

The purpose of this form is to verify the presence of the appropriate quality assurance records for hardware shipments being installed at SLAC. This form is required to be completed by ANL LCLS project personnel prior to authorizing shipments to SLAC.

System or Component Name: LCLS Fixed Support Assembly Date: Jan 15, 2008

Part/Drawing Number: L143-143080-200000 Serial Numbers: 19

Supplier Name: Hi-Tech Manufacturing Inc PO Number: 7A-08189

Responsible LCLS Technical Lead: M. White Responsible Engineer(s): E. Trakhtenberg

No.	Record Name	Document number	Origin	Comments	Present?
1.	ANL Component Acceptance Record	LCLS	ANL	ANL Acceptance record of ANL acceptance date and applicable drawing revisions.	Present
2.	Dynamic CAM test results		ANL		Present
3.	Certificates of Conformance for Vibratory Stress Relief	NA	American Grinding	L1430802-200030, L1430802-200021, L1430802-200011	Present
4.	Certificates of Inspection	NA	Hi-Tech	L1430401-100101, L1430401-100201,	Present
5.	Certificates of Inspection	NA	Hi-Tech	L1430401-100103, L1430401-100303,	Present
6.	Copies of the ANL Inspection/Acceptance Report of Components for As-Built Drawings	L143-00093	Hi-Tech	Undulator Girder	Present
7.	Copies of the ANL Inspection/Acceptance Report of Components for As-Built Drawings	L143-00093	Hi-Tech	Interface Plate (Double CAM)	Present
8.	Copies of the ANL Inspection/Acceptance Report of Components for As-Built Drawings	L143-00093	Hi-Tech	Interface Plate (Single CAM)	Present
9.	Weld Certification	NA	Hi-Tech	Support Girder (L1430401-10040)	Present
10.	Inspection Planning & Report Form	NA	Metalex	Undulator Support Girder	Present
11.	Certificate of compliance – Stress Test	NA	Cincinnati Steel Treating Co.	Support Girder	Present
12.	Certificate of Conformance	NA	Metalex	Support Girder	Present
13.	Calibration Certificate – CMM metric & inches	TG13480 & TG13482	American Calibration Inc.	Unit is in working condition	Present in SM #1 QA
14.	Various MSDS for Paint & Oil and Concrete Epoxy Grease	NA	NA	MSDS for chemicals used.	Present
15.	Welding Operator Qualification Test Record	NA	Bodycote Taussig Inc.	Welders qualifications	Present
16.	Certificates of Conformance for Support Girder raw materials	NA	Metalex	Precision Steel Services Inc., Frederick Steel Co., CMC Steel	Present in SM #1 QA
17.	Certificate of Compliance /Statement of Quality	NA	The Sherwin-Williams Co.		Present
18.	Visual Weld Inspection Report	NA	Metalex	Girder Support	Present
19.	Visual Weld Inspection Report	NA	HiTech	Girder Support	Present
20.	Gearhead Inspection Report		GAM	In Folder	Present

No.	Record Name	Document number	Origin	Comments	Present?
21.	Certification of Single Axis Table		Lintech		Present in SM #1 QA
22.	Certificate of Conformance for CAM Motors		Animatics	Motors - In Folder	Present
23.	Shipping Crate Design Approval Record	NA	Hi-Tech		Present
24.	Misc. Photographs	NA	Hi-Tech		

**Optional notes or Comments:**

The Mill Certificates for the steel dimensions, chemical composition, and tensile properties are present for Girder serial number 1 only because the material for all of the girder assemblies was purchased at one time.

Signature of person that completed this table of contents: John Schenk Date: 1/31/08

Concurrence signatures of this table of contents contents:

Responsible ANL LCLS Engineer: [Signature] Date: 2/1/08

Responsible ANL QA Coordinator: [Signature] Date: 2/1/08

Responsible ANL LCLS Technical Lead: [Signature] Date: 2/25/08

ANL LCLS Project Manager: [Signature] Date: 2/1/08

Distribute this completed form to: ANL Records package. ANL LCLS QA. ANL LCLS Technical Lead

THE PURPOSE OF THIS FORM IS TO PROVIDE A RECORD OF THE ACCEPTANCE OF LCLS COMPONENTS DELIVERED BY ANL, AS WELL AS ANY ISSUES THAT MAY ARISE FROM THE ACCEPTANCE PROCESS.

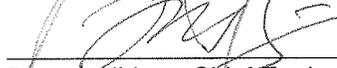
System or Component Name	Part/ Drawing Number	Rev.	Qty	Serial No.	Supplier Name	ANL Purchase Order Number
Fixed Support General Assembly	L1430802-200000	07	10 5	19, 20, 21, 22, 23	Hi- Tech Manufacturing	7A-08189
Undulator Girder Assembly	L1430401-100396	04	1 5	19, 20, 21, 22, 23	Hi- Tech Manufacturing	7A-08189

The components appearing above are being delivered to SLAC and have been deemed to meet the requirements defined in the ANL Statement of Work Document # L143-00093-03/ SLAC No.SP-381-004-26.

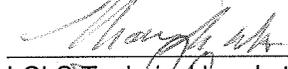
**ANL Approval Signatures:**

  
 \_\_\_\_\_  
 LCLS Quality Assurance Coordinator at ANL

1/9/08  
 \_\_\_\_\_  
 Date

  
 \_\_\_\_\_  
 Responsible or Chief Engineer at ANL

01/09/08  
 \_\_\_\_\_  
 Date

  
 \_\_\_\_\_  
 LCLS Technical Lead at ANL

09-Jan 2008  
 \_\_\_\_\_  
 Date

  
 \_\_\_\_\_  
 LCLS Project Manager at ANL

09 Jan 2008  
 \_\_\_\_\_  
 Date

The components appearing above have been accepted by SLAC and have been deemed to have met the requirements defined in the ANL Statement of Work Document # L143-00093-03/ SLAC No.SP-381-004-26.

**SLAC Acceptance Signatures:**

\_\_\_\_\_  
 LCLS Quality Assurance Manager at SLAC

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 LCLS Chief Engineer at SLAC

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 LCLS Project Director at SLAC

\_\_\_\_\_  
 Date

The LCLS Quality Assurance Manager at SLAC is responsible for retaining the original completed and for forwarding copies of the completed form to all who have signed the form

LCLS UNDULATOR SUPPORT CAM TEST DATA  
ADVANCED PHOTON SOURCE  
ARGONNE NATIONAL LAB

19-1

TIME OF TEST: 10/29/2007 10:44:17 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 2177.91  
ROTARY POT GAIN = 346.32  
POT OFFSET (DEG) = 59.16  
DEVIATION RMS (MICRONS) = 7.36  
DEVIATION MAX (MICRONS) = 23.92  
DEVIATION MIN (MICRONS) = -16.61

POS#1 BWD

CAM ECCEN R (MICRONS) = 2180.52  
ROTARY POT GAIN = 346.32  
POT OFFSET (DEG) = 59.16  
DEVIATION RMS (MICRONS) = 7.48  
DEVIATION MAX (MICRONS) = 19.11  
DEVIATION MIN (MICRONS) = -19.26

POS#2 FWD

CAM ECCEN R (MICRONS) = 2178.35  
ROTARY POT GAIN = 346.32  
POT OFFSET (DEG) = 59.16  
DEVIATION RMS (MICRONS) = 6.83  
DEVIATION MAX (MICRONS) = 22.31  
DEVIATION MIN (MICRONS) = -14.87

POS#2 BWD

CAM ECCEN R (MICRONS) = 2181.28  
ROTARY POT GAIN = 346.32  
POT OFFSET (DEG) = 59.16  
DEVIATION RMS (MICRONS) = 6.82  
DEVIATION MAX (MICRONS) = 18.68  
DEVIATION MIN (MICRONS) = -14.58

POS#3 FWD

CAM ECCEN R (MICRONS) = 2176.24  
ROTARY POT GAIN = 346.32  
POT OFFSET (DEG) = 59.16  
DEVIATION RMS (MICRONS) = 7.19  
DEVIATION MAX (MICRONS) = 22.30  
DEVIATION MIN (MICRONS) = -15.99

POS#3 BWD

CAM ECCEN R (MICRONS) = 2179.17  
ROTARY POT GAIN = 346.32  
POT OFFSET (DEG) = 59.16  
DEVIATION RMS (MICRONS) = 7.50  
DEVIATION MAX (MICRONS) = 17.73  
DEVIATION MIN (MICRONS) = -18.11

