



# CEWELD E 9015-B9

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                 |                         |     |                         |                      |                    |                         |      |     |          |      |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----|-------------------------|----------------------|--------------------|-------------------------|------|-----|----------|------|
| TYPE                                        | Basic, Cr and Mo-alloyed electrode for heat resistant steels T/P91                                                                                                                                                                                                                                                                                                                              |                         |     |                         |                      |                    |                         |      |     |          |      |
| APPLICATIONS                                | CEWELD® E 9015-B9 is a basic coated electrode for modified 9Cr-1Mo steels. The weld metal of type 9Cr-1Mo-VNb is characterised by a martensitic structure and is suitable for tempered applications. Applications include joint welding of similar heat resistant steels and cast steels in turbine and power plant construction and in the chemical industry.                                  |                         |     |                         |                      |                    |                         |      |     |          |      |
| PROPERTIES                                  | The weld metal of CEWELD® E 9015-B9 has a very low hydrogen content and is suitable for application temperatures up to max. 650°C in the long term range.<br>Preheat and interpass 250 - 350°C, then a tempering of 750°C / >2h.<br>It can be short arc welded in all positions, vertical down.                                                                                                 |                         |     |                         |                      |                    |                         |      |     |          |      |
| CLASSIFICATION                              | AWS                                                                                                                                                                                                                                                                                                                                                                                             | A 5.5: E9015-B91        |     |                         |                      |                    |                         |      |     |          |      |
|                                             | EN ISO                                                                                                                                                                                                                                                                                                                                                                                          | 3580-A: E CrMo91 B42 H5 |     |                         |                      |                    |                         |      |     |          |      |
|                                             | F-nr                                                                                                                                                                                                                                                                                                                                                                                            | 4                       |     |                         |                      |                    |                         |      |     |          |      |
|                                             | FM                                                                                                                                                                                                                                                                                                                                                                                              | 4                       |     |                         |                      |                    |                         |      |     |          |      |
| SUITABLE FOR                                | <b>P91: 9%Cr-1% Mo ISO 15608: ~5,4 C ≤ 0,35 %, 7,0 % ≤ Cr &lt; 10,0 % und 0,7 &lt; Mo ≤ 1,2 %</b><br>1.7386, 1.7688, 1.7389, 1.4903, 1.4955<br>X12CrMo 9 1, GX12CrMo 10 1, X11CrMo9-1, X7CrMo9-1, X10CrMoVNb9-1, GX12CrMoVNbN9-1<br>ASTM: Grade 91, T91, P91, F91, FP91, A182/A336 grade F91, A213 grade T91, A217 grade C12A, A234 grade WP91, A387 grade 91, A335 grade P91<br>STPA28, STBA28 |                         |     |                         |                      |                    |                         |      |     |          |      |
| APPROVALS                                   | CE                                                                                                                                                                                                                                                                                                                                                                                              |                         |     |                         |                      |                    |                         |      |     |          |      |
| WELDING POSITIONS                           |                                                                                                                                                                                                                                                                                                              |                         |     |                         |                      |                    |                         |      |     |          |      |
| TYPICAL CHEMICAL ANALYSIS OF WELD METAL (%) | C                                                                                                                                                                                                                                                                                                                                                                                               | Si                      | Mn  | P                       | S                    | Cr                 | Ni                      | Mo   | V   | Nb       | N    |
|                                             | 0.1                                                                                                                                                                                                                                                                                                                                                                                             | 0.3                     | 0.8 | 0.008                   | 0.008                | 9                  | 0.65                    | 0.99 | 0.2 | 0.05     | 0.05 |
| 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 |      |
|                                             | 760°C±15°C 2h                                                                                                                                                                                                                                                                                                                                                                                   |                         |     | 560                     | 750                  | 18                 | RT                      |      |     | HRc      |      |
|                                             |                                                                                                                                                                                                                                                                                                                                                                                                 |                         |     |                         |                      |                    | 60                      |      |     |          |      |
| REDRYING                                    | 300°C / 2 hr                                                                                                                                                                                                                                                                                                                                                                                    |                         |     |                         |                      |                    |                         |      |     |          |      |
| GAS ACC. EN ISO 14175                       |                                                                                                                                                                                                                                                                                                                                                                                                 |                         |     |                         |                      |                    |                         |      |     |          |      |