



4601 SOUTHWEST HWY., OAK LAWN, ILLINOIS 60453  
 (708) 425-9080  
 FAX (708) 425-2612

**CERTIFICATE OF CONFORMANCE**

**CUSTOMER:** Jefferson Science Associates, LLC  
**P.O. #:** 15-P0128  
**DESCRIPTION:** Custom Vacuum Vessels  
**QTY.:** 2  
**MTM PROJECT #:** 02351

The above item(s) has/have been manufactured in conformance with all purchase order requirements. The measuring equipment used in determining compliance to applicable specification or for purpose of calibration has been certified to its accuracy and is traceable to the National Institute of Standards and Technology.

We certify that the articles and/or services listed above have been inspected and tested, and that records are available from our files that support the following (as marked, if not applicable, mark "N/A").

- 2 Quantities
- X Cleaning Requirements
- X Material Type/Traceability
- X Dimensions
- X Testing
- X Finishing Requirements
- X Packaging Requirements
- X Marking Requirements/ID Requirements
- N/A C of C and/or test results from sub suppliers
- X Calculations

Certified by:

Edward C. Bonnema, PE IL License # 062.044864

Date:

3/27/2015



4601 SOUTHWEST HWY., OAK LAWN, ILLINOIS 60453  
(708) 425-9080  
FAX (708) 425-2612

## Test Reports

1. Assembled Vacuum Vessels Pressure Test Report
2. Preliminary Leak Test using flat plate used in Pressure Test
3. Final Leak Test using JSA supplied Window.



# Meyer Tool & Mfg., Inc.

4601 SOUTHWEST HWY., OAK LAWN, ILLINOIS 60453

708 / 425-9080

FAX 708 / 425-2612

## PNEUMATIC PRESSURE TEST REPORT

MTM JOB NO.:	2351
CUSTOMER:	JSA, LLC
MTM DRAWING/ASSEMBLY/ITEM NO.:	2351-01
COMPONENT SERIAL NUMBER :	N/A
COMPONENT DESCRIPTION:	VACUUM VESSEL
PRESSURE GAUGE(S) TAG NO.:	PG-21
PRESSURE GAUGE(S) RANGE:	0-30
TEST PRESSURE:	15 PSI
GAS USED:	Shop Air
PROCEDURE USED:	<input checked="" type="checkbox"/> MTM-MP-1105 <input type="checkbox"/> OTHER Held pressure for
RESULTS/COMMENTS:	5 minutes @ 15psi with No drop in pressure. DONE w/ BLANK PLATE
OPERATOR:	M Reinheimer DATE: 3/7/15
	<input checked="" type="checkbox"/> ACCEPT <input type="checkbox"/> REJECT



Meyer Tool & Manufacturing, Inc.  
4601 SOUTHWEST HWY.  
OAK LAWN, ILLINOIS 60453  
708/425-9080  
FAX: 708/425-261

### HELIUM MASS SPECTROMETER LEAK DETECTION TEST REPORT

MTM JOB NO.:	2351	
CUSTOMER:	JSA, LLC	
MTM DRAWING/ASSEMBLY/ITEM NO.:	2351-01	
COMPONENT SERIAL NUMBER:	N/A	
COMPONENT DESCRIPTION:	VACUUM VESSEL	
MSLD TAG NO.:	182 T	
CALIBRATED LEAK TAG NO.:	CL-9	
SENSITIVITY ( <input checked="" type="checkbox"/> MSLD <input type="checkbox"/> SYSTEM):	INITIAL $1.0 \times 10^{-10}$	FINAL $1.0 \times 10^{-10}$
TEST PERFORMED ON SCALE:	-10	
INITIAL READING:	w/o Bag $9.2 \times 10^{-9}$	Bag $2.8 \times 10^{-9}$
FINAL READING:	$7.3 \times 10^{-9}$	$2.4 \times 10^{-10}$
LEAK RATE (ATM CC/SEC)		
PROCEDURE USED:	<input checked="" type="checkbox"/> MTM-MP-1110 <input type="checkbox"/> OTHER THIS TEST WAS	
RESULTS/COMMENTS: (NOTE: Record hood test time vs. MSLD reading in this section.)	DONE w/ the flat blank flange. NO LEAKS DETECTED PARTS OK NOTE: THIS WAS AN ADDITIONAL VACUUM TEST DONE IMMEDIATELY AFTER PRESSURE TEST.	
OPERATOR:	Jeff Reinheimer	DATE: 3/7/15
	<input checked="" type="checkbox"/> ACCEPT	<input type="checkbox"/> REJECT



