



# CEWELD SA 90S-B9

|                                                   |                                                                                                                                                                                                                                                                                                                                                                        |                   |     |                         |                      |                    |                         |    |     |     |          |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----|-------------------------|----------------------|--------------------|-------------------------|----|-----|-----|----------|
| TYPE                                              | Medium alloyed, high-strength creep resistant 9% Chromium alloy.                                                                                                                                                                                                                                                                                                       |                   |     |                         |                      |                    |                         |    |     |     |          |
| TOEPASSINGEN                                      | Designed for welding equivalent type 91~ 9% Cr Steels modified with small additions of Niobium, Vanadium and Nitrogen to offer improved long term creep properties. This alloy is specially intended for high integrity structural service at elevated temperature such as: Headers, main steam piping and turbine casings, gasification plants etc.                   |                   |     |                         |                      |                    |                         |    |     |     |          |
| EIGENSCHAPPEN                                     | Sub arc filler metal specifically intended for high integrity structural service at elevated temperature so the minor alloy additions responsible for its creep strength are kept above the minimum considered necessary to ensure satisfactory performance. SA 90S-B9 is best to be used with FL 880 high basic agglomerated flux to obtain optimum creep properties. |                   |     |                         |                      |                    |                         |    |     |     |          |
| CLASSIFICATIE                                     | AWS                                                                                                                                                                                                                                                                                                                                                                    | A 5.23: EB91      |     |                         |                      |                    |                         |    |     |     |          |
|                                                   | EN ISO                                                                                                                                                                                                                                                                                                                                                                 | 24598-A: S CrMo91 |     |                         |                      |                    |                         |    |     |     |          |
|                                                   | W.Nr.                                                                                                                                                                                                                                                                                                                                                                  | 1.4903            |     |                         |                      |                    |                         |    |     |     |          |
|                                                   | F-nr                                                                                                                                                                                                                                                                                                                                                                   | 6                 |     |                         |                      |                    |                         |    |     |     |          |
|                                                   | FM                                                                                                                                                                                                                                                                                                                                                                     | 4                 |     |                         |                      |                    |                         |    |     |     |          |
| GESCHIKT VOOR                                     | A 213 T91 (seamless tubes), A 335 P91 (seamless tubes), A 387 Gr91 (plates), A 182 / A336 F91 (forgings), X10CrMoVNb 91, 1503 Gr91, AFNOR NF A-49213/A-49219 Gr TU Z 10, CDVNb 09-01                                                                                                                                                                                   |                   |     |                         |                      |                    |                         |    |     |     |          |
| GOEDKEURINGEN                                     | CE                                                                                                                                                                                                                                                                                                                                                                     |                   |     |                         |                      |                    |                         |    |     |     |          |
| LASPOSITIES                                       | <div>  </div>                                                                                                    |                   |     |                         |                      |                    |                         |    |     |     |          |
| TYPICAL CHEMICAL ANALYSIS OF THE FILLER METAL (%) | C                                                                                                                                                                                                                                                                                                                                                                      | Si                | Mn  | P                       | S                    | Cr                 | Ni                      | Mo | V   | N   | Nb       |
|                                                   | 0.1                                                                                                                                                                                                                                                                                                                                                                    | 0.25              | 0.5 | 0.01                    | 0.01                 | 8.7                | 0.6                     | 1  | 0.2 | 0.6 | 0.04     |
| MECHANISCHE WAARDEN                               | Heat Treatment                                                                                                                                                                                                                                                                                                                                                         |                   |     | R <sub>P0,2</sub> (MPa) | R <sub>m</sub> (MPa) | A <sub>5</sub> (%) | Impact Energy (J) ISO-V |    |     |     | Hardness |
|                                                   | 730°C- 760°C 3h                                                                                                                                                                                                                                                                                                                                                        |                   |     | 560                     | 680                  | 19                 | RT                      |    |     |     |          |
|                                                   |                                                                                                                                                                                                                                                                                                                                                                        |                   |     |                         |                      |                    | 100                     |    |     |     | HRc      |
| HERDROGEN                                         | Not required                                                                                                                                                                                                                                                                                                                                                           |                   |     |                         |                      |                    |                         |    |     |     |          |
| GAS ACC. EN ISO 14175                             |                                                                                                                                                                                                                                                                                                                                                                        |                   |     |                         |                      |                    |                         |    |     |     |          |