIN   | 17MnV6 | 20MnV6 |
| AFNOR | 18MV5  |        |

| Mechanical properties                   | diameter in mm |            | 20MnV6 or equal |          | C45E    |
|---|----------------|------------|-----------------|----------|---------|
|   | 25 - 80        | (80) - 125 | <25             | 25 - 200 |         |
| Yieldstrength Reh min.N/mm <sup>2</sup> | 520            | 440        | 540             | 440      | 280     |
| Tensilestrength Rm N/mm <sup>2</sup>    | 650-800        | 600-750    | min. 640        | 600-750  | 590-740 |
| Elongation (A5) min. %                  | 19             | 19         | 7               | 19       | 16      |
| Hardness abt. HB                        | 200-240        | 180-230    | min. 195        | 180-230  | 180-225 |
| Impact test -27J(-20°C)                 | yes            | no         | no              | no       | no      |

**Chemical analysis 280X/ 20MnV6**

|      | C%   | Si%  | Mn%  | P≤%   | S≤%   | V%   |
|------|------|------|------|-------|-------|------|
| min. | 0,15 | 0,10 | 1,30 |       |       | 0,06 |
| max. | 0,23 | 0,50 | 1,75 | 0,035 | 0,035 | 0,20 |

**Out of roundness**

Maximum 1/2 of the diameter tolerance

**Straightness**

Straightness deviation: ≤ 160 mm: max. 0,3 : 1000 mm and > 160 mm: max. 0,5 mm : 1000 mm

**Weldability**

Excellent

**Packaging**

Standard in cardboard tubes / bundles. Alternative in plastic sleeve (price on request)

|   | Diameter                      |        | Kg/m  | articlecode<br>329 and 364 |
|---|-------------------------------|--------|-------|----------------------------|
|   | mm                            | inch   |       |                            |
| <b>Hard chrome plated barsteel - Cromax® 280X / 20Min V6 and C45E</b> | 6                             | C45E   | 0,22  |                            |
|   | 8                             | C45E   | 0,39  |                            |
|   | 10                            |        | 0,62  |                            |
|   | 12                            |        | 0,89  |                            |
|   | 14                            |        | 1,21  |                            |
|   | 15                            |        | 1,39  |                            |
|   | 15,875                        |        | 1,55  |                            |
|   | 16                            |        | 1,58  |                            |
|   | 18                            |        | 2,00  |                            |
|   | * 19,05                       | 3/4"   | 2,24  |                            |
|   | 19,05                         | C45E   | 2,24  |                            |
|   | 20                            |        | 2,47  |                            |
|   | 20                            | C45E   | 2,47  |                            |
|   | 22                            |        | 2,98  |                            |
|   | 22                            | C45E   | 2,98  |                            |
|   | 22,225                        |        | 3,04  |                            |
|   | 25                            |        | 3,85  |                            |
|   | 25                            | C45E   | 3,85  |                            |
|   | 25,4                          | 1"     | 3,98  |                            |
|   | 28                            |        | 4,83  |                            |
|   | 30                            |        | 5,55  |                            |
|   | 30                            | C45E   | 5,55  |                            |
|   | 31,75                         | 1 1/4" | 6,21  |                            |
|   | 32                            |        | 6,31  |                            |
|   | 34,925                        | 1 3/8" | 7,52  |                            |
|   | 35                            |        | 7,55  |                            |
|   | 36                            |        | 7,99  |                            |
|   | 36                            | C45E   | 7,99  |                            |
|   | 37                            | C45E   | 8,44  |                            |
|   | 38                            |        | 8,90  |                            |
|   | 38,1                          | 1 1/2" | 8,95  |                            |
|   | 38,1                          | C45E   | 8,95  |                            |
|   | 40                            | C45E   | 9,86  |                            |
|   | 42                            |        | 10,88 |                            |
|   | 42                            | C45E   | 10,88 |                            |
|   | 44,45                         | 1 3/4" | 12,18 |                            |
|   | 45                            |        | 12,48 |                            |
|   | 45                            | C45E   | 12,48 |                            |
|   | 47,625                        |        | 13,98 |                            |
|   | 50                            |        | 15,41 |                            |
| 50  | C45E                          | 15,41  |       |                            |
| 50,8  | 2"                            | 15,91  |       |                            |
| 52  |                               | 16,67  |       |                            |
| 53,975  |                               | 17,96  |       |                            |
| 55  |                               | 18,65  |       |                            |
| 55  | C45E                          | 18,65  |       |                            |
| 56  |                               | 19,34  |       |                            |
| 57,15   | 2 1/4"                        | 20,14  |       |                            |
| 57,15   | C45E                          | 20,14  |       |                            |
| 60  |                               | 22,20  |       |                            |
| 63  |                               | 24,47  |       |                            |
|   | <b>Other sizes on request</b> |        |       |                            |

Van Leeuwen Precisie BV  
Hamburgweg 6  
NL - 7418 ES Deventer

+31 570 500700 phone  
+31 570 500777 telefax

info-precisie@vanleeuwen.nl  
www.vanleeuwen-precisie.nl

All mentioned sizes have a delivery time of minimum 1 week s.b.u.

Although Van Leeuwen Precisie B.V. is carefully composing the pricelist, every responsibility concerning the offered information is excluded. For actual prices please consult our online gross-pricelist on the internetsite [www.vanleeuwen-precisie.nl](http://www.vanleeuwen-precisie.nl).



|   | Diameter |        | Kg/m   |
|---|----------|--------|--------|
|   | mm       | inch   |        |
| <b>Hard chrome plated barsteel - Cromax® 280X / 20MnV6 and C45E</b> | 63       | C45E   | 24,47  |
|   | 63,5     | 2 1/2" | 24,86  |
|   | 65       |        | 26,05  |
|   | 69,85    | 2 3/4" | 30,08  |
|   | 70       |        | 30,21  |
|   | 70       | C45E   | 30,21  |
|   | 75       |        | 34,68  |
|   | 76,2     | 3"     | 35,80  |
|   | 80       |        | 39,46  |
|   | 82,55    | 3 1/4" | 42,01  |
|   | 85       |        | 44,55  |
|   | 88,9     | 3 1/2" | 48,72  |
|   | 90       |        | 49,94  |
|   | 90       | C45E   | 49,94  |
|   | 95       |        | 55,64  |
|   | 95,25    | 3 3/4" | 55,93  |
|   | 100      |        | 61,65  |
|   | 100      | C45E   | 61,65  |
|   | 101,6    | 4"     | 63,64  |
|   | 105      |        | 67,97  |
|   | 110      |        | 74,56  |
|   | 114,3    |        | 80,54  |
|   | 115      |        | 81,53  |
|   | 120      |        | 88,74  |
|   | 125      |        | 96,33  |
|   | 125      | C45E   | 96,33  |
|   | 127      |        | 99,44  |
|   | 130      | C45E   | 104,19 |
|   | 135      |        | 112,40 |
|   | 140      |        | 120,84 |
|   | 140      | C45E   | 120,84 |
|   | 150      |        | 138,71 |
| 160   | C45E     | 157,82 |        |
| 180   | C45E     | 199,75 |        |
| 200   | C45E     | 246,60 |        |
| 220   | C45E     | 298,39 |        |
| 250   | C45E     | 385,31 |        |
| <b>Other sizes on request</b>                                       |          |        |        |

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