Meyer Tool & Manufacturing, Inc.

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### HELIUM MASS SPECTROMETER LEAK DETECTION TEST REPORT

MTM JOB NO.:	2351	
CUSTOMER:	JSA, LLC	
MTM DRAWING/ASSEMBLY/ITEM NO.:	2351-01	
COMPONENT SERIAL NUMBER:	N/A	
COMPONENT DESCRIPTION:	VACUUM VESSEL	
MSLD TAG NO.:	182T	
CALIBRATED LEAK TAG NO.:	CL-9	
SENSITIVITY ( <input checked="" type="checkbox"/> MSLD <input type="checkbox"/> SYSTEM):	INITIAL $1.0 \times 10^{-10}$	FINAL $1.0 \times 10^{-10}$
TEST PERFORMED ON SCALE:	-10	
INITIAL READING:	w/o Bag $1.2 \times 10^{-9}$	Bag $1.4 \times 10^{-9}$
FINAL READING:	$5.4 \times 10^{-10}$	$6.5 \times 10^{-10}$
LEAK RATE (ATM CC/SEC)		
PROCEDURE USED:	<input checked="" type="checkbox"/> MTM-MP-1110 <input type="checkbox"/> OTHER THIS TEST WAS	
RESULTS/COMMENTS: (NOTE: Record hood test time vs. MSLD reading in this section.)	DONE w/ THE CONCAVE Flange.  NO LEAKS DETECTED PARTS OK <del>ESD</del> THIS WAS FINAL LEAK TEST DONE WITH JSA SUPPLIED WINDOW.	
OPERATOR:	<i>M Reinheimer</i>	DATE: 3/9/15
	<input checked="" type="checkbox"/> ACCEPT	<input type="checkbox"/> REJECT



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**Material CMTRs and COCs.**

---



36502 Van Born Road; Wayne, MI 48184  
Phone 734/729-6110 Fax 734/729-6663

M00560 1 RS  
Heat # AU049

Page 1 of 2

PO # 024909-00

MATERIAL CERTIFICATION

<b>S O L D</b>	MEYER TOOL & MFG. 4601 W SOUTHWEST HWY OAK LAWN, IL 60453	Shipping Information	Material Cert Number
			838159 FE102R0
			Revision Date
			11/11/2014

Item 2 of 2	Part Number: JSA-B11106 05		
Material	ASME SA-105 2013 Edition		
Heat Treat	per Specification		
Destructive Test	per Specification		
Finish	Forge with allowance to finish		
Reference	Part Number: JSA-B11106 05, Job Number: 02351-0001		
Size	OD	ID	Length (inches)
	44.62	39.50	1.50
Surface	Forged	Forged	Forged

Heat Number	# of Pieces	(MILL - EQS-ELLWOOD QUALITY)
AU049	2	MSDS Previously Sent

Note: Additional prefix letter stamped on product with heat number is for our inventory purposes only and not relevant to heat number

**Chemical Composition (Wt. %)**

C	Mn	P	S	Si	Ni	Cr	Mo	Cu	Al	V
0.20	1.28	0.015	0.018	0.22	0.13	0.20	0.04	0.15	0.033	0.005
As	Ca	Cb	H	Pb	Sb	Sn	Ti			
0.005	0.0001	0.003	0.00010	0.0011	<0.001	0.007	0.001			
Cu+Ni+Cr+V+Mo										
0.53										
Cr+Mo										
0.24										
C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15										
0.48										

