Westmoreland Mechanical Testing & Research, Inc.
P.O. Box 388
Westmoreland Drive
Youngstown, Pa. 15696-0388 U.S.A.
Telephone: 724-537-3131 Fax: 724-537-3151
Website: www.wmtr.com
WMT&R is a technical leader in the material testing industry.

ACCREDITED
621-01 & 621-02

Accredited Nadcap Materials Testing Laboratory

December 28, 2005

CERTIFICATION

Section 1 of 1

WMT&R Report No. 5-40960
P.O. No. 19386
Requisition No. 7743

MetalTek International
The Carondelet Division
8600 Commercial Blvd.
I-55 Industrial Park
Pevely, MO 63070-1528

Attention: Jim Galaske

Subject: All processes performed upon the material as received, were conducted at WMT&R, Inc. in accordance with the WMT&R Quality Assurance Manual, Rev. 9, dated 4/1/2000.
The following tests were performed on this order: TENSILE

TENSILE RESULTS: ASTM E21-05

Requirements: UTS ksi (Min 95\Max ---) 0.2% YS ksi (Min 72\Max ---) 4D Elong. % (Min 32\Max ---) Modulus Msi (Min 21\Max ---)

SOAK TIME: 5 Minutes

SPEED OF TESTING: 0.003 in./in./min., 0.05 in./min./in.

MATERIAL: Metaltek CF8MNMnMOD

DISPOSITION: Acceptable

Specimen ID	TestLog Number	Temp. °F	UTS ksi	0.2% YS ksi	Elong %	RA %	Modulus Msi	Ult. Load lbf	0.2% YLD. lbf	Orig. Dia. (in.)	Final Dia. (in.)	4D Orig GL (in.)	4D Final GL (in.)	Orig. Area (sq. in.)	Machine Number	A\U\R
A2-Z1	C90232	-320	164.0	99.7	59	55	24.9	15870	9645	0.3510	0.2344	1.40	2.22	0.09676184	M9	A
A2-Z2	C90233	-320	166.8	100.3	56	53	25.1	16160	9713	0.3512	0.2419	1.40	2.19	0.09687214	M9	A
A2-Z3	C90234	-320	165.2	99.8	54	51	25.9	16010	9674	0.3513	0.2462	1.40	2.16	0.09692731	M9	A

A\U\R: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT

Customer supplied requirements.

Roy E. Starr/Matt Wojton
Technical Services Manager / Tensile Supervisor

12-28-05
December 28, 2005

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Chemical, Metallurgical, Mechanical, Nondestructive, Environmental Testing, Analyses and Field Service.

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

November 3, 2005
Lab No. 05P-3331
P.O. No. 21324

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): A2- COIL, Z1, Z2, Z3

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 77°K

REQUIREMENTS: 35 ft / lbs

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-4	81	0.051	40
Z1-5	71	0.036	50
Z1-6	110	0.028	60
Average	87	0.038	50
SAMPLE ID	**FOOT LBS.**	**LATERAL EXPANSION**	**% SHEAR**
Z2-4	75	0.031	40
Z2-5	74	0.054	50
Z2-6	78	0.029	30
Average	76	0.038	40
SAMPLE ID	**FOOT LBS.**	**LATERAL EXPANSION**	**% SHEAR**
Z3-4	82	0.048	40
Z3-5	73	0.046	50
Z3-6	67	0.031	40
Average	74	0.042	43

Identification of tested specimen provided by client.

Karl Schmitz, Director
Materials Testing

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8600 Commercial Blvd.
Pevely, MO 63070

November 3, 2005
Lab No. 05P-3331
P.O. No. 21324

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): A2- COIL, Z1, Z2, Z3

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: + 293°

REQUIREMENTS: Chg 50 ~~60~~ ft / lbs

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
Z1-4	180	0.111	90
Z1-5	158	0.076	80
Z1-6	174	0.096	80
Average	171	0.094	83
SAMPLE ID	**FOOT LBS.**	**LATERAL EXPANSION**	**% SHEAR**
Z2-4	160	0.091	90
Z2-5	204	0.066	90
Z2-6	170	0.092	90
Average	178	0.083	90
SAMPLE ID	**FOOT LBS.**	**LATERAL EXPANSION**	**% SHEAR**
Z3-4	140	0.096	90
Z3-5	140	0.076	90
Z3-6	148	0.056	90
Average	143	0.076	90

Identification of tested specimen provided by client.

Karl Schmitz, Director
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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

November 3, 2005
Lab No. 05P-3331
P.O. No. 21324

Attention: Chuck Ruud

REPORT OF MECHANICAL TESTS

SAMPLE ID: A-2 COIL, Z1, Z2, Z3

Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Reduction in Area %	Modulus of Elasticity	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length) in.	%
Z1	0.1948	0.1007	48.3	22.5 Msi	44400	83200	1.13	56.5
Z2	0.1924	0.0755	60.8	21.7 Msi	42100	83700	1.14	57.0
Z3	0.1987	0.0774	61.0	22.3 Msi	43300	84300	1.10	55.0

Round, reduced section tensiles

Yield taken at .2% offset

Tested in accordance with ASTM A 370-03a

Identification of tested specimens provided by the client.