=== TEST PASS! ===

--- END OF TEST ---

LCLS UNDULATOR SUPPORT CAM TEST DATA  
ADVANCED PHOTON SOURCE  
ARGONNE NATIONAL LAB

19-2

TIME OF TEST: 11/1/2007 8:33:19 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 1549.95  
ROTARY POT GAIN = 345.01  
POT OFFSET (DEG) = 59.50  
DEVIATION RMS (MICRONS) = 10.49  
DEVIATION MAX (MICRONS) = 70.82  
DEVIATION MIN (MICRONS) = -23.20

POS#1 BWD

CAM ECCEN R (MICRONS) = 1552.66  
ROTARY POT GAIN = 345.01  
POT OFFSET (DEG) = 59.50  
DEVIATION RMS (MICRONS) = 8.36  
DEVIATION MAX (MICRONS) = 20.94  
DEVIATION MIN (MICRONS) = -28.94

POS#2 FWD

CAM ECCEN R (MICRONS) = 1549.83  
ROTARY POT GAIN = 345.01  
POT OFFSET (DEG) = 59.50  
DEVIATION RMS (MICRONS) = 7.70  
DEVIATION MAX (MICRONS) = 25.85  
DEVIATION MIN (MICRONS) = -20.48

POS#2 BWD

CAM ECCEN R (MICRONS) = 1551.50  
ROTARY POT GAIN = 345.01  
POT OFFSET (DEG) = 59.50  
DEVIATION RMS (MICRONS) = 8.82  
DEVIATION MAX (MICRONS) = 22.71  
DEVIATION MIN (MICRONS) = -27.38

POS#3 FWD

CAM ECCEN R (MICRONS) = 1551.79  
ROTARY POT GAIN = 345.01  
POT OFFSET (DEG) = 59.50  
DEVIATION RMS (MICRONS) = 8.80  
DEVIATION MAX (MICRONS) = 27.81  
DEVIATION MIN (MICRONS) = -21.75

POS#3 BWD

CAM ECCEN R (MICRONS) = 1551.75  
ROTARY POT GAIN = 345.01  
POT OFFSET (DEG) = 59.50  
DEVIATION RMS (MICRONS) = 8.81  
DEVIATION MAX (MICRONS) = 21.59  
DEVIATION MIN (MICRONS) = -27.87

=== TEST PASS! ===

--- END OF TEST ---

LCLS UNDULATOR SUPPORT CAM TEST DATA  
ADVANCED PHOTON SOURCE  
ARGONNE NATIONAL LAB

19-3

TIME OF TEST: 11/1/2007 8:18:11 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 1575.92  
ROTARY POT GAIN = 348.53  
POT OFFSET (DEG) = 59.80  
DEVIATION RMS (MICRONS) = 10.75  
DEVIATION MAX (MICRONS) = 27.45  
DEVIATION MIN (MICRONS) = -26.70

POS#1 BWD

CAM ECCEN R (MICRONS) = 1573.74  
ROTARY POT GAIN = 348.53  
POT OFFSET (DEG) = 59.80  
DEVIATION RMS (MICRONS) = 10.90  
DEVIATION MAX (MICRONS) = 35.07  
DEVIATION MIN (MICRONS) = -26.62

POS#2 FWD

CAM ECCEN R (MICRONS) = 1574.81  
ROTARY POT GAIN = 348.53  
POT OFFSET (DEG) = 59.80  
DEVIATION RMS (MICRONS) = 11.09  
DEVIATION MAX (MICRONS) = 29.07  
DEVIATION MIN (MICRONS) = -28.79

POS#2 BWD

CAM ECCEN R (MICRONS) = 1572.53  
ROTARY POT GAIN = 348.53  
POT OFFSET (DEG) = 59.80  
DEVIATION RMS (MICRONS) = 11.39  
DEVIATION MAX (MICRONS) = 28.80  
DEVIATION MIN (MICRONS) = -28.72

POS#3 FWD

CAM ECCEN R (MICRONS) = 1574.26  
ROTARY POT GAIN = 348.53  
POT OFFSET (DEG) = 59.80  
DEVIATION RMS (MICRONS) = 11.14  
DEVIATION MAX (MICRONS) = 28.18  
DEVIATION MIN (MICRONS) = -28.33

POS#3 BWD

CAM ECCEN R (MICRONS) = 1571.84  
ROTARY POT GAIN = 348.53  
POT OFFSET (DEG) = 59.80  
DEVIATION RMS (MICRONS) = 11.12  
DEVIATION MAX (MICRONS) = 31.25  
DEVIATION MIN (MICRONS) = -28.47

=== TEST PASS! ===

--- END OF TEST ---

LCLS UNDULATOR SUPPORT CAM TEST DATA  
ADVANCED PHOTON SOURCE  
ARGONNE NATIONAL LAB

19-4

TIME OF TEST: 11/1/2007 9:34:12 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 1562.66

ROTARY POT GAIN = 345.58

POT OFFSET (DEG) = 59.95

DEVIATION RMS (MICRONS) = 8.34

DEVIATION MAX (MICRONS) = 21.78

DEVIATION MIN (MICRONS) = -22.70

POS#1 BWD

CAM ECCEN R (MICRONS) = 1565.90

ROTARY POT GAIN = 345.58

POT OFFSET (DEG) = 59.95

DEVIATION RMS (MICRONS) = 8.48

DEVIATION MAX (MICRONS) = 19.03

DEVIATION MIN (MICRONS) = -20.96

POS#2 FWD

CAM ECCEN R (MICRONS) = 1564.37

ROTARY POT GAIN = 345.58

POT OFFSET (DEG) = 59.95

DEVIATION RMS (MICRONS) = 8.30

DEVIATION MAX (MICRONS) = 20.17

DEVIATION MIN (MICRONS) = -25.79

POS#2 BWD

CAM ECCEN R (MICRONS) = 1565.66

ROTARY POT GAIN = 345.58

POT OFFSET (DEG) = 59.95

DEVIATION RMS (MICRONS) = 8.21

DEVIATION MAX (MICRONS) = 18.64

DEVIATION MIN (MICRONS) = -20.56

POS#3 FWD

CAM ECCEN R (MICRONS) = 1562.79

ROTARY POT GAIN = 345.58

POT OFFSET (DEG) = 59.95

DEVIATION RMS (MICRONS) = 8.89

DEVIATION MAX (MICRONS) = 22.26

DEVIATION MIN (MICRONS) = -22.18

POS#3 BWD

CAM ECCEN R (MICRONS) = 1563.86

ROTARY POT GAIN = 345.58

POT OFFSET (DEG) = 59.95

DEVIATION RMS (MICRONS) = 8.50

DEVIATION MAX (MICRONS) = 20.28

DEVIATION MIN (MICRONS) = -19.72

=== TEST PASS! ===

--- END OF TEST ---

LCLS UNDULATOR SUPPORT CAM TEST DATA  
ADVANCED PHOTON SOURCE  
ARGONNE NATIONAL LAB

19-5

TIME OF TEST: 11/1/2007 11:06:04 AM

POS#1 FWD

CAM ECCEN R (MICRONS) = 1588.25

ROTARY POT GAIN = 344.91

POT OFFSET (DEG) = 58.92

DEVIATION RMS (MICRONS) = 6.36

DEVIATION MAX (MICRONS) = 18.42

DEVIATION MIN (MICRONS) = -14.51

POS#1 BWD

CAM ECCEN R (MICRONS) = 1591.80

ROTARY POT GAIN = 344.91

POT OFFSET (DEG) = 58.92

DEVIATION RMS (MICRONS) = 5.93

DEVIATION MAX (MICRONS) = 17.04

DEVIATION MIN (MICRONS) = -13.91

POS#2 FWD

CAM ECCEN R (MICRONS) = 1588.14

ROTARY POT GAIN = 344.91

POT OFFSET (DEG) = 58.92

DEVIATION RMS (MICRONS) = 6.24

DEVIATION MAX (MICRONS) = 16.08

DEVIATION MIN (MICRONS) = -15.04

POS#2 BWD

CAM ECCEN R (MICRONS) = 1589.84

ROTARY POT GAIN = 344.91

POT OFFSET (DEG) = 58.92

DEVIATION RMS (MICRONS) = 6.26

DEVIATION MAX (MICRONS) = 17.61

DEVIATION MIN (MICRONS) = -14.40

POS#3 FWD

CAM ECCEN R (MICRONS) = 1590.22

ROTARY POT GAIN = 344.91

POT OFFSET (DEG) = 58.92

DEVIATION RMS (MICRONS) = 7.47

DEVIATION MAX (MICRONS) = 16.99

DEVIATION MIN (MICRONS) = -24.72

POS#3 BWD

CAM ECCEN R (MICRONS) = 1591.85

ROTARY POT GAIN = 344.91

POT OFFSET (DEG) = 58.92

DEVIATION RMS (MICRONS) = 6.05

DEVIATION MAX (MICRONS) = 16.95

DEVIATION MIN (MICRONS) = -14.77

=== TEST PASS! ===

--- END OF TEST ---



**AMERICAN GRINDING & MACHINE CO.**

2000 N. MANGO AVE. CHICAGO, IL 60639  
773-889-4343 toll free: 877-988-4343  
FAX 773-889-3781

CERTIFICATE OF COMPLIANCE

Customer: Hi-Tech Mfg PHONE: ( 847 ) 678-1616  
4637 N. 25<sup>th</sup> Ave. FAX: ( 847 ) 678-1716  
Schiller Park, IL  
60176

RE: PURCHASE ORDER 16845

PRINT NUMBER(S) (if applicable) L143 0802-200030

This is to certify that the services and /or material furnished by American Grinding & Machine Company on this order meets the requirements of listed purchase order and any prints furnished to us for that purchase order.

