



# Mill Test Certificate

**ESAB SeAH Corporation**

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Certificate No : 07-41-0461

Issued Date : 2007.06.05

Brand Name : DUAL SHIELD 7100ULTRA

Customer Name : WESTERN WELDING SERVICES

P/O No. : 40261

This Material conforms to Specification :  
 AWS A 5.20-95, ASME SFA 5.20

Diameter Size : 1.2 MM

Weight : 18,900.0 KG

Lot Number : F103A7D200

Type : E71T-1/T-1MT-9/T-9M

Shielding Gas : 100% CO2

| <u>Chemical Compositions</u> |       | <u>Specification Requirements</u> |       | <u>Typical Mechanical Properties</u><br>As welded            |            | <u>Specification Requirements</u><br>As welded |            |
|------------------------------|-------|-----------------------------------|-------|--------------------------------------------------------------|------------|------------------------------------------------|------------|
| C                            | 0.04  | MAX                               | 0.18  | <b>Tensile Test</b>                                          |            |                                                |            |
| Mn                           | 1.36  | MAX                               | 1.75  | Y.S.(0.2%) Mpa (Ksi)                                         | 481 (69.8) | MIN                                            | 400 (58.0) |
| Si                           | 0.55  | MAX                               | 0.90  | T.S. Mpa (Ksi)                                               | 546 (79.2) | MIN                                            | 480 (69.6) |
| S                            | 0.007 | MAX                               | 0.030 | Elongation(2"),%                                             | 32         | MIN                                            | 22         |
| P                            | 0.016 | MAX                               | 0.030 | Reduction of Area,%                                          | 75         |                                                | N/A        |
| Cr                           | 0.02  | MAX                               | 0.20  | <b>Impacts test, Joule(ft-lb)</b><br><b>(Charpy V-Notch)</b> |            |                                                |            |
| Ni                           | 0.01  | MAX                               | 0.50  | -18 °C (0 °F)                                                | 119 (87.8) | MIN                                            | 27 (19.9)  |
| Mo                           | 0.01  | MAX                               | 0.30  | -29 °C (-20 °F)                                              | 78 (57.5)  | MIN                                            | 27 (19.9)  |
| V                            | 0.02  | MAX                               | 0.08  |                                                              |            |                                                |            |
| Al                           |       |                                   | N/A   | <b>Fillet Weld Test</b> Satisfactory                         |            |                                                |            |
| Cu                           | 0.01  | MAX                               | 0.35  | <b>Radiographic test</b> Satisfactory                        |            |                                                |            |
| Ti                           |       |                                   | N/A   |                                                              |            |                                                |            |
| Co                           |       |                                   | N/A   |                                                              |            |                                                |            |
| N                            |       |                                   | N/A   |                                                              |            |                                                |            |
| Cb+Ta                        |       |                                   | N/A   |                                                              |            |                                                |            |
| Fe                           |       |                                   | N/A   |                                                              |            |                                                |            |
| Zn                           |       |                                   | N/A   |                                                              |            |                                                |            |
| Be                           |       |                                   | N/A   |                                                              |            |                                                |            |
| Pb                           |       |                                   | N/A   |                                                              |            |                                                |            |
| Sn                           |       |                                   | N/A   |                                                              |            |                                                |            |
| W                            |       |                                   | N/A   |                                                              |            |                                                |            |
| Others                       |       |                                   | N/A   |                                                              |            |                                                |            |

Remark:

The undersigned certifies that the products supplied will meet the applicable AWS or JIS(if applicable) Filler Metal specification when tested in accordance with those specifications.  
 The chemistry and ferrite values (if applicable) are made from actual determinations with this lot of electrodes.

By : \_\_\_\_\_

Y.C.Kim, Manager, Q.M.Team