**P.O.# :** 24909  
**JOB :** 2351 **ENG:** TV  
**ITEM :** 02-05  
 ITEM 01-05 & 10-05 A

**Mechanical Properties:** DWG-06 DWG-15

Pcs	Tensile KSI	Yield <sup>1</sup> KSI	Elongation %	Reduction of Area %	Comments
1	81.10	51.90	33.1	66.9	LONGITUDINAL

<sup>1</sup>(Offset: .2%)

**Brinell Hardness Results:**

Pcs	3000 kgf Load
2	163

Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute.

  
 Quality Assurance Representative



36502 Van Born Road; Wayne, MI 48184  
Phone 734/729-6110 Fax 734/729-6663

MEYER TOOL & MFG

M00560 1 RS  
Heat # AU049

PO # 024909-00

MATERIAL CERTIFICATION

Page 2 of 2

Material Cert Number
838159 FE102R0

Compliance Statements:

We certify that the material listed was not processed with mercury bearing instruments and/or equipment which might cause contamination, nor was mercury handled in the immediate vicinity during the manufacturing process. We also certify that the material was not processed or cleaned with low melting point materials as alloying constituents, i.e. lead, zinc, cadmium, tin, antimony, bismuth, sulfur, or their compounds.

In accordance with the requirements of the Pressure Equipment Directive, all testing, inspection, and documentation is produced in accordance with EN 10204:2004 Type 3.1 and ISO 10474 Type 3.1.B

The products supplied are in compliance with the quantity and quality requirements of the purchase order and specifications noted. The test reports represent the actual attributes of the items furnished and the test results are in full compliance with all applicable specifications and order requirements

P.O.# : 24909

JOB : 2351      ENG: TV

ITEM : 02-05

ITEM 01-05 & 10-05A

Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute.

  
Quality Assurance Representative



# SSAB

1770 Bill Sharp Boulevard, Muscatine, IA 52761-9412

## Test Certificate

Form TCI: Revision 1: Date 31 Oct 2000

Customer:

Customer P.O. No.: 7072215 - 3

Mill Order No.: 41-348583-03

Shipping Manifest: MTT188489

Product Description: ASTM A36(Q8)/A570(1)36/ASME SA36(10A11)

AASHTO M270(01)36

Ship Date: 08 Jan 13  
Cert Date: 08 Jan 13

Cert No: 061366023  
(Page 1 of 1)

Size: 0.375 X 9.6.00 X 240.0 (IN)

Heat Id	Piece Id	Tested Thickness	Tensiles		Charpy Impact Tests								
			Ys (KSI)	UTS (KSI)	Abs. Energy (FTLB)	% Shear	Tsl Tmp	Tsl Dir	Tsl Tmp (OH)	BDWTT %Shr			
A21070	C01	0.371 (DISCRT)	50	73	1	2	3	1	2	3			
B21691	D16	0.371 (DISCRT)	50	66	2	3	1	2	3	1	2	3	

Heat Id	C	Ma	P	S	Si	Tot Al	Cu	Ni	Chemical Analysis				T	B	N	ORGN
									Cr	Mo	Cu	V				
A21070	.18	.55	.014	.005	.05	.022	.32	.17	.09	.04	.001	.006	.006	.0001	.0107	USA
B21691	.04	1.14	.012	.008	.02	.024	.26	.13	.04	.001	.052	.002	.0001	.0077		USA

MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT  
 MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT  
 100% MELTED AND MANUFACTURED IN THE USA.  
 PRODUCTS SHIPPED: C01 PCES: 1, WGT: 2450 B21691 D16 PCES: 2, WGT: 4911