[Signature]  
Signature of American Grinding Representative

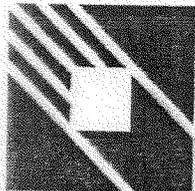
7/19/07  
Date

*Certificate of Inspection*

*This certificate is presented to*

**Argonne National Laboratory**

Per PO # 7A-08189, part #  
L1430401-100103 (PF-381-000-15) quantity of 16pcs  
L1430401-100303 (PF-381-002-15) quantity of 4pcs  
Have been inspected and met all drawing requirements.



**HT-TECH**

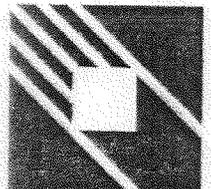
Manufacturing, Inc.  
ISO 9001:2000  
certified

Q.C. Supervisor

*M. Delgado*

09-07-07  
Date

*Certificate of Inspection*



**HILL-TREGER**

Manufacturing, Inc.

ISO 9001:2000  
certified

*This certificate is presented to*

**Argonne National Laboratory**

Per PO # 7A-08189, part #:  
L1430401-100101 (PF-381-000-13) quantity of 114pcs  
L1430401-100201 (PF-381-000-23) quantity of 38pcs  
Have been inspected and met all drawing requirements.

Q.C. Supervisor

*M. Lopez*

07-07-07  
Date

## INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR AS-BUILT DRAWINGS

VENDOR: METALEX, INC.

PART NAME: UNDULATOR GIRDER ASSY

DRAWING #: L1430401-100400 (05)

SERIAL #: 19

P.O. #: 7A-08189

DATE: 11-26-07

### ACCEPTANCE CRITERIA

1. Visually inspect for damage. Accept/Reject

### CRITICAL DIMENSIONS (mm)

FEATURE	TARGET	TOLERANCE	MEASURED VALUE	
Perpendicularity of Datum B to C	<math>\leq 0.025</math>	<math>\leq 0.025</math>	$\angle = .025$	Accept/Reject
Perpendicularity of Datum A to C	<math>\leq 0.025</math>	<math>\leq 0.025</math>	$\angle = .025$	Accept/Reject
True position of 2 D2 hole to 2 D3 holes	<math>\leq 0.03</math>	<math>\leq 0.03</math>	$\angle = .03$	Accept/Reject
Parallelism of support pad surface to Datum C	<math>\leq 0.07</math>	<math>\leq 0.07</math>	#1 $\angle = .07$	Accept/Reject
			#2 $\angle = .07$	
			#3 $\angle = .07$	
			#4 $\angle = .07$	
Distance from Datum C to support pad surface	109.50	+0.2/-0.2	#1 109.42	Accept/Reject
			#2 109.50	
			#3 109.47	
			#4 109.47	

INSPECTOR:

*Simod*

QA Supervisor:

*Murtagh*

TEST EQUIPMENT USED: feeler gage, dial indicator, micrometer, precision square.

COMMENTS:

## INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR AS-BUILT DRAWINGS

VENDOR: HI-TECH MANUFACTURING, INC.

PART NAME: INTERFACE PLATE (DOUBLE CAM)

DRAWING #: L1430802-200011 (03)

SERIAL #: 19

P.O. #: 7A-08189

DATE: 08-20-07

### ACCEPTANCE CRITERIA

1. Visually inspect for damage.	<u>Accept/Reject</u>
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### CRITICAL DIMENSIONS (mm)

FEATURE	TARGET	TOLERANCE	MEASURED VALUE	
Flatness of Datum A	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.02</u>	<u>Accept/Reject</u>
Perpendicularity of Datum B to A	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.02</u>	<u>Accept/Reject</u>
Parallelism of inner edge on Cam Block A to B	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.02</u>	<u>Accept/Reject</u>
Parallelism of inner edge on Cam Block B to B	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.02</u>	<u>Accept/Reject</u>
Parallelism of outer edge on Cam Block B to B	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.02</u>	<u>Accept/Reject</u>
Width of mounting surface on Cam Block B	142.01	+0.02/-0	<u>142.02</u>	<u>Accept/Reject</u>
Width of mounting surface on Cam Block A	254.00	+0.02/-0	<u>254.01</u>	<u>Accept/Reject</u>
Separation of outer edges of Cam Blocks	685.42	+0.08/-0.08	<u>685.49</u>	<u>Accept/Reject</u>

INSPECTOR: Simon

QA Supervisor: Muraza

TEST EQUIPMENT USED: CMM, gage blocks, dial indicator.

COMMENTS:

## INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR AS-BUILT DRAWINGS

VENDOR: HI-TECH MANUFACTURING, INC.

PART NAME: INTERFACE PLATE (SINGLE CAM)

DRAWING #: L1430802-200021 (03)

SERIAL #: 19

P.O. #: 7A-08189

DATE: 08-20-07

### ACCEPTANCE CRITERIA

1. Visually inspect for damage.	<u>Accept/Reject</u>
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### CRITICAL DIMENSIONS (mm)

FEATURE	TARGET	TOLERANCE	MEASURED VALUE	
Flatness of Datum A	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.01</u>	<u>Accept/Reject</u>
Perpendicularity of Datum B to A	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.01</u>	<u>Accept/Reject</u>
Parallelism of upper edge on lower Cam Block C to B	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.01</u>	<u>Accept/Reject</u>
Parallelism of lower edge on upper Cam Block C to B	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.02</u>	<u>Accept/Reject</u>
Parallelism of upper edge on upper Cam Block C to B	<math>\leq 0.02</math>	<math>\leq 0.02</math>	<u>0.01</u>	<u>Accept/Reject</u>
Width of mounting surface on lower Cam Block	142.01	+0.02/-0	<u>142.02</u>	<u>Accept/Reject</u>
Width of mounting surface on upper Cam Block	142.01	+0.02/-0	<u>142.02</u>	<u>Accept/Reject</u>
Separation of inner edges of Cam Blocks	457.43	+0.08/-0.08	<u>457.44</u>	<u>Accept/Reject</u>

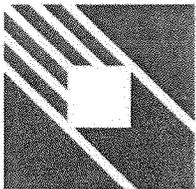
INSPECTOR: Simon

QA Supervisor: Muel

TEST EQUIPMENT USED: CMM, gage blocks, dial indicator.

COMMENTS:

*Weld Certificate*



**HT-TECH**

Manufacturing, Inc.

ISO 9001:2000  
certified

*This certificate is presented to*

**Argonne National Laboratory**

Per PO # 74-08189, part # L1430802-200030 quantity of 76pcs

Procedure: #PQR101

Customer Specification: #AWS D1.1

Weld wire Spec: #AWS A5.28, Type: ER80S-D2, Heat: 83479, Dia: .045

Welder: Tadusz Sutowski

*Have been welded in accordance with the referenced welding specification.*

Q.C. Supervisor

*Mulvey - A. [Signature]*

11-17-07  
Date

**METALEX WELD CERTIFICATION**

MX JOB #: 07-7558 QTY 4 CUSTOMER: Hi-Tech Manufacturing, Inc.  
PART NAME: Support Girder  
PART NUMBER: L1430401-100400 REVISION: 6  
S/N: (if applicable) 7A-08198-16 thru  
7A-08198-19

METALEX PROCEDURE # WPS 146 (K. Ballard)  
CUST. SPECIFICATION # AWS D1.1  
WELD WIRE SPEC AWS A5.20  
TYPE E71T-1  
HEAT 81192  
DIAMETER 1/16"

<u>SERIAL NUMBER</u>	<u>WELDER</u>
7A-08198-16	Ken Ballard
7A-08198-17	Ken Ballard
7A-08198-18	Ken Ballard
7A-08198-19	Ken Ballard

THE ABOVE PARTS LISTED WERE WELDED IN ACCORDANCE WITH THE REFERENCED WELDING SPECIFICATION.

