

The Lincoln Electric Company
 22801 St. Clair Avenue
 Cleveland OH 44117



Toughness Verification Test

This is to state that the product indicated was tested according to the procedures shown. Mechanical properties and chemical analysis of the weld deposit were as shown.

Innershield NR-233

11990

| | | | |
|-----------------------|------------------------------|--------------------|---------------------------------|
| Diameter (in.): 0.072 | Current Type & Polarity: DC- | Volts: 20 | Shielding Gas: Not Applicable |
| Code: 4W21KX | | WFS (ipm): 160 | Flow Rate (cfh): Not Applicable |
| Position: 3G-UP | PHT (°F): 300 | Amps: 240 | |
| Thickness (in.): 0.75 | INT (°F): 500 | Avg HI (kJ/in): 54 | |
| | | CTWD (in): 0.875 | |

This product satisfies the requirements of FEMA 353, Appendix D after exposure for 8 weeks at 80°F, 80%RH.

| Charpy V-notch Test Results | |
|------------------------------------|-----------------|
| Temp. (°F) | Energy (ft-lbf) |
| 0 | 48 |
| | 45 |
| | 43 |
| 70 | 77 |
| | 75 |
| | 74 |

| Tensile Test Results | | | | |
|-----------------------------|-----------|----------|----------|--------|
| Aging | UTS (ksi) | YP (ksi) | YS (ksi) | EL (%) |
| 48HRS.@220F | 80 | 65.4 | 61.4 | 28 |

| Chemical Test Results | | | | | | |
|------------------------------|-------|------|------|-------|------|------|
| C | S | Mn | Si | P | Al | Ni |
| 0.171 | 0.004 | 0.64 | 0.21 | 0.011 | 0.59 | 0.02 |

Michael J. Morlock Oct. 20, 2005
 Michael J. Morlock, Certification Supervisor

David A. Fink 21 Oct 2005
 David A. Fink, Manager, Compliance Engineering,
 Consumable R&D

This information is provided solely for the purpose of confirming product conformance with applicable standards. The serviceability of a product or structure utilizing this type of information is and must be the sole responsibility of the builder/user. Many variables beyond the control of The Lincoln Electric Company affect the results obtained in applying this type of information. These variables include, but are not limited to, welding procedure, shielding gas, plate chemistry and temperature, weldment design, fabrication methods and service requirements.