P.O.# : 25056  
 JOB : 2351  
 ITEM : 13-06R  
 10-06  
 01-06

ENG: ECR

RECEIVED  
 FEB 19 2015  
 BY: CHIMO

Cust Part # \_\_\_\_\_  
 WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION  
 B. H. Wales  
 SENIOR METALLURGICAL PRODUCT

**NUCOR**  
**NUCOR CORPORATION**  
**NUCOR STEEL SOUTH CAROLINA**

**Mill Certification**  
**7/10/2014**

MTR #: 0000027833  
 300 Steel Mill Road  
 DARLINGTON, SC 29540  
 (843) 393-5841  
 Fax: (843) 395-8701

Sold To: ALRO STEEL CORP  
 PO BOX 927  
 JACKSON, MI 49204-0927  
 (517) 787-5500

Ship To: ALRO METALS SERVICE CENTER  
 777 INDUSTRIAL DRIVE  
 UNIVERSITY PARK, IL 60466-0000  
 (708) 534-5400

Customer P.O.	UP9734034	Sales Order	205451.1
Product Group	Merchant Bar Quality	Part Number	5350050024010W0
Grade	NUCOR MULTIGRADE	Lot #	DL1410200102
Size	1/2x5" Flat	Heat #	DL14102001
Product	1/2x5" Flat 20' NUCOR MULTIGRADE	B.L. Number	C1-636686
Description	NUCOR MULTIGRADE	Load Number	C1-316066
Customer Spec		Customer Part #	06510520

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 4/8/2014 Melt Date: 4/2/2014 Qty Shipped LBS: 5,104 Qty Shipped Pcs: 30

Melt Date: 4/2/2014

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	Sn
0.16%	0.72%	0.012%	0.016%	0.18%	0.32%	0.10%	0.15%	0.020%	0.0510%	0.002%	0.012%
Ti	CE4020										
0.001%	0.35%										

CE4020: C. E. CSA G4020, AASHTO M270

Roll Date: 4/8/2014

Yield 1: 62,000psi (427MPa) Tensile 1: 80,000psi (552MPa) Elongation: 24% in 8"(% in 203.3mm)  
 Yield 2: 62,000psi (427MPa) Tensile 2: 80,000psi (552MPa) Elongation 23% in 8"(% in 203.3mm)

Specification Comments: NUCOR MULTIGRADE MEETS THE REQUIREMENTS OF: ASTM A36/A36M-08, A529/529M-05(2009) GR50(345), A572/572M-07 GR50(345), A709/709M-10 GR36(250) & GR50(345), CSA G40 21-04 GR44W(300W) & GR50W(350W) AASHTO M270/M270M-10 GR36(270) & GR50(345), ASME SA36/SA36M-07, QQ-S-741D, KILLED FG PRACTICE

1. WELDING OR WELD REPAIR WAS NOT PERFORMED ON THIS MATERIAL
2. MELTED AND MANUFACTURED IN THE USA
3. MERCURY, RADIUM, OR ALPHA SOURCE MATERIALS IN ANY FORM HAVE NOT BEEN USED IN THE PRODUCTION OF THIS MATERIAL.

P.O.# : 24988  
 JOB : 2351 ENG: TV  
 ITEM : 04-08R & 13-08R  
 01-08 10-08

ALRO STEEL/METAL



RT07104185

*James H. Blew*

James H. Blew  
 Division Metallurgist



CMC STEEL ALABAMA  
 101 S 50TH STREET  
 BIRMINGHAM AL 35212-3525

CERTIFIED MILL TEST REPORT  
 For additional copies call  
 800-637-3227

We hereby certify that the test results presented here  
 are accurate and conform to the reported grade specification

*Marcus W. McCluney*  
 Marcus W. McCluney - CMC Steel AL  
 Quality Assurance Manager

