



# CEWELD E 6013 Root

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|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------|--------------------|-------------------------|-----|----------|
| TYPE                                        | Rutile basic electrode for SMAW welding. (Type E 38 2 )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                         |                      |                    |                         |     |          |
| APPLICATIONS                                | CEWELD® E 6013 is a classic rutile- basic stick electrode preferably for welding in the weld root area.<br>Areas of application are: Shipbuilding, construction, buildings, pipe welding                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |                      |                    |                         |     |          |
| PROPERTIES                                  | CEWELD® E 6013 Root is a thick basic-rutile coated electrode for welding low alloyed steels with tensile strength up to 510 MPa. Recommended for root welding in pipelines due to excellent welding properties. The weld metal deposit has high mechanical properties and can be used for a wide range of materials.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                      |                    |                         |     |          |
| CLASSIFICATION                              | AWS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | A 5.1: E 6013           |                      |                    |                         |     |          |
|                                             | EN ISO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2560-A: E 38 2 RB 12    |                      |                    |                         |     |          |
|                                             | F-nr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2                       |                      |                    |                         |     |          |
|                                             | FM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                       |                      |                    |                         |     |          |
| SUITABLE FOR                                | <b>Re ≤ 380 MPa (55 ksi) ISO 15608: 1.1( ReH &lt; 275 MPa ) 1.2 (275 &lt; ReH &lt; 360 MPa)</b><br>1.0035, 1.0038, 1.0039, 1.0044, 1.0112, 1.0116, 1.0130, 1.0145, 1.0253, 1.0254, 1.0255, 1.0258, 1.0259, 1.0319, 1.0345, 1.0345, 1.0345, 1.0348, 1.0352, 1.0418, 1.0420, 1.0425, 1.0425, 1.0425, 1.0427, 1.0432, 1.0446, 1.0451, 1.0452, 1.0453, 1.0457, 1.0459, 1.0460, 1.0460, 1.0461, 1.0486, 1.0490, 1.0491, 1.0505, 1.0545, 1.0546, 1.0562, 1.0566, 1.0570, 1.0578, 1.0581, 1.0582, 1.1138, 1.5419, 1.8948<br>C 22.8 S1, S185, S235JRG2, S235JR S235JRH, S275JR, P235S, S235J2G3, P265S, S275J2, P235TR1, P235TR2, P265TR1, P265TR2, P235GH, P235GH, P235GH, P195GH, P245GH, L245ME, GE200, P265GH, P265GH, P265GH, C 22.3, C 21 , GE240, P215NL, P255QL, P265NL, L245NE, C 22.8, P250GH, P275N, S275N, S275NL, GP240GH, P275SL, 21 Mn 6, StE 320.7, St 52.0, P280GH, (X42ME) L290ME, P305GH, P355GH, P295GH, L290NE, S355N, S355NL, P355N, P355NL1, S355J2G3, G21Mn5, G20Mo5, X52QE,<br><b>ASTM:</b> A 27 u, A36 Gr. all; A214; A 242 Gr.1-5; A266 Gr. 1, 2, 4; A283 Gr. A, B, C, D; A285 Gr. A, B, C; A299 Gr. A, B; A328; A366; A515 Gr. 60, 65, 70; A516 Gr. 55; A570 Gr. 30, 33, 36, 40, 45; A 572 Gr. 42, 50; A606 Gr. Alle; A607 Gr. 45; A656 Gr. 50, 60; A668 Gr. A, B; A907 Gr. 30, 33, 36, 40; A841; A851 Gr. 1, 2; A935 Gr.45; A936 Gr. 50;<br>API 5 L Gr. B, X42-X52 |                         |                      |                    |                         |     |          |
| APPROVALS                                   | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                      |                    |                         |     |          |
| WELDING POSITIONS                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                      |                    |                         |     |          |
| TYPICAL CHEMICAL ANALYSIS OF WELD METAL (%) | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Si                      | Mn                   | P                  | S                       |     |          |
|                                             | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.2                     | 0.5                  | 0.02               | 0.02                    |     |          |
| MECHANICAL PROPERTIES                       | Heat Treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | R <sub>P0.2</sub> (MPa) | R <sub>m</sub> (MPa) | A <sub>5</sub> (%) | Impact Energy (J) ISO-V |     | Hardness |
|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                      |                    | -20°C                   | 0°C |          |
|                                             | As Welded                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 400                     | 500                  | 25                 | 50                      | 65  | HRc      |
| REDRYING                                    | 140°C / 1 hr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                         |                      |                    |                         |     |          |
| GAS ACC. EN ISO 14175                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                      |                    |                         |     |          |



# CEWELD E 6013 Root

E 6013 ROOT 2,5 X 300MM

| Packaging | KG/unit | EanCode       |
|-----------|---------|---------------|
| Can       | 2,6     | 8720663400277 |

E 6013 ROOT 3,2 X 350MM

| Packaging | KG/unit | EanCode       |
|-----------|---------|---------------|
| Can       | 2,6     | 8720663400284 |

E 6013 ROOT 4,0 X 450MM

| Packaging | KG/unit | EanCode       |
|-----------|---------|---------------|
| Can       | 3,3     | 8720663400291 |