  
\_\_\_\_\_  
Metalex Quality Control

11/19/07  
\_\_\_\_\_  
Date



**Metalex**  
 Customized Machinery and Parts  
 CERTIFIED ISO 9001 QUALITY MANAGEMENT

**INSPECTION PLANNING & REPORT FORM**  
 Metalex Mfg.  
 5750 Cornell Rd ! Cincinnati, OH 45242 ! (513) 489-0507

Job No.  
**2007-7558**

Qty  
**1**

Inspection Origin		Vendor (Sub-Tier Source) Identification		Customer Identification		
<input type="checkbox"/> Receiving <input type="checkbox"/> In-Process <input checked="" type="checkbox"/> Final <input type="checkbox"/> Rework/Repair <input type="checkbox"/> First Article		Vendor Name N/A		Part No. L1430401-100400	REV 6	P.O. Number 16185
		Date Rec'd N/A	P.O. No. N/A	Part Name Undulator Support Girder		
At Oper. 170	Serial Numbers: 19		Customer Name Hi-Tech Manufacturing			

SPECIFICATION	B/P ZONE	INSPECTION METHOD / GAGE NO.	ACTUAL DIMENSION / GAGE VERIFICATION (Range of Readings or Accept Status)	QTY ACC	QTY REJ
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**\*\* ALL DIMENSIONS TO BE RECORDED IN MILLIMETERS \*\***  
**\*\* ALL TEMPERATURES TO BE RECORDED IN CELSIUS \*\***

**ALL DIMENSIONS APPLY AT A TEMPERATURE OF 20 DEGREES CELSIUS. PART MUST BE IN THERMAL EQUILIBRIUM DURING MEASUREMENTS AND AT THE SAME TEMPERATURE AT THE BEGINNING AND CONCLUSION OF THE MEASUREMENTS WITHIN +/-2 DEG. CELSIUS.**

PART TEMPERATURE <i>BEFORE</i> INSPECTION (Record in Celsius)	SOW 4.5.4	CONTACT THERMOMETER MX1794	20.33° C		
PART TEMPERATURE <i>DURING</i> INSPECTION (Record in Celsius)	SOW 4.5.4	CONTACT THERMOMETER MX1794	20.35° C		
PART TEMPERATURE <i>AFTER</i> INSPECTION (Record in Celsius)	SOW 4.5.4	CONTACT THERMOMETER MX1794	20.36° C		

**CRITICAL DIMENSIONS PER SECTION 4.5.2.2 OF DOC. # L143-00093**

**SHEET 2 – TOP VIEW**

A) Flatness of Datum B of .030 [.001]	N/A	CMM MX1269	.008		
B) Perpendicularity of Datum B to Datum C 	E8	CMM MX1269	.009		
C) Flatness of datum A of .030 [.001]	N/A	CMM MX1269	.010		
D) Perpendicularity of Datum A to Datum C 	D8	CMM MX1269	.036		
E) 9X Ø 6.338 – 6.350 marked "D1", "D2" & "D3"	E7 E6 E3	CMM MX1269	6.339 – 6.350		
F) True position of "D3" holes 2X 	E3	CMM MX1269	.044 & .065 <hr/> .029		
F) True position of "D2" holes 2X 	E6	CMM MX1269	.023 & .043 <hr/> .005		
F) Locations of "D1" holes 444.50 [17.500]	E7	CMM MX1269	444.510		

STAMP 	INSPECTED BY THOMAS G COOK	DATE 11/13/07	PAGE 1 OF 2	QTY ACC 1	QTY REJ 0
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Inspection Origin		Vendor (Sub-Tier Source) Identification		Customer Identification		
<input type="checkbox"/> Receiving <input type="checkbox"/> In-Process <input checked="" type="checkbox"/> Final <input type="checkbox"/> Rework/Repair <input type="checkbox"/> First Article		Vendor Name N/A		Part No. L1430401-100400	REV 6	P.O. Number 16185
		Date Rec'd N/A	P.O. No. N/A	Part Name Undulator Support Girder		
At Oper. 170	Serial Numbers: 19			Customer Name Hi-Tech Manufacturing		
SPECIFICATION	B/P ZONE	INSPECTION METHOD / GAGE NO.	ACTUAL DIMENSION / GAGE VERIFICATION (Range of Readings or Accept Status)	QTY ACC	QTY REJ	

1968.50 [77.500]	E4	CMM MX1269	1684.487	MTX QC 8	
3492.50 [137.500]	E2	CMM MX1269	3492.472	MTX QC 8	
2X 523.6 [20.61]	E1	CMM MX1269	523.562 523.546 523.538	MTX QC 8	
3185.26 [125.404]	D2	CMM MX1269	3185.233	MTX QC 8	
845.29 [33.179]	D6	CMM MX1269	845.276	MTX QC 8	
2X 95.10 [3.744]	D8	CMM MX1269	95.085 95.086	MTX QC 8	

SHEET 2 - SIDE VIEW

A) <input type="checkbox"/> C <input type="checkbox"/> .030 [.0012] 2X Surface "J"	C8	CMM MX1269	.017	MTX QC 8	
B) <input type="checkbox"/> C <input type="checkbox"/> .05 [.002]	C8	CMM MX1269	.021	MTX QC 8	

SHEET 2 - BOTTOM VIEW

A) 2X 749.78 ± .15	C7	CMM MX1269	749.823 749.819	MTX QC 8	
B) 2X 2340.00 ± .15	C5	CMM MX1269	2339.981 2339.988	MTX QC 8	
C) 4X <input type="checkbox"/> .05 [.002] B	B2	CMM MX1269	.004 .010 .005 .003	MTX QC 8	
D) 4X <input type="checkbox"/> .030 [.0012] A	B7	CMM MX1269	.008 .003 .001 .005	MTX QC 8	

SHEET 3 - SECTION B-B

E) <input type="checkbox"/> .07 [.003] C	C2	CMM MX1269	.068	MTX QC 8	
F) 4X 109.47 ± .08	C2	CMM MX1269	109.420 - 109.488	MTX QC 8	

ALL OTHER FEATURES ARE ACCEPTED PER METALEX OPERATOR ACCEPTANCE PROGRAM (OAP) MXW117001 & OPERATOR SIGNOFF OF ROUTER OPERATIONS FOR COMPLIANCE TO ALL DRAWING FEATURES GENERATED WITHIN THAT DEFINED OPERATION.	ROUTER SIGNOFF MX5009	CONFORMS	MTX QC 8	
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STAMP 	INSPECTED BY THOMAS G COOK	DATE 11/13/07	PAGE 2 OF 2	QTY ACC 1	QTY REJ 0
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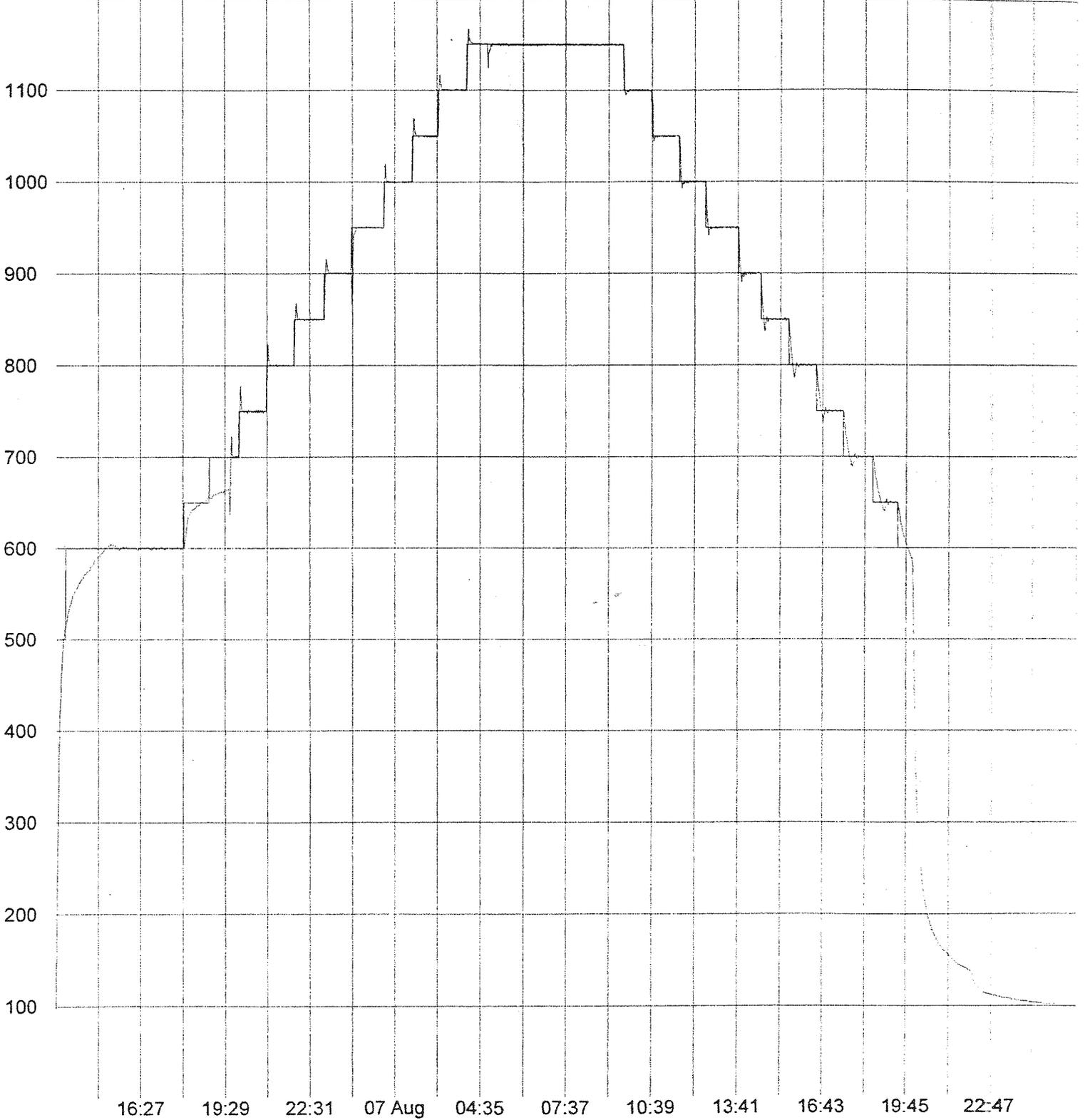
# Datalog Report

