

|  |   |                   |         |            |          |      |                                   |    |     |      |      |    |
|--|---|-------------------|---------|------------|----------|------|-----------------------------------|----|-----|------|------|----|
| <b>NSB-317</b>                           | <b>FOR WELDING AUSTENITIC STAINLESSS STEELS<br/>CONTAINING A NOMINAL 19Cr-13Ni-3.5Mo</b>  |                   |         |            |          |      | <b>DATA SHEET<br/>NO.<br/>74A</b> |    |     |      |      |    |
| SPECIFICATION                            | AWS A5.4  |                   |         | JIS Z 3221 |          |      |                                   |    |     |      |      |    |
| CLASSIFICATION                           | E317-16   |                   |         | D317-16    |          |      |                                   |    |     |      |      |    |
| PRODUCT DESCRIPTION                      | <p>A metallurgically advanced rutile based flux formulated with balanced additions of chemically basic, amphoteric and acid minerals, together with small alloy additions to compensate for arc losses.</p> <p>The flux is concentrically extruded onto a fully alloyed core wire and bound by a blend of silicates that assures both coating strength and resistance to subsequent moisture absorption.</p>  |                   |         |            |          |      |                                   |    |     |      |      |    |
| WELDING FEATURES OF THE ELECTRODE        | <p>This unique flux formulation ensures excellent arc stability, ease of initial arc strike and re-strike minimal spatter on AC and virtually none on DC+. The resultant weld seams are smooth, evenly rippled and free from undercut while slag detachability is excellent. Metal recovery is some 103% with respect to core wire weight.</p>  |                   |         |            |          |      |                                   |    |     |      |      |    |
| APPLICATIONS AND MATERIALS TO BE WELDED  | <p>Applications for the electrode are to be found in the Chemical, Petro-Chemical and Cryogenic Processing and Storage Industries as well as the Food, Brewery and Pharmaceutical Industries using the following materials:</p> <p style="text-align: center;">ASTM            317    CG8M</p> <p>NSB-317 is usually used for welding alloys of similar composition and are utilized in severely corrosive environments (such as those containing halogens) where crevice and pitting corrosion are of concern.</p> |                   |         |            |          |      |                                   |    |     |      |      |    |
| WELD METAL ANALYSIS COMPOSITION % BY Wt. |   | C                 | Mn      | Si         | S        | P    | Cr                                | Ni | Mo  | Cu   | Fe   | FN |
| MIN                                      |   | -                 | 0.5     | -          | -        | -    | 18                                | 12 | 3.0 | -    |      | 8  |
| MAX                                      |   | 0.08              | 2.5     | 1.0        | 0.03     | 0.04 | 21                                | 14 | 4.0 | 0.75 |      | 15 |
| TYPICAL                                  |   | 0.04              | 1.2     | 0.5        | 0.01     | 0.02 | 20                                | 13 | 3.4 | 0.11 | Bal. | 10 |
| WELD METAL PROPERTIES (ALL WELD METAL)   | PROPERTY  | UNITS             | MINIMUM | TYPICAL    | OTHERS   |      |                                   |    |     |      |      |    |
|  | Tensile strength  | N/mm <sup>2</sup> | 550     | 650        |          |      |                                   |    |     |      |      |    |
|  | 0.2% Proof stress   | N/mm <sup>2</sup> | -       | 400        |          |      |                                   |    |     |      |      |    |
|  | Elongation on 4d  | %                 | 30      | 36         | H.V. 210 |      |                                   |    |     |      |      |    |
|  | Reduction of Area (RA)  | %                 | -       | 40         |          |      |                                   |    |     |      |      |    |
|  | Impact energy 20°C  | J                 | -       | 90         |          |      |                                   |    |     |      |      |    |
| WELDING AMPERAGE AC or DC+               | Ø (mm)  | 2.0               | 2.6     | 3.2        | 4.0      | 5.0  |                                   |    |     |      |      |    |
| MIN                                      |   | 40                | 80      | 100        | 140      | 160  |                                   |    |     |      |      |    |
| MAX                                      |   | 60                | 100     | 130        | 160      | 210  |                                   |    |     |      |      |    |
| 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.   |                   |         |            |          |      |                                   |    |     |      |      |    |