

PRODUCT CONFORMANCE REPORT

ER316 MNH

**LINCOLN®
ELECTRIC**

Product	LNM 4455	Size(s) mm	1,2
Class.	EN 12072-99 G 20 16-3 Mn L	Lot/Batch	3018926/78309
		Item No.	692129
Customer	CK SUPPLY Contact Ernie Simpson Eureka (MISSOURI) 63025 UNITED STATES	Quantity	450,0 KG
		Customer ref.	P.O. SL 057549
		LSW Order No.	SD424496

Chemical analysis (%) EN10204 3.1B

C	Si	Mn	P	S	Cr	Ni	Mo	Cu	N
0,02	0,4	7,3	0,019	0,001	20,1	16,3	2,9	0,1	0,200

Mechanical tests, all weld metal EN10204

Additional information EN10204
Other tests

Remarks

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. van Etteger	QS Manager	10/02/2005	3018926/7830
Registered Office	Telephone:	Fax:		
Nieuwe Dukenburgseweg 20	31 24 3522911	31 24 3522200		
6534 AD NIJMEGEN				





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

METALTEK INTERNATIONAL
8600 Commercial Blvd.
Pevely, MO 63070

August 8, 2005
Lab No. 05P-2334
P.O. No. 21324
Page 1 of 3

Attention: **CHUCK RUUD**

REPORT OF MECHANICAL TESTS

SAMPLE ID: 1) STOCK# LNM 4455, LINCOLN LOT 3018926/78309 -
2) STOCK# LNM 4455, LINCOLN LOT 3017006/72262
3) STOCK# LNM 4455, LINCOLN LOT 3012668/82743
4) STOCK# B316NF METRODE, W021735

Sample ID	Original Area Sq. Inches	Reduced Area Sq. Inches	Reduction in Area %	Modules of Elasticity	Yield Strength PSI	Tensile Strength PSI	Elongation (2.0" Gage Length)	
							in.	%
1	0.1385	0.0897	54.3	24.5 Msi	56900	93900	0.84	42.0
2	0.1886	0.0935	50.4	24.9 Msi	54900	92100	0.85	42.5
3	0.1909	0.0951	50.2	22.6 Msi	57400	93700	0.83	41.5
4	0.1901	0.0962	49.4	23.0 Msi	54800	88200	0.75	37.5


Round, reduced section all weld tensiles

Yield taken at .2% offset

Tested in accordance with ASTM A 370-03a

Identification of tested specimens provided by the client.

KS/tiv


Karl Schmitz, Director
Materials Testing



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

AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST.
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August 8, 2005
Lab No. 05P-2334
P.O. No. 21324
Page 2 of 3

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): STOCK# LNM 4455, LINCOLN LOT 3018926/78309
STOCK# LNM 4455, LINCOLN LOT 3017006/72262

SPECIFICATION: ASTM A 370-03a
SPECIMEN TYPE: "A" Vee Notch
SPECIMEN SIZE: 10 mm x 10 mm (All Weld)
TEMPERATURE OF TEST: 293°K

REQUIREMENTS:

ALL WELD	FOOT LBS.	LATERAL EXPANSION	% SHEAR
78309-7	97	0.074	50
78309-8	96	0.076	50
78309-9	108	0.075	50
Average	100	0.075	50
ALL WELD	FOOT LBS.	LATERAL EXPANSION	% SHEAR
72262-7	126	0.098	50
72262-8	102	0.080	50
72262-9	123	0.087	50
Average	117	0.088	50

Identification of tested specimen provided by client.

KS/tlv


Karl Schmitz, Director
Materials Testing



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August 8, 2005
Lab No. 05P-2334
P.O. No. 21324
Page 3 of 3

Attention: Chuck Ruud

REPORT OF CHARPY IMPACT TEST

MATERIAL (SAMPLE ID): STOCK# LNM 4455, LINCOLN LOT 3012668/82743
STOCK# B316NF METRODE, W021735

SPECIFICATION: ASTM A 370-03a

SPECIMEN TYPE: "A" Vee Notch

SPECIMEN SIZE: 10 mm x 10 mm (All Weld)

TEMPERATURE OF TEST: 293°K

REQUIREMENTS:

ALL WELD	FOOT LBS.	LATERAL EXPANSION	% SHEAR
82743-7	100	0.082	50
82743-8	99	0.076	50
82743-9	94	0.072	50
Average	98	0.077	50
ALL WELD	FOOT LBS.	LATERAL EXPANSION	% SHEAR
W021735-7	102	0.101	50
W021735-8	88	0.073	50
W021735-9	88	0.080	50
Average	93	0.085	50

Identification of tested specimen provided by client.

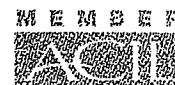
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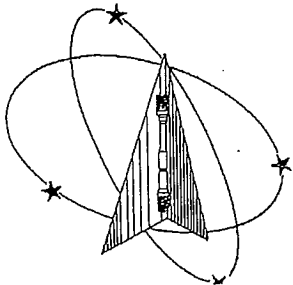

Karl Schmitz, Director
Materials Testing



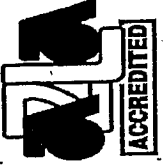
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Westmoreland Mechanical Testing & Research, Inc.
P.O. Box 388
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Youngstown, Pa. 15696-0388 U.S.A.
Telephone: 724-537-3131 Fax: 724-537-3151
Website: www.wmtr.com
WMT&R is a technical leader in the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