Start: 8/6/2007 1:25:00 PM  
End: 8/8/2007 1:30:00 AM  
Sample every 1 minute(s)  
Printed 8/8/2007 6:24:53 AM

Customer: METALEX STRESS RELIEVE  
Part#: L1430401-100400 Rev 05V  
S/N#: 7A-08198-17, 18, 19, 20  
PO#: 72325  
CST Order #: 97220

CB 512 - 0 - TEMP ACTUAL [00]

CB 512 - 1 - TEMP SET [01]



08-09-07 A07:50 OUT



Metalex Manufacturing Inc.  
 5750 Cornell Road - Cincinnati, OH 45242  
 Phone (513) 489-0507 - Fax (513) 489-1020  
 EMAIL: metalex@metalexmfmg.com



## CERTIFICATE OF CONFORMANCE

Date:	<u>11/19/2007</u>	Metalex Job#	<u>2007-7558</u>
Customer:	<u>Hi Tech Manufacturing, Inc.</u>	Purchase Order #	<u>16185</u>
	<u>4637 N. 25<sup>th</sup> Ave.</u>	MX Packing List #	<u>41402</u>
	<u>Schiller Park, IL 60176</u>		
Attention:	<u>Simon Sorsher</u>		

Metalex certifies that all material, processes, procedures, and dimensions are as called for on the purchase order, drawings, and/or amendments supplied by you.  
 All information concerning this part or parts, units and/or assemblies are on file at Metalex Manufacturing, Inc.

ITEM	QTY	PART NUMBER	REV	PART NAME	ID # *
001	4	L1430401-100400	6	Support Girder	See Below

\*IDENTIFICATION NUMBER INCLUDES SERIAL #, HEAT #, AND/OR LOT #.

COMMENTS: "FIRST ARTICLE" submitted on Metalex Shipper # 408586, dated 08/13/07 (S/N: 7A-08198-01).

Applicable serial numbers of this shipment are 7A-08198-16 thru 7A-08198-19.

Some internal documents in this quality package may contain documents certifying to revision level "5" or "5V". Metalex certifies these documents and processes conform to the rev 6 revision level and the parts conform to revision level "6".

Metalex is in compliance with Statement of Worksopce Document No. L143-00093, Revision New, dated 12/12/06.

Manufactured from Metalex purchased material. Reference heat numbers: T7257, T7232, T7130, T7141, U9728, 0129862, X25899, J62810, JF6843, J70358, and 478765.

  
 \_\_\_\_\_  
 Metalex Representative Signature

Thomas Clark  
 \_\_\_\_\_  
 Print Name

11/19/07  
 \_\_\_\_\_  
 Date

Metalex  
Manufacturing  
Inc.



# Metalex

Certified ISO 9001 Quality Management  
Veteran Owned Business 30 Plus Years

#1-- INSIDE PKG - Cust Copy

Packing List# 41402 Rel# 5 PAGE 1  
Metalex Job# 2007-7558

Ship To: HI-TECH MANUFACTURING, INC  
4637 N. 25TH AVE  
SCHILLER PARK IL 60176

Date: 11/19/07  
Ship Via:  
PTA#

(prepaid shipments only)

Attn:  
Customer PO: 16185

BOL/Air Bill#  
Prepaid: Collect: XXXXXXXX  
Weight: Ctns: Zone:  
Dimensions:

P.O. Item No.	Qty Ordered	Qty Shipped	Qty Back Ordered	Description
001	33	4	19	ANL PART L1430401-100400 REV. 6 S/N(S): 7A-08198-16 THRU 7A-08198-19  -CERTIFICATE OF CONFORMANCE, INSPECTION DATA, AND CERTIFICATIONS ENCLOSED.

Received By:

Printed Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_



**Material Safety Data Sheet**

**Z-Maxx Lube – Heavy Duty Grease**

**SECTION 1**

Technical Phone: 651-784-1250      Date Prepared 6 July 2004      Rev A  
MSDS# 4-4-3-12-1-180

**SECTION 2 - INGREDIENTS**

Complex Mixture – Petroleum Hydrocarbons Plus Additives. This material is not known to contain greater than 0.1% of any carcinogen required to be listed under the OSHA Hazard Communication Standard (29CFR 1910.1200).

This product is considered non-hazardous when handled properly and used for intended purpose.

\*This product does not contain any chemical subject to the reporting requirements of the Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III, Section 313 and 40 CFR Part 372.

**SECTION 3 – PHYSICAL DATA**

Appearance and Odor: Amber grease, mild mineral odor  
Boiling Point: N/A  
Specific Gravity: .945  
Vapor Pressure (mm Hg): N/A  
Vapor Density (air = 1): N/A  
Water Solubility: Nil

**SECTION 4 – FIRE AND EXPLOSION DATA**

**Flash Point**      **Method used**      **LEL%**      **UEL%**  
>200°C (392°F)      Cleveland open cup      Unknown      Unknown

**Extinguisher Media:** CO<sub>2</sub> Dry chemical, Foam or Sand/Earth  
**Fire Fighting:** NIOSH/MSHA approved, self-contained, pressure demand respirator recommended; water may spread fire.  
**Fire and Explosion Hazards:** Containers not on fire may be cooled with water.

**SECTION 5 – REACTIVITY DATA**

**Material is:** Stable  
**Hazardous polymerization:** Will not occur.  
**Conditions to avoid:** Strong acids and direct open flames.  
**Incompatibility:** Excessive heat. Avoid conditions that could generate an oil mist.  
**Hazardous decomposition product:** Oxides of Carbon, Sulphur, Nitrogen

**SECTION 6 – HEALTH HAZARDS**

**Acute:** Unknown.  
**Chronic:** May cause eye or skin irritation.  
**Signs and symptoms of exposure:** Eye, skin irritation.  
**Medical conditions generally aggravated by exposure:** Unknown  
**Carcinogenic status:** OSHA: N/A      I.A.R.C.: N/A      N.T.P.: N/A

**Inhalation:** Emergency and first aid procedures:  
Move to fresh air.

**Eyes:** Flush with water for 15 minutes, if film or irritation persists, seek medical attention.

**Skin:** Wipe off excess and wash with soap and water.

**Ingestion:** Do not induce vomiting. Consult physician.

**SECTION 7 – SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES**

**Handling and storage:** Store in a dry, cool environment.

**Other precautions:** Keep away from open flames. Scoop up and place in metal container. Use inert absorbent to clean residue and place in metal container. U.S. Coast Guard 1-800-424-8802.

**Spill or release:** Dispose of in accordance with all applicable federal, state and local regulations.

**Disposal methods:** Dispose of in accordance with all applicable federal, state and local regulations.

**Emergency Phone:** Chemtrec 1-800-424-9300

**SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Respiratory protection:** Not required at normal use temperatures.  
**Ventilation Procedures:** Local exhaust; recommended to maintain oil mist below TLV limit; Mechanical; to maintain below TLV limits. Special: N/A      Other: N/A  
**Protective gloves:** Oil resistant gloves.  
**Eye protection:** Safety glasses (goggles).  
**Other protective equipment:** N/A  
**Work/hygiene practices:** Practice good housekeeping.  
N/A = Not Applicable

(May be used to comply with OSHA's Hazard Communications Standard, 29CFR 1910.1200. Standard must be consulted for specific requirements.)

**NORTHERN TECHNOLOGIES  
INTERNATIONAL CORPORATION**

6680 North Highway 49 \* Lino Lakes MN 55014  
Toll Free: 800-328-2433 \* Phone: 651-784-1250 \* Fax: 651-784-2902  
URL: [www.ntic.com](http://www.ntic.com) \* American Stock Exchange Symbol: NTII

BLUE 1 of 1

E.360

**Keeler & Long**Keeler & Long/PPG  
856 Echo Lake Road  
Watertown, CT  
1-800-238-8596**PPG** PPG High Performance Coatings

## Product Data Sheet

**Kolor-Poxy™ Enamel**  
**KLJ Series**

## Product Information

**Product Code:** KLJ1XXXX Part A  
KLJ2XXXX Part A  
Where XXXX is a color designation.  
KLJ1B Curing Agent Part B**Product:** Polyamide Epoxy**Suggested Use:** A two component, polyamide epoxy enamel formulated to provide excellent chemical abrasion and direct impact resistance for interior exposures.

Use as a topcoat for interior steel, concrete and masonry surfaces, especially in alkaline environments.

**Not Recommended:** Exterior exposures; areas subject to splash and spillage of strong acids; immersion in strong acids.

## Product Description

**Color:** A full range of colors is available**Gloss 60°:** KLJ1XXXX 85 minimum  
KLJ2XXXX 35 - 65**VOC:** 3.47 lbs./gal. (416 g/L) mixed, unthinned**Method:** Calculated**In Service Heat****Limitations:** 250° F (121° C) dry heat**Weight/Gallon:** 10.2 ± 0.5 lbs./gal. \***Flash Point:** Part A 82°F (27.7°C)  
Part B 104°F (40°C)**Package:** Part A is available in one gallon containers filled at 0.80 gallons (3.03 liters) and five gallon containers filled at 4.00 gallons (15.1 liters).

KLJ1B Part B is available in quart containers filled at 25.6 fluid ounces (767 mL) and full filled gallon containers.

**Percent Solids by Volume:** 53.9 ± 3.0% \***Percent Solids by Weight:** 66.1 ± 3.0% \*

## Drying Schedule

**Air Dry @ 77°F (25° C) ASTM D5895****Dry to Touch:** 4 hours**Dry to Handle:** 8 hours

## Drying Schedule (continued)

**Dry to Recoat:** 24 hours

Drying times listed may vary depending on temperature, humidity and air movement.

## Application Data

**Substrate:** Metal or masonry**Substrate Preparation:** The service life of the coating is directly related to the surface preparation. The surface to be coated must be dimensionally stable, properly prepared and primed, dry, clean and free of all contamination including oil, dirt, grease and rust.**Basecoats:** Kolorane™ Aluminum Primer, Kolorane™ Zinc Rich Primer, Kolor-Poxy™ Primers and Enamels, Kolor-Poxy™ Surfacer**Application Method:** Apply by spray, brush or roller application.**Air Spray:** DeVilbiss MBC gun, 704 or 777 air cap with "E" or "F" tip and needle or equivalent equipment. Atomization Pressure: 30 - 60 psi.**Airless Spray:** Equipment capable of maintaining a minimum of 2500 psi at the tip without surge. 0.011" (0.279 mm) to 0.017" (0.432 mm) orifice.**Brush:** Use a high quality natural bristle brush.**Roller:** Use a 3/8" nap polyester nylon roller cover with a solvent resistant core.

Refer to Application Guide APG-3 for additional information.

**Parts Base by Volume:** 4 parts "A"**Parts Catalyst by Volume:** 1 part KLJ1B Part B**Digestion Time:** 1 hour @ 77°F (25°C)**Pot Life @ 72°F:** 8 hours @ 77°F (25°C)**Thinner Code & Percent:** Thin up to 5% by volume with KL3700 as needed for application.**Coverage Sq. Ft./Gal. @ 2.5 mils:** 346 sq. ft./gal. \***Wet Film Per Coat:** 4.6 to 7.4 mils\***Dry Film Per Coat:** 2.5 to 4.0 mils

The statement and methods presented in this bulletin are based upon the best available data and practices known to PPG Architectural Finishes, Inc. at the present time. They are not representations or warranties of performance, results or comprehensiveness of such data. Since PPG Architectural Finishes, Inc. is constantly improving its coatings and paint formulas, future technical data may vary somewhat from what was available when this bulletin was printed. Contact your PPG Sales Representative, Distributor of Pittsburgh Paints or the Pittsburgh Paints Information Center for the most up-to-date information. E.360 Mar., 2004

BLUE 1d2

E.360

**Keeler Long**

PPG High Performance Coatings

Keeler & Long/PPG  
856 Echo Lake Road  
Watertown, CT  
1-800-238-8596

## Product Data Sheet

**Kolor-Poxy™ Enamel**  
**KLJ Series**

## Application Data (continued)

**Mixing Instructions:** Thoroughly mix Part A before blending. Add KLJ1B Part B to Part A. Mix until uniform. Allow to digest 1 hour before use.**Clean Up Solvent:** KL3700

## Additional Information

Apply only when air, product and surface temperatures are at least 50°F (10°C) and the surface temperature is at least 5°F (3°C) above the dew point. Curing is retarded below 60°F (15.6°C).

Store materials at temperatures between 50°F (10°C) and 95°F (35°C).

Permissible substrate temperature during application is 50°F (10°C) and 120°F (48.9°C).

\*Values are calculated using KLJ16002 White, Part A mixed 4:1 by volume with KLJ1B, Curing Agent, Part B. Values will vary with color.

Read all label and Material Safety Data Sheet (MSDS) information prior to use. MSDS are available by calling 1-800-238-8596.

Not intended for residential use.

Spray equipment must be handled with due care and in accordance with manufacturer's recommendation.

High-pressure injection of coatings into the skin by airless equipment may cause serious injury, requiring immediate medical attention at a hospital.

**WARNING!** If you scrape, sand, or remove old paint, you may release lead dust or fumes. LEAD IS TOXIC. EXPOSURE TO LEAD DUST OR FUMES CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a properly fitted NIOSH-approved respirator and prevent skin contact to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the USEPA National Lead Information Hotline at 1-800-424-LEAD or log on to [www.epa.gov/lead](http://www.epa.gov/lead). In Canada contact a regional Health Canada office. Follow these instructions to control exposure to other hazardous substances that may be released during surface preparation.

The statement and methods presented in this bulletin are based upon the best available data and practices known to PPG Architectural Finishes, Inc. at the present time. They are not representations or warranties of performance, results or comprehensiveness of such data. Since PPG Architectural Finishes, Inc. is constantly improving its coatings and paint formulas, future technical data may vary somewhat from what was available when this bulletin was printed. Contact your PPG Sales Representative, Distributor of Pittsburgh Paints or the Pittsburgh Paints Information Center for the most up-to-date information. E.360 May, 2004

Primer 1 of 2

E.140

**Keeler Long**Keeler & Long/PPG  
856 Echo Lake Road  
Watertown, CT 06795  
1-800-238-8596 PPG High Performance Coatings

## Product Data Sheet

**Kolor-Poxy™ Primer**  
**KL3200 Series****Product Information****Product Code:** KL3200 White Part A

KL32004279 Red Oxide Part A

KL3200B Curing Agent Part B

**Product Type:** Polyamide-Epoxy**Suggested Use:** Use where a high build primer/topcoat is required that provides abrasion, impact and chemical resistance when applied to steel and concrete surfaces exposed to a wide range of conditions. May be used in Nuclear Coating Service areas Level II, balance of plant, and certain Level III areas.**Not****Recommended:** Immersion in strong solvents.**Compatible Topcoats:** Acrythane™ Enamels, Hydro-Poxy™ Enamels, Kolorane™ Enamels, Kolor-Poxy™ Hi-Build Enamels, Kolor-Poxy™ Primers and Enamels, Kolor-Sil™ Enamels, Poly-Silicone Enamels**Product Description****Color:** White and light colors, Red Oxide**Gloss 60°:** Flat**VOC:** 2.50 lbs./gal. (302 g/L) \***Method:** Calculated (mixed)**Weight/Gallon:** 13.6 +/- 0.5 lbs./gal. (mixed) \***In Service Heat Limitations:** 250°F (121°C) maximum, dry heat.