Karl Schmitz, Director
Materials Testing

KS/tlv

PRODUCT CONFORMANCE REPORT

LINCOLN® ELECTRIC

Product	LNM 4455	Size(s) mm	1,2
Class.	EN 12072-99: G 20 16 3 Mn L	Lot/Batch	3018513/78308
		Item No.	692129
Customer	EUROWELD MOORESVILLE N.C. 28117 UNITED STATES	Quantity	105,0 KG
		Customer ref.	P.O.: 05 - 46
		LSW Order No.	SD427896

Chemical analysis (%) EN10204 2.2

C	Si	Mn	P	S	Cr	Ni	Mo	Cu	N
0,01	**0,5**	**7,3**	**0,015**	**0,001**	**20,3**	**15,4**	**2,9**	**0,1**	**0,19**

Mechanical tests, all weld metal EN10204 2.2

Tensile testing

Cond.	Temp. °C	Rp0.2 N/mm2	Rm N/mm2	A5 %
AW	**RT**	**407**	**623**	**41**

Impact testing

Cond.	Temp.1 °C	Av1 J
AW	**-196**	**67**

Additional information EN10204 2.2

Other tests

Remarks

Impact testing (individual values): 70J - 65J - 67J.

The product identified above has been manufactured, tested and supplied in compliance with a Quality Assurance Programme that fulfils the requirements of EN 29000/ ISO 9000/BS 5750 or similar standard.
We herewith certify that the product complies with the above-mentioned standards.
Certified ISO 9001:2000.

Company	Issued by	Function	Date	Cert.No.
Lincoln Smitweld B.V.	**P. Nagels**	**QA Administrator**	**22/03/2005**	**3018513/7830**

Registered Office *Post address* *Telephone:* *Fax:*
Nieuwe Dukenburgseweg 20 *P.O. Box 253* 31 24 3522911 31 24 3522200
6534 AD NIJMEGEN *6500 AG Nijmegen*

V22Uvers3

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

August 16, 2005
Lab No. 05P-2532
P.O. No. 21324

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): LNM 4455, LINCOLN LOT 3018513/78308

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: 293°K

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
LNM4455-7	104	0.085	100
LNM4455-8	106	0.093	100
LNM4455-9	99	0.084	100
Average	103	0.087	100

Identification of tested specimen provided by client.

Karl Schmitz, Director
Materials Testing

KS/tlv

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

August 16, 2005
Lab No. 05P-2532
P.O. No. 21324

Attention: CHUCK RUUD

REPORT OF MECHANICAL TESTS

SAMPLE ID: LNM 4455, LINCOLN LOT 3018513/78308

Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Reduction in Area %	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length) in.	Elongation (2.0" Gage Length) %	Modules of Elasticity
LNM4455	0.1932	0.0866	55.2	65200	95200	0.76	38.0	23.4

Round, reduced section tensiles

Yield taken at .2% offset

Tested in accordance with ASTM A 370-03a

Identification of tested specimens provided by the client.

Karl Schmitz, Director
Materials Testing

KS/tlv

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WMT&R is a technical leader in the material testing industry.

ACCREDITED
621-01 & 621-02

Accredited Nadcap Materials Testing Laboratory

October 18, 2005

CERTIFICATION

Section 1 of 1

WMT&R Report No. 5-35979
Requisition No. 4972

MetalTek International
The Carondelet Division
8600 Commercial Blvd.
I-55 Industrial Park
Pevely, MO 63070-1528

Attention: Jim Galaske

Subject: All processes, performed upon the material as received, were conducted at WMT&R, Inc. in accordance with the WMT&R Quality Assurance Manual, Rev. 9, dated 4/1/2000.
The following tests were performed on this order: TENSILE

TENSILE RESULTS: ASTM E21-03a
SOAK TIME: 5 Minutes
SPEED OF TESTING: 0.0030 in./in./min., 0.0500 in./min./in.
MATERIAL: METALTEK CF8MNMNMOD

DISPOSITION: Report

Specimen ID	TestLog Number	Temp. °F	UTS ksi	0.2% YS ksi	Elong %	RA %	Modulus Msi	Ult. Load lbf	0.2% YLD. lbf	Orig. Dia. (in.)	Final Dia. (in.)	4D Orig GL (in.)	4D Final GL (in.)	Orig. Area (sq. in.)	Machine Number	A\U\R
3018513/78308	C54936	-320	184.9	123.7	33	33	32.8	18470	12350	0.3566	0.2926	1.40	1.86	0.09987403	M9	R

A\U\R: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT

Roy E. Starr/Matt Wojton
Technical Services Manager / Tensile Supervisor

10-18-05
October 18, 2005

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METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

October 5, 2005
Lab No. 05P-3096
P.O. No. 21324

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): WELD PLATE- 3018513 / 78308

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm

TEMPERATURE OF TEST: -320°F

REQUIREMENTS: minimum 35 ft / lbs.

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
3018513/78308-1	48	0.033	50
3018513/78308-2	65	0.045	50
3018513/78308-3	48	0.033	50
Average	54	0.037	50

Identification of tested specimen provided by client.

Karl Schmitz, Director
Materials Testing

KS/tlv

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Certificate No. 0397-01
Certificate No. 0397-02

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