



# CEWELD ER 90 S-G (P92) Tig

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                |     |       |                         |                      |        |          |     |      |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-------|-------------------------|----------------------|--------|----------|-----|------|
| TYPE                                              | Medium-alloyed Copper- coated Tig-rod for high-strength, creep-resistant 9% chromium alloy. (W Z CrMoWVNb 9 0.5 1.5 / ER90S-B92)                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                |     |       |                         |                      |        |          |     |      |
| APPLICATIONS                                      | CEWELD® ER 90 S-G (P92) Tig is a high-temperature, creep-resistant, modified martensitic wire of type W Z CrMoWVNb 9 0.5 1.5 / ER90S-B92. The alloy T92/P92 is often used in the power generation industry for ultra-supercritical fossil fuel-fired power plant boilers and turbines; the alloy is also used in the chemical, oil and gas industries.                                                                                                                                                                                                                                                      |                                |     |       |                         |                      |        |          |     |      |
| PROPERTIES                                        | CEWELD® ER 90 S-G (P92) Tig is commonly used at operating temperatures of up to 620°C. V, Nb and N additions give this “creep improved ferritic” (CSEF) alloy improved high temperature creep resistance compared to standard creep resistant CrMo alloys. Due to the controlled Mn+Ni content, the A C1 temperature is safely above 780°C..                                                                                                                                                                                                                                                                |                                |     |       |                         |                      |        |          |     |      |
| CLASSIFICATION                                    | AWS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | A 5.28: ER 90S-G               |     |       |                         |                      |        |          |     |      |
|                                                   | EN ISO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 21952-A: W ZCrMoWVNb 9 0,5 1,5 |     |       |                         |                      |        |          |     |      |
|                                                   | F-nr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6                              |     |       |                         |                      |        |          |     |      |
|                                                   | FM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4                              |     |       |                         |                      |        |          |     |      |
| SUITABLE FOR                                      | <b>P92: 9%Cr1.7%W0.5%Mo,</b><br>1.4901<br>X10CrWMoVNb 9 2<br>ASTM A213 Gr. T 92; A355 Gr. P92; A187 F92, A369 FP92; A1017 Gr 92<br>KA-STBA29; KA-STPA29 NF 616                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                |     |       |                         |                      |        |          |     |      |
| APPROVALS                                         | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |     |       |                         |                      |        |          |     |      |
| WELDING POSITIONS                                 |        |                                |     |       |                         |                      |        |          |     |      |
| TYPICAL CHEMICAL ANALYSIS OF THE FILLER METAL (%) | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Si                             | Mn  | P     | S                       | Cr                   | Ni     | Mo       | W   | Nb   |
|                                                   | 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.35                           | 0.5 | 0.008 | 0.008                   | 9.1                  | 0.5    | 0.8      | 1.6 | 0.05 |
| MECHANICAL PROPERTIES                             | Heat Treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                |     |       | R <sub>P0,2</sub> (MPa) | R <sub>m</sub> (MPa) | A5 (%) | Hardness |     |      |
|                                                   | 730°C- 760°C 3h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                |     |       | 550                     | 630                  | 17     | HRc      |     |      |
| REDRYING                                          | Not required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |     |       |                         |                      |        |          |     |      |
| GAS ACC. EN ISO 14175                             | I1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |     |       |                         |                      |        |          |     |      |