



## Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA  
Phone: 636-479-4499 - Fax: 636-479-3399

## Material Test Report

ENERGY INDUSTRIES OF OHIO

Purchase Order Number PPPL-FP-LTS-2  
Pattern Number SE-141-073 COIL C SHIM  
CAF Metal Designation CF8MNMnMod  
Material Spec CF8MNMN MOD

Cert Number S73220-2  
Pour Date 4/28/2005

Element	Min	Actual	Max
C	0.040	0.07	0.070
CR	18.000	18.1	18.500
MN	2.300	2.97	2.800
MO	2.100	2.45	2.500
N	0.240	0.255	0.280
NI	13.000	13.12	13.500
P	0.000	0.01	0.015
S	0.000	0.01	0.015
SI	0.000	0.5	0.500

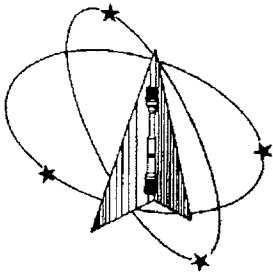
The certificate is produced with EDP and valid without signature.

A handwritten signature in black ink, appearing to read "CAR".

Respectfully Submitted,  
Charles A. Ruud  
Quality Assurance Manager

**Superior Quality Engineered Metal Products**

[www.MetalTekInt.Com](http://www.MetalTekInt.Com)



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](http://www.wmtr.com)

WMTR is a technical leader in the material testing industry.

June 20, 2005

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

Attention: Rick Suria

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

Sample	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	AIUR
29198 (1)	C03696	-320	166.1	96.0	57	62	28.6	33330	19260	0.5054	0.3103	2.00	3.14	0.20061359	M9	R
29198 (2)	C03697	-320	161.4	96.8	38	33	28.8	32390	19430	0.5055	0.4130	2.00	2.75	0.20069299	M9	R
29198 (3)	C03698	-320	165.0	92.6	62	62	27.6	33100	18581	0.5054	0.3109	2.00	3.23	0.20061359	M9	R

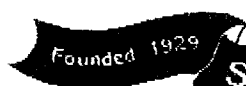
AIUR: A=ACCEPTABLE, U=UNACCEPTABLE, R=REPORT

DISPOSITION: Report

KNOWINGLY OR WILLFULLY FALSIFYING OR CONCEALING A MATERIAL FACT ON THIS FORM OR MAKING FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR REPRESENTATIONS HEREIN COULD CONSTITUTE A FELONY PUNISHABLE UNDER FEDERAL STATUTES. THIS CERTIFICATE OR REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF WMTR, INC.

*Matthew J. Porter*  
Roy E. StarrMatt Porter  
Technical Services Manager Tensile Supervisor  
6-20-05  
June 20, 2005

Testing Specialists for Aerospace, Automotive, and Material Testing Fields  
Locations in Youngstown, PA U.S.A. ~ Tel. (724) 537-3131 and  
Banbury U.K. ~ Tel. +44 (0) 1295 261211

**St. Louis Testing Laboratories**

INCORPORATED



2810 Clark Avenue • St. Louis, MO 63103-2574 • (314) 531-8080 • FAX (314) 531-8085

**METALTEK INTERNATIONAL**8600 Commercial Blvd.  
Pevely, MO 63070June 13, 2005  
Lab No. 05P-1739  
P.O. No. 12516  
Page 1 of 3**Attention: Chuck Ruud****REPORT OF CHARPY IMPACT TEST**

**MATERIAL (SAMPLE ID):** HT # 29198  
**SPECIFICATION:** ASTM A 370-03a  
**SPECIMEN TYPE:** "A" Vee Notch  
**SPECIMEN SIZE:** 10 mm x 10 mm  
**TEMPERATURE OF TEST:** 293° K / 68° F  
**REQUIREMENTS:** 50 ft. / lb

