



**MANUFACTURERS OF A DIVERSE RANGE OF
ADVANCED WELDING CONSUMABLES**

**SECTION
4**

WI-0304 DS43A RD-118G Rev. 1, Date 01.08.2011

| RD-118G | LOW HYDROGEN IRON POWDER ELECTRODE FOR WELDING STEELS WITH A MINIMUM UTS OF 760 N/mm² | | | | DATA SHEET NO. 43A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-----|-------------------|---------|-----------------------------------|--------|-----|------|------|------|---|---|----|----|----|---|----|------|---|-----|-----|---|---|---|-----|------|---|--|-----|-----|-----|-----|-------|-------|-----|-----|-----|------|--|---------|------|-----|-----|-------|-------|------|-----|------|------|------|
| SPECIFICATION | AWS A5.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CLASSIFICATION | E11018-G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRODUCT DESCRIPTION | <p>The design emphasis of the chemically basic flux is engineered to ensure the optimum weld metal properties demanded by the specification are fully met.</p> <p>The basic flux containing the appropriate alloying elements with a controlled balanced addition of iron powder, is extruded onto a high purity ferritic core wire with a blend of silicates that ensures both coating strength and a coating resistant to subsequent moisture absorption.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WELDING FEATURES OF THE ELECTRODE | <p>The chemical nature of the flux together with a significant proportion of iron powder ensures maximum deposition efficiency without detracting from its ability to be used in all positions except vertical down.</p> <p>Overall the arc is very stable, slag detachability is good and metal recovery is some 115% with respect to the core wire.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| APPLICATIONS AND MATERIALS TO BE WELDED | <p>This electrode is typically used for welding of general structural steel fabrication in high strength low-alloyed steels, which may be used for cranes, earth moving equipment, and other highly stressed structural components.</p> <p>However, hydrogen release heat treatment is often applied at 250 °C for 1 hour per 15cms of plate thickness and this in combination with 150 °C minimum preheat ensures the integrity of the HAZ areas.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WELD METAL ANALYSIS COMPOSITION % BY Wt. | <table border="1"> <thead> <tr> <th></th> <th>C</th> <th>Mn</th> <th>Si</th> <th>S</th> <th>P</th> <th>Cr</th> <th>Ni</th> <th>Mo</th> <th>V</th> <th>Fe</th> </tr> </thead> <tbody> <tr> <td>MIN*</td> <td>-</td> <td>1.3</td> <td>0.2</td> <td>-</td> <td>-</td> <td>-</td> <td>1.5</td> <td>0.25</td> <td>-</td> <td></td> </tr> <tr> <td>MAX</td> <td>0.1</td> <td>2.0</td> <td>0.5</td> <td>0.025</td> <td>0.025</td> <td>0.4</td> <td>2.5</td> <td>0.5</td> <td>0.05</td> <td></td> </tr> <tr> <td>TYPICAL</td> <td>0.08</td> <td>1.5</td> <td>0.3</td> <td>0.015</td> <td>0.015</td> <td>0.35</td> <td>2.4</td> <td>0.45</td> <td>0.02</td> <td>Bal.</td> </tr> </tbody> </table> <p><i>* Undiluted weld metal shall have the minimum of at least one of the element as specified on AWS A5.5-2006</i></p> | | | | | | | C | Mn | Si | S | P | Cr | Ni | Mo | V | Fe | MIN* | - | 1.3 | 0.2 | - | - | - | 1.5 | 0.25 | - | | MAX | 0.1 | 2.0 | 0.5 | 0.025 | 0.025 | 0.4 | 2.5 | 0.5 | 0.05 | | TYPICAL | 0.08 | 1.5 | 0.3 | 0.015 | 0.015 | 0.35 | 2.4 | 0.45 | 0.02 | Bal. |
| | C | Mn | Si | S | P | Cr | Ni | Mo | V | Fe | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MIN* | - | 1.3 | 0.2 | - | - | - | 1.5 | 0.25 | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MAX | 0.1 | 2.0 | 0.5 | 0.025 | 0.025 | 0.4 | 2.5 | 0.5 | 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TYPICAL | 0.08 | 1.5 | 0.3 | 0.015 | 0.015 | 0.35 | 2.4 | 0.45 | 0.02 | Bal. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WELD METAL PROPERTIES (ALL WELD METAL) | PROPERTY | | UNITS | MINIMUM | TYPICAL | OTHERS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Tensile strength | | N/mm ² | 760 | 900 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.2% Proof stress | | N/mm ² | 670 | 840 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Elongation on 4d | | % | 15 | 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Reduction of Area (RA) | | % | - | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Impact energy -50 °C | | J | - | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WELDING AMPERAGE AC or DC+ | Ø (mm) | 2.6 | 3.2 | 4.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MIN | 70 | 90 | 110 | 160 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MAX | 100 | 130 | 170 | 230 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OTHER DATA | Electrodes that have become damp should be re-dried at 150 °C for 1 hour | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RELATED PRODUCTS | Please contact our Technical Department for detail | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |