National Standard, LLC
1631 Lake Street
Niles, Michigan 49120

Certificate of Conformance

Product: **Tru-Core MC 70C**
Classification: **E70C-6M H4**
Specification: **AWS A5.18, ASME SFA5.18**
Test completion date: **January 17, 2011**

This is to certify that the product named above and referenced on the sales invoice number is of the same classification, manufacturing process, and raw material requirements as the electrode (cored wire) which was used for the tests conducted on the date shown, the results of which are displayed below. All tests required by the specifications required for classification were performed at that time and the product tested met all requirements. The electrode (cored wire) was manufactured and supplied in accordance with the Quality System Program of RevWires, LLC, located in Troy, Ohio, U.S.A. This Quality System Program meets the requirements of ISO 9001 and ANSI/AWS 5.01.

Operating Parameters	AWS/ASME Requirements	Data and Test Results
Electrode Size (in.)	.045 or 1/16"	.045"
Polarity	DCEP	DCEP
Shielding Gas (per AWS A5.32)	75-80%Argon/Balance CO_2	75-80%Argon/Balance CO_2
Voltage (volts)		28
Wire Feed Speed (in/min)		383
Current (amps)		246
Average heat input (kJ/in)		34
Contact tip to work distance (in.)		5/8
Passes/Layers		14/7
Preheat Temp. °F	RT	RT
Interpass Temp. °F	275-325°F	275-325°F

Test Assembly Material:ASTM A36
Radiographic Test: Conforms
Fillet Weld Test: N/A
Tensile Condition: As Welded

Mechanical Properties of the Weld Deposit (As-welded condition)

Tensile Strength (ksi)	70.0	80.9
Yield Strength,0.2% offset (ksi)	58.0	66.9
% Elongation	22	31
Average CVN impact properties ft·lbf @0°F	N/A	N/A
Average CVN impact properties ft·lbf@-20°F	20	16,52,46,20,24 30 avg.

Chemical Composition of the Weld Deposit (Weight %)

Element	C	Mn	Si	P	S	Cr	Ni	Mo	V	Al	Cu
AWS/ASME Requirements	0.12 Max	1.75 Max.	0.90 Max.	0.03 Max.	0.03 Max.	0.20 Max.	0.50 Max.	0.30 Max.	0.08 Max.	N/A	0.50 Max.
Results	0.03	1.61	0.82	0.005	0.009	0.06	0.03	0.001	<0.001		0.05

Diffusible Hydrogen Data:

AWS A4.3 Requirements (mL/100g) for Diffusible Hydrogen	4.0
Results (mL/100g)	1.97

MTMerlo 1/17/11

Michael T. Merlo, Vice President, Quality — Date