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
1-7	132	0.085	100
1-8	176	0.084	100
1-9	152	0.082	100
Average	153	0.084	100
BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
2-7	160	0.112	100
2-8	144	0.107	100
2-9	140	0.069	100
Average	148	0.096	100
BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
3-7	176	0.110	100
3-8	124	0.087	100
3-9	144	0.107	100
Average	148	0.101	100

*Identification of tested specimen provided by client.**Karl Schmitz, Director  
Materials Testing*Certificate No. 0397-01  
Certificate No. 0397-02AN OFFICIAL COPY OF TEST REPORT WILL BE PROVIDED BY THIS LABORATORY ON REQUEST. DO NOT REPRODUCE.  
NOT OFFICIAL WITHOUT THE RAISED SEAL OF ST. LOUIS TESTING LABORATORIES, INC.  
SEE REVERSE FOR CONDITIONS.



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**METALTEK INTERNATIONAL**

8600 Commercial Blvd.  
Pevely, MO 63070

June 13, 2005  
Lab No. 05p-1739  
P.O. No. 12516  
Page 2 of 3

Attention: Chuck Ruud

**REPORT OF CHARPY IMPACT TEST**

**MATERIAL (SAMPLE ID):** HT # 29198  
**SPECIFICATION:** ASTM A 370-03a  
**SPECIMEN TYPE:** "A" Vee Notch  
**SPECIMEN SIZE:** 10 mm x 10 mm  
**TEMPERATURE OF TEST:** 77° K / -321° F  
**REQUIREMENTS:** 35 ft / lb

BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
4-7	84	0.055	50
4-8	83	0.035	50
4-9	76	0.058	50
<b>Average</b>	81	0.049	50
BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
5-7	82	0.059	50
5-8	82	0.040	50
5-9	98	0.075	80
<b>Average</b>	87	0.058	60
BASE METAL	FOOT LBS.	LATERAL EXPANSION	% SHEAR
6-7	82	0.050	50
6-8	93	0.052	50
6-9	94	0.051	50
<b>Average</b>	90	0.051	50

Identification of tested specimen provided by client.

Karl Schmitz, Director  
Materials Testing



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

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MEMBER  
**ACIL**



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June 13, 2005  
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Page 3 of 3

Attention: **CHUCK RUUD**

### REPORT OF MECHANICAL TESTS

**SAMPLE ID:** 3 EA., 29198

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.	%
29298-1	0.1817	0.0855	52.9	21.2 Msi	40600	91900	1.00	50.0
29198-2	0.1825	0.0962	47.3	20.9 Msi	42700	88500	1.00	50.0
29198-3	0.1840	0.1170	36.4	21.1 Msi	39500	88300	0.97	48.5

Round, reduced section room temperature 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. 0097-01  
Certificate No. 0097-02

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SEE REVERSE FOR CONDITIONS





## Carondelet Division

8600 Commercial Blvd. - Pevely, MO 63070 USA  
Phone: 636-479-4499 - Fax: 636-479-3399

### Final Inspection Report

Customer Name: ENERGY  
INDUSTRIES OF  
OHIO

Pattern: SE-141-073 COIL C SHIM

Order Number: PPPL-FP-LTS-2

ASTM Metal CF8MNMN MOD

Date 6/22/2005

Type Description	Cert Number	Procedure	Acceptance Criteria	Actual
Liquid Penetrant	S73220-2	CQP - 300 Rev 9	ASTM A903 Level II	Acceptable
Mag Perm	S73220-2	SOP Mag Perm 100 Rev 1	<1.02	Acceptable
Radiographic	S73220-2	Technique # 12726	MSS SP 54	Acceptable
Visual	S73220-2	CQP - 500 REV 4	ASTM A802 LEVEL 2	Acceptable

A handwritten signature in black ink, appearing to read "Charles A. Ruud".

Respectfully Submitted,  
Charles A. Ruud  
Quality Assurance Manager

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## Carondelet Division

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## Certificate of Conformance

ENERGY INDUSTRIES OF OHIO

Order Number PPPL-FP-LTS-2

Pattern SE-141-073 COIL C SHIM

ASTM Metal CF8MNMN MOD

Date 6/21/2005

Cert Number

S73220-2

A handwritten signature in black ink, appearing to read "CARUUD".