150°F (66°C) maximum, immersion.

**Flash Point:** KL3200 Part A 78°F (26°C)

KL3200B Part B 123°F (51°C)

**Package:** KL3200 Part A is available in short filled gallon and five gallon containers.  
KL3200B Part B is available in short filled quart and full filled gallon containers.**Percent Solids by****Volume:** 66.2% +/- 3.0% (mixed) \***Percent Solids by****Weight:** 81.5% +/- 3.0% (mixed) \***Application Data****Substrate:** Ferrous metal or masonry**Substrate Preparation:** The service life of the coating is directly related to the surface preparation. The surface to be coated must be properly prepared, dry, clean and free of contamination.

Minimum surface preparation is SSPC-SP6 (NACE #3) Commercial Blast Cleaning for ferrous substrates.

Brush blasting or acid etching is required for masonry.

Stabilizers on the surface of hot dipped galvanized steel must be removed by either brush blasting, sanding or chemical treatment.

Near White Metal Blast Cleaning per SSPC-SP10 (NACE #2) is minimum surface preparation for immersion service.

**Basecoat:** Self priming when used on recommended substrates.**Application Method:** Apply by spray, brush or roller application.

Air Spray: DeVilbiss MBC gun, 704 or 777 air cap with "E" tip and needle or equivalent equipment. Atomizing pressure 30-60 psi.

Airless Spray: Equipment capable of maintaining a minimum of 2500 psi at the tip without surge. 0.015" (0.38 mm) to 0.019" (0.48 mm) orifice.

Brush: Use a high quality natural bristle brush.

Roller: Use a 3/8" nap polyester-nylon roller cover with a solvent resistant core.

Refer to Application Guide AGP-3 for additional information.

**Parts Base****by Volume:** 4 parts KL3200 Part A**Parts Catalyst****by Volume:** 1 part KL3200B Part B**Thinner Code & Percent:** Thin up to 5% by volume with KL3700 as needed for application.

The statement and methods presented in this bulletin are based upon the best available data and practices known to PPG/Keeler & Long at the present time. They are not representations or warranties of performance, results or comprehensiveness of such data. Since PPG/Keeler & Long is constantly improving its coatings and paint formulas, future technical data may vary somewhat from what was available when this bulletin was printed. Contact your PPG/Keeler & Long Sales Representative for the most up-to-date information.

E.140 March, 2005

Primer 202

E.140

## Product Data Sheet

**Keeler Long**

Keeler & Long/PPG  
856 Echo Lake Road  
Watertown, CT 06795  
1-800-238-8596

**Kolor-Poxy™ Primer**  
**KL3200 Series**

**PPG** PPG High Performance Coatings

**Application Data (continued)**

**Digestion Time:** 45 minutes  
**Pot Life:** 8 hours at 77°F (25°C).  
**Wet Film Per Coat:** 3.8 to 9.1 mils \*  
**Dry Film Per Coat:** 2.5 to 6.0 mils  
**Coverage Sq. Ft./Gal. @ 1 mil:** 1062 sq. ft./gal \*  
**Mixing Instructions:** Under mechanical agitation, mix Part A thoroughly. Add KL3200B Part B and mix until uniform. Allow to digest for 45 minutes before use.  
**Clean Up Solvent:** KL3700

**Drying Schedule**

**Drying Schedule:** Per ASTM D5895, air dry @ 77°F (25°C) and 50% relative humidity  
**Dry to Touch:** 2.5 hours  
**Dry Through:** 6 hours  
**Dry to Recoat:** 24 hours  
**Immersion Service:** 10 days

Drying time may vary depending on temperature, humidity and air movement.

**Additional Information**

Apply only when air, product and surface temperatures are above 50°F (10°C) and surface temperature is at least 5°F (3°C) above the dew point. Curing is retarded below 60°F (15.5°C) without the addition of accelerator.

Permissible substrate temperature during application is 50°F (10°C) to 120°F (49°C).

Store materials at temperatures between 50°F (10°C) and 95°F (35°C).

Read all label and Material Safety Data Sheet (MSDS) information prior to use. MSDS are available by calling 1-800-238-8596.

\*Values are calculated for KL3200 White mixed with KL3200B. Values will vary with color.

Spray equipment must be handled with due care and in accordance with manufacturer's recommendation.

High-pressure injection of coatings into the skin by airless equipment may cause serious injury, requiring immediate medical attention at a hospital.

Not intended for residential use.

**WARNING!** If you scrape, sand, or remove old paint, you may release lead dust or fumes. LEAD IS TOXIC, EXPOSURE TO LEAD DUST OR FUMES CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a properly fitted NIOSH-approved respirator and prevent skin contact to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the USEPA National Lead Information Hotline at 1-800-424-LEAD or log on to [www.epa.gov/lead](http://www.epa.gov/lead). In Canada contact a regional Health Canada office. Follow these instructions to control exposure to other hazardous substances that may be release during surface preparation.

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E.140 March, 2005



**Bodycote Taussig Inc.**  
Metallurgical & Materials Engineers



**AWS WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

WELDER OR WELDING OPERATOR'S NAME: Tadeusz Sutowski I.D. #39  
 WELDING PROCESS: GMAW MANUAL SEMI-AUTO XXX MACHINE  
 POSITION: 4G - Overhead PROGRESSION: N/A  
 WPS NO.: AWS Prequalified TYPE OF JOINT TESTED: Single V Groove  
 BASE METAL SPECIFICATION: ASTM A36, Qualifies All Groups  
 PIPE DIAMETER: N/A JOINT THICKNESS: 3/8"  
 QUALIFICATION RANGES: 3/4" Max. Groove/Unlimited Fillet, Flat, Horiz., Overhead

**FILLER METAL**

SPECIFICATION NO.: AWS A5.18 CLASSIFICATION: ER80S-D2 F NO.: N/A  
 DIAMETER: .035" FLUX/SHIELDING GAS: AR/O<sub>2</sub> - 92/8 FLOW RATE: 25 cfh  
 BACKING OR BACK GOUGING METHOD: None

**VISUAL INSPECTION RESULTS**

APPEARANCE: Satisfactory UNDERCUT: None POROSITY: None

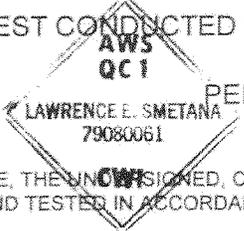
**GUIDED BEND TEST RESULTS**

TYPE	RESULTS	TYPE	RESULTS
FACE	PASS	ROOT	PASS

**FILLET TEST RESULTS**

SIZE: N/A FRACTURE TEST: N/A MACROETCH: N/A  
 LOCATION, NATURE, SIZE OF DISCONTINUITIES: N/A  
 NOTED: \_\_\_\_\_

TEST CONDUCTED BY: BODYCOTE TAUSSIG, INC. LABORATORY NO.: 134477



PER: *Lawrence E. Smetana* TEST DATE: March 20, 1997  
**Lawrence E. Smetana, CWI**

WE, THE UNDERSIGNED, CERTIFY THAT THIS RECORD IS CORRECT AND THAT THE WELDS WERE PREPARED AND TESTED IN ACCORDANCE WITH AWS D1.1- 1995

MANUFACTURER OR CONTRACTOR: Hi-Tech Manufacturing  
 AUTHORIZED BY/DATE: \_\_\_\_\_

THIS CERTIFICATE OR REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF BODYCOTE TAUSSIG, INC.

