

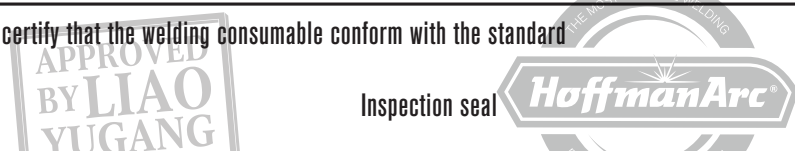


THE MOST RELIABLE WELDING®

# HOFFMAN ARC CO., LTD

## QUALITY CERTIFICATE OF WELDING CONSUMABLE

| Type      | Norm                 | Brand Name | Part #  | Diameter     | Lot No. | Manufactured Date | Date of Issue  |
|-----------|----------------------|------------|---------|--------------|---------|-------------------|----------------|
| AWS E7018 | AWS A5.1/A5. 1M-2004 | SINNVOLL   | 6001802 | 1/8" (3.2MM) | 18-1283 | SHOWN ON PACKAGE  | 2018 / 09 / 03 |

| Mechanical Properties of Deposited Metal                                     |                         |             | Chemical Composition of Deposited Metal (%) |                                                                          |             |                 |         |                                                                                       |               |           |
|------------------------------------------------------------------------------|-------------------------|-------------|---------------------------------------------|--------------------------------------------------------------------------|-------------|-----------------|---------|---------------------------------------------------------------------------------------|---------------|-----------|
| Item                                                                         |                         | Requirement | Actual Result                               | Element                                                                  | Requirement | Actual Result   | Element | Requirement                                                                           | Actual Result |           |
| Yield Strength Rel(MPa)                                                      |                         | Min. 400    | 494                                         | C                                                                        | Max 0.15    | 0.070           | Mo      | Max 0.3                                                                               | 0.016         |           |
| Tensile Strength Rm(MPa)                                                     |                         | Min. 490    | 581                                         | Si                                                                       | Max 0.75    | 0.53            | V       | Max 0.08                                                                              | 0.019         |           |
| Elongation A5 (%)                                                            |                         | Min. 22     | 26.5                                        | Mn                                                                       | Max 1.60    | 1.47            | Cu      | --                                                                                    | --            |           |
| Sharp V<br>noch                                                              | Impact Temp (°C)        | -30         | 30                                          | S                                                                        | Max 0.035   | 0.0082          | A1      | --                                                                                    | --            |           |
|                                                                              | Av. Absorbed Energy (J) | Min. 27     | 128 118 107                                 | P                                                                        | Max 0.035   | 0.019           | Ti      | --                                                                                    | --            |           |
| X-Ray                                                                        |                         | --          | --                                          | Cr                                                                       | Max 0.2     | 0.025           | --      | --                                                                                    | --            |           |
| Hydrogen Content (ml/130g)                                                   |                         | --          | --                                          | Ni                                                                       | Max 0.3     | 0.018           | --      | --                                                                                    | --            |           |
| Approved Classification Grade                                                |                         | CCS (--)    | LR (--)                                     | GL (--)                                                                  | NK (--)     | ABS (--)        | BV (--) | DNV (--)                                                                              | KR (--)       | RINA (--) |
| 10050 NW 116TH Way, Suite 15.<br>Medley, Florida 33178.<br>Telf: 305-4205099 |                         |             |                                             | This is to certify that the welding consumable conform with the standard |             |                 |         |                                                                                       |               |           |
|                                                                              |                         |             |                                             | Signature                                                                |             | Inspection seal |         |  |               |           |