621-01 & 621-02

September 13, 2005

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

CERTIFICATION

WMT&R Report No. 5-34328
P.O. No. 19386 Rel No.18
Requisition No. 4934

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: IMPACT and TENSILE

TENSILE RESULTS: ASTM E21-03a
Requirements: UTS ksi (Min 95Max →) 0.2% YS ksi (Min 72Max →) 4D Elong. % (Min 32Max →) Modulus Msi (Min 21Max →)
SOAK TIME: 5 Minutes
SPEED OF TESTING: 0.0030 in./in./min., 0.0500 in./min./in.
MATERIAL: 316 S/S

DISPOSITION: Acceptable

Reference	Lot No. Batch No. Specimen ID	TestLog Number	Temp. °F	UTS ksi	0.2% YS ksi	Elong %	RA %	Modulus Msi	Ult. Load lbf	0.2% YLD. lbf
Lincoln LNM4455	3018926 78309 Tensile	C43938	-320	182.1	128.2	34	24	27.0	17560	12360

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

DISPOSITION: Acceptable

Reference	Lot No. Batch No. Specimen ID	TestLog Number	Orig. Dia. (in.)	Final Dia. (in.)	4D Orig GL (in.)	4D Final GL (in.)	Orig. Area (sq. in.)	Machine Number	AIUR
Lincoln LNM4455	3018926 78309 Tensile	C43938	0.3504	0.3048	1.40	1.87	0.09643131	M9	A

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

Requirements supplied by MetalTek International.

9-13-05

Roy E. Starr
Technical Services Manager

Tensile Supervisor
September 13, 2005

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Locations in Youngstown, PA U.S.A. ~ Tel. (724) 537-3131 and
Banbury U.K. ~ Tel. +44 (0) 1295 261211

Westmoreland Mechanical Testing & Research, Inc.

P.O. Box 388

Westmoreland Drive

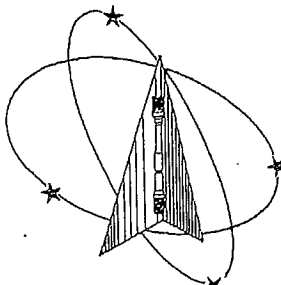
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621-01 & 621-02



September 13, 2005

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

CERTIFICATION

WMT&R Report No. 5-34328
P.O. No. 19386 Rel No. 18
Requisition No. 4934

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: IMPACT and TENSILE

IMPACT RESULTS: ASTM E23-02

REQUIREMENTS: Energy (Min 35Max --)

MATERIAL: Lincoln LNM4455

SAMPLE TYPE: Charpy V-Notch

DISPOSITION: Acceptable

Reference	Lot No. Batch No. Specimen ID	Test Log Number	Sample Size	Temp. °F	Energy ft-lbs	Mils Lat Exp	% Shear Fracture	AIUR
Lincoln LNM4455	3018926 78309 Cvn-1	C43939	Standard	-320	56	18	40	Acceptable
Lincoln LNM4455	3018926 78309 Cvn-2	C43940	Standard	-320	52	18	40	Acceptable
Lincoln LNM4455	3018926 78309 Cvn-3	C43941	Standard	-320	53	12	40	Acceptable

Requirements supplied by MetalTek International.

Matt Wojcik
Roy E. Stan Matt Wojcik
Technical Services Manager Tensile Supervisor
September 13, 2005

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9A

PRODUCT CONFORMANCE REPORT



Product	ENM 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

Impact testing

Cond.	Temp. °C	Rp0.2 N/mm2	Rm N/mm2	A5 %	Cond.	Temp.1 °C	Av1 J
AW	RT	407	623	41	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

Lincoln Smitweld B.V.

Registered Office

Nieuwe Dukenburgseweg 20
6534 AD NIJMEGEN

Post address

P.O. Box 253
6500 AG Nijmegen

Issued by

P. Nagels

Telephone

31 24 3522911

Function

QA Administrator 22/03/2005

Fax:

31 24 3522200

Date

Cert.No.

3018513/7830

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8600 Commercial Blvd.
Pevely, MO 63070

August 16, 2005
Lab No. 05P-2532
P.O. No. 21324
Page 1 of 2

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.

KS/tlv


Karl Schmitz, Director
Materials Testing



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

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Pevely, MO 63070

August 16, 2005
Lab No. 05P-2532
P.O. No. 21324
Page 2 of 2

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. %		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.

KS/tlv

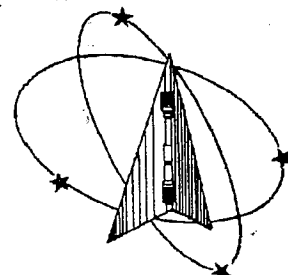

Karl Schmitz, Director
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CERTIFICATION

October 18, 2005

MetalTek International
The Carondelet Division
8600 Commercial Blvd.
I-55 Industrial Park
Pevsly, 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

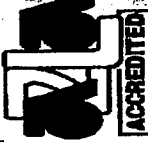
SPEED OF TESTING: 0.0030 in./in./min., 0.0500 in./min./in.

MATERIAL: METALTEK CF8MNMNMOD

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	AUUR
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

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

DISPOSITION: Report



621-01 & 621-02

Section 1 of 1

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

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Roy E. Starnatt Wojton
Technical Services Manager Tensile Supervisor

10-18-05

October 18, 2005



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Pevely, MO 63070

October 5, 2005
Lab No. 05P-3096
P.O. No. 21324
Page 1 of 1

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.

KS/tlv


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