Where quality is an ongoing commitment



SHERWIN-WILLIAMS

SHERWIN-WILLIAMS  
3143 E KEMPER RD  
SHARONVILLE OH 45241

Visit [www.sherwin-williams.com](http://www.sherwin-williams.com)  
Store 1246 ANDREW  
(513) 771-8572  
Fax - (513) 771-8590

PACKING  
SLIP  
No. 5888-8

ACCOUNT: 6538-0111-8 JOB 01 METALEX MFG

PO: 7126/JG

METALEX MFG  
5750 CORNELL RD  
CINCINNATI OH 45242 2010

DATE: 06/20/07  
TIME: 8:30 AM

E23/13651 11

(513) 489-0507

SALES NUMBER	SIZE	PRODUCT	DESCRIPTION	QUANTITY
630-4240	GALLON	B67H5	RCT EPX PR BUFF A	5
630-4265	GALLON	B67V5	RCT EPX PR HARD B	5
TOTAL LINES				2
				10

METALEX
Q. A. DEPT
ACCEPTED
DATE 6/29/07
BY TC

Job 7558

<sup>MYST</sup>  
**RECEIVED**

JUN 20 2007

METALEX MFG.  
BY CO

MERCHANDISE RECEIVED IN GOOD ORDER BY:

BILLY \_\_\_\_\_ DATE (CENTRALIZED INVOICE)

The Sherwin-Williams Co.  
3143 EAST KEMPER RD  
CINCINNATI, OHIO 45241

METALEX  
Q. A. DEPT  
ACCEPTED  
DATE 6/29/07  
BY TC

MTX  
QC 28

Job 7558

**CERTIFICATE OF COMPLIANCE  
STATEMENT OF QUALITY**

**METALEX**

PURCHASE ORDER 71261-JG  
DATE OF MFG  
SHELF LIFE  
PART

QUANTITY  
BATCH

IT IS HEREBY CERTIFIED THAT ALL MATERIAL USED IN THE  
MANUFACTURE OF PARTS IN THE QUALITY CALLED FOR ON  
THE SUBJECT PURCHASE ORDER, CONFORM TO THE MATERIALS  
AND/OR MANUFACTURING SPECIFICATIONS INDICATED IN  
DRAWINGS OF SPECIFICATIONS AS CALLED FOR ON SAID  
PURCHASE ORDER.

THE SHERWIN-WILLIAMS CO  
3143 EAST KEMPER RD  
CINCINNATI OHIO 45241

AUTHORIZED SIGNATURE  
CUSTOMER SERVICE ADM

Shelf life 36 months  
OX26965  
batch date OX27165 B67NS  
OX275C B67HS  
OX2005Z



SHERWIN-WILLIAMS.

SHERWIN-WILLIAMS  
3143 E KEMPER RD  
SHARONVILLE OH 45241

Visit [www.sherwin-williams.com](http://www.sherwin-williams.com)  
Store 1246 KEVIN  
(513) 771-8572  
Fax - (513) 771-8590

PACKING  
SLIP  
No. 7233-5

ACCOUNT: 6538-0111-8 JOB 01 METALEX MFG

PO: 71829-BL-755B  
ORDER: OE0025007Q1246  
DATE: 07/16/07  
TIME: 8:08 AM

METALEX MFG  
5750 CORNELL RD  
CINCINNATI OH 45242 2010

METALEX  
Q. A. DEPT  
ACCEPTED  
DATE 7/16/07  
BY TC

E16/13651 11

SALES NUMBER	SIZE	PRODUCT	DESCRIPTION	QUANTITY
6405-18999	GALLON	B62WZ111	TC HS EX WHT A	5
Color: SW4026 SLATE GRAY				
<u>BAC Blend-a-Color</u> OZ    32    64    128				
B1	Black	2	16 1 1	
G2	New Green	-	3 - -	
Y3	Deep Gold	-	2 - -	
Sher-Color Formula				
TOTAL LINES				1
				5

OE1637C

RECEIVED  
JUL 16 2007  
METALEX MFG.  
BY CD

MERCHANDISE RECEIVED IN GOOD ORDER BY:

BILLY BLANTON

DATE (CENTRALIZED INVOICE)

Metalex Manufacturing  
L1430401-100400 Girder Support  
Hi-Tech Purchase Order No. 16185

## Visual Weld Inspection Report

Metalex Job: 2007-7558                      Serial Number: 7A-08198- (19 )

Welding and Visual Welding Inspection Requirements:

Per SOW L143-00093 Section 4.1.4.2: For all welded parts, the welding practice shall conform to the Structural Welding Code, ANSI/AWS D1.1-D1.1M:2004..

Per SOW L143-00093 Section 4.1.4.2.2: All structural welds shall be visually inspected as defined in section 6.9 of the Structural Welding Code. The contractor shall certify that the welds were inspected and were acceptable.

Part Print L1430401-100400 sheet 1 of 3.

Fabrication Stage#1

Features: W1 and W2

Acceptable  (Y/N) CONFIRMS Initial: B.H.  Date: 7/23/07

Fabrication Stage#2

Features: W3, W4 and W5

Acceptable  (Y/N) CONFIRMS Initial: B.H.  Date: 7/25/07

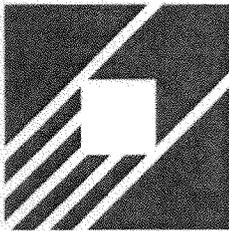
Fabrication Stage#3

Features: W6, W7, W8, W9, W10, W11 and W12

Acceptable  (Y/N) CONFIRMS Initial: B.H.  Date: 8/3/07

Verification of completion of weld visual inspection:

Completed By:   Date: 8/3/07



## Hi-Tech Manufacturing, Inc.

CNC Milling & Turning  
Prototypes & Special Machinery  
General Machining & Heliarc Welding Facilities  
ISO 9002 Registered  
4637 N. 25th Ave., Schiller Park, IL 60176  
Phone (847) 678-1616, Fax (847) 678-1617

### Visual Weld Inspection Report.

Per Statement of Work # L143-00093 Section 4.1.4.2, Motion System Assembly ## L1430401-100396 and L1430802-200000, contract # 7A-08189, for all welded parts, the welding practice shall conform to the Structural Welding Code, ANSI/AWS D1.1-D1.1 M:2004.

Part Print L1430802-200030 sheet 1 of 2.

Quantity: 76 pcs

Fabrication Stage #1

Features: # 1, 4, 2, 3

Acceptable (Y/N) Y Initials: S.S. Date: 11-16-07

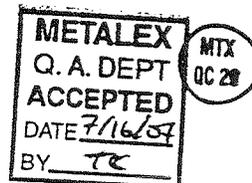
Verification of completion of weld visual inspection:

Completed by: *Samir Sengupta* Date: 11-17-07

Metalex PO# 7/829-BL-7558

# Certificate of Conformance

Customer: Metalex Mfg. Inc.  
Address: 5750 Cornell Rd.  
Cincinnati, Oh: 45242  
Attention: Quality Engineering Dept.



<u>Item</u>	<u>Qty.</u>	<u>Part Number</u>	<u>Rev. Part Name</u>	<u>Job #</u>
<u>1</u>	<u>5</u>	<u>B62WZ111</u>	<u>BATCH# 061637L</u> <u>TILE CIAD H.S. SW4026</u> <u>Shelf life 36 months</u>	<u>7558</u>

Sherwin Williams

Supplier Name

certifies that all materials, processes, etc. furnished to

Metalex, for the purchase order number stated above, comply with all conditions stated in the P.O. for the items shown.

Signed/Dated:

Supplier Quality Rep.

7.16-07

FROM : METALEX PURCHASING

PHONE NO. : 513-489 8484

Jun. 30 2006 10:07AM P1

Metalex PO# 70722-JE-7558

ATTN: JAMES GRIFFIN

# Certificate of Conformance

Hi-Tech Job# 7558

METALEX
Q. A. DEPT
ACCEPTED
DATE: 6/5/07
BY: KKB

MTX QC 19

Customer: Metalex Mfg. Inc.  
 Address: 5750 Cornell Rd.  
 Cincinnati, Oh. 45242  
 Attention: Quality Engineering Dept.

KKB 6/5/07

MTX QC 19

Shelf life ID# 2835 thru 2839

Item	Qty.	Part Number	Rev. Part Name	Job #	SHELF LIFE
1.	5	B62WZ111	TILECLAD H.S. EW MC-56		36 MONTH UN OPEN
2.	5	B60VZ70	TILECLAD H.S. HARDNER		36 MONTH UN OP
3.	1	R7K54	SI REDUCER		3 YEARS

L Shelf life ID# 2834

KKB 6/5/07

MTX QC 19

mx Shelf Life ID# 2841 thru 2844

KKB 6/5/07

MTX QC 19

SHERWIN WILLIAMS certifies that all materials, processes, etc furnished to

Metalex, for the purchase order number stated above, comply with all conditions stated in the P.O. for the items shown.

Signed/Dated:

Vendor Quality Rep.

**From:** Simon Sorsher  
**Date:** 1/17/2008 9:04:40 AM  
**To:** Simon Sorsher  
**Subject:** Fw: Re: FW: Argonne Exploded View

-----Original Message-----

**From:** Emil Trakhtenberg  
**Date:** 1/17/2008 8:52:44 AM  
**To:** Simon Sorsher; Marion M. White  
**Subject:** Re: FW: Argonne Exploded View

Simon,  
Design of the crate for the SMS pedestal is approved.  
Thank you,  
Emil