We certify that we have complied in accordance with the drawings(s) and specifications(s) listed on the above purchase order. The articles furnished were made and/or processed from parts and/or materials in accordance with all applicable drawings(s) and specifications(s) pursuant to the afore mention purchase order.

Respectfully Submitted,  
Charles A. Ruud  
Quality Assurance Manager

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Corrective Action 1308  
Carondelet Division - CA / PA / RGA Database  
Corrective Action Type NCR  
Date 6/13/2005  
CA Originator C. Ruud  
Pattern Number: C and A Coil Shims 11 Pieces

**Description of Defect / Non-Conformance**

Chemistry for 11 shim castings is out of specification.

**Root Cause**

Chemistry specification was not changed in system and not communicated to Lab personnel.

**Corrective Action**

Specification was corrected in system and Lab personnel trained. Mag permeability was checked on the parts and are less than 1.02u.

**Verification of Corrective Action**

Chemistries were checked on subsequent parts and are within specification.

**Preventive Action**

Create Inspection and Test Plan summarizing all requirements.

**Estimated Completion Date**

6/15/05

**Actual Completion Date**

Complete.

A handwritten signature in black ink, appearing to read "C. Ruud". The signature is stylized with a large, looped "C" and a long, sweeping underline.

Signed: C. Ruud

CC: Roger Broman, Barry Craig, Joe Edwards, E.J. Kubick





# Metal

## INTERNATIONAL

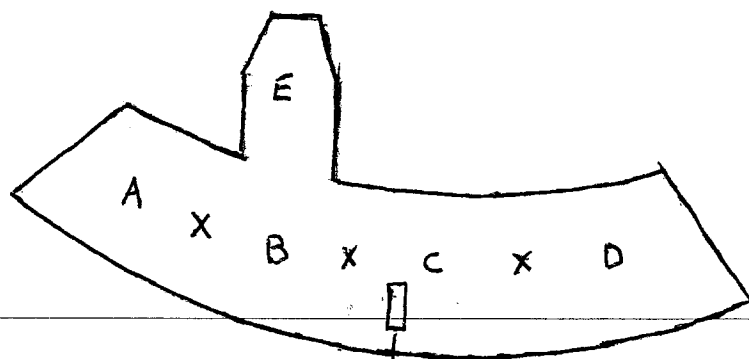
### RADIOGRAPHIC STANDARD SHOOTING SKETCH

Customer <u>Energy Industries of Ohio</u>	Pattern Number <u>SE-141-073</u>
Material <u>CF8MNMN-MOD</u>	Traceability Number <u>MS73220</u>
Film Manufacturer <u>FUJI</u>	Source Number <u>CO60 24.7 CI</u>
IQI LEVEL <u>2-2T</u> From CQP 401 <input checked="" type="checkbox"/> Other (Specify, E.G. 2-4T, 2-1T) <u>N/A</u>	

Exposures (views)	A	B	C	D	E								
Thickness (IN.)	<u>3 3/8"</u>												
S/F Distance (IN.)	<u>24"</u>												
Penetrameter	<u>50</u>												
Time (MIN.)	<u>calculate</u>												
Focal Spot (IN.)	<u>#1</u>												
Film Size (IN.)	<u>14X17</u>												
Screen Size (Pb)	<u>.01</u>												
Front/Back	<u>SWE</u>												
S.W.E./D.W.E.	<u>SWV</u>												
S.W.V/D.W.V.	<u>80</u>												
Film Type	<u>E186</u>												
Acceptance Standard	<u>III</u>												
Severity Level													

Shooting Sketch (Use Additional Pages as Needed)

use Spec. MSS-SP-54



TYP. Source Placement

TYP. Penny Placement

TYP. Film Placement

Technique Prepared By: Ron Kelley

Level: II

Date: 3-10-05

Technique Approved By: [Signature]

Level: III

Date: 3-10-05

C Shim