1 SERIES-BPS ®

HEAT NO.: 1029711	S	Alro Steel Corporation	S	Alro - University Park	Delivery#: 81217268
SECTION: ANG 4X 4x3/8 20"0"	O	3100 E High St	H	777 Industrial Dr	BOL#: 70442176
A36/52950	L	Jackson MI	I	University Park IL	CUST PO#: UP9538362
GRADE: ASTM A36-12/A529-05 Gr 50	D	US 49203-3467	P	US 60494-4101	CUST P/N: 04540420
ROLL DATE: 01/08/2014	T	5177875500	T	7085345400	DLVRY LBS / HEAT: 4900.000 LB
MELT DATE: 12/31/2013	O	5177876399	O		DLVRY PCS / HEAT: 25 EA

Characteristic	Value	Characteristic	Value	Characteristic	Value
C	0.16%	Elongation test 1	26%		
Mn	0.74%	Elongation Gage Lgth test 1	8IN		
P	0.017%	Yield to tensile ratio test1	0.73		
S	0.017%	Yield Strength test 2	55.7ksi		
Si	0.17%	Tensile Strength test 2	75.5ksi		
Cu	0.30%	Elongation test 2	27%		
Cr	0.15%	Elongation Gage Lgth test 2	8IN		
Ni	0.09%	Yield to tensile ratio test2	0.74		
Mo	0.024%				
V	0.003%				
Cb	0.008%				
Sn	0.011%				
B	0.0002%				
TI	0.001%				
N	0.0075%				
Carbon Eq A6	0.34%				
Carbon Eq A529	0.37%				
Yield Strength test 1	55.5ksi				
Tensile Strength test 1	76.5ksi				

P.O.# : 24988  
 JOB : 2351  
 ITEM : 1409R  
 ENG: IV  
 10-09  
 01-09

ALRO STEELMETAL  
  
 RT07112573

THIS MATERIAL IS FULLY KILLED, 100% MELTED AND MANUFACTURED IN THE USA, WITH NO WELD REPAIR OR MERCURY CONTAMINATION IN THE PROCESS.  
 REMARKS :

ALSO MEETS ASTM GRADE A36, A529-50, A572-50, A709-36, A709-50, A992, AASHTO GRADE M270-36, M270-50, CSA G40.21-04 GRADE 44W, 50WASME SA-36 2008A ADDEND A.

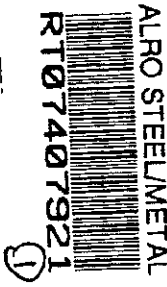
# NUCOR

## MILL TEST CERTIFICATE

1700 HOYT RD N.E.  
TUSCALOOSA, AL 35404-1000  
800-827-8872

Load Number	Tally	Mill Order Number	P.O. Number	Part Number	Certificate Number	Date
390658	0000000419270	N-107475-002	JCR-6737	L33728-1	L33728-1	08/07/2011 20:19
Grade	Order Description: A516 70, 0.2500 IN x 96.000 IN x 240.000 IN			Customer:		
	Quality Plan Description: SAS1670/A51670: ASME SAS16-70-07 ADD 09/ASTM A516-70-10			SOLD TO: WARREN FABRICATING & MACHINING WARREN OH		
				SHIP TO: WARREN FABRICATING CORP. Hubbard OH		

Shipped Item	Heat/Slab Number	Certified By	Heat Number	Yield lbt	Tensile lbt	V/T %	ELONGATION %	Bend OK?	Hard HB	Charpy Impacts (ft-lbf)	Shear %	Test Temp
				1st	1st		2"			1	2	Avg
IC3353D	B17709-02 ***		B17709 ***	55.2	77.9	71.0	27.0					
IC33648	B17710-04 ***		B17710 ***	65.9	82.5	79.9	27.1					
IC3364C	B17710-04 ***		B17710 ***	57.6	75.7	76.1	28.5					
	B17710-04 ***		B17710 ***	55.4	74.0	74.9	29.5					
				54.7	76.1	71.9	30.3					
				52.4	74.0	70.8	31.4					
				55.4	74.0	74.9	29.5					
				54.7	76.1	71.9	30.3					
				52.4	74.0	70.8	31.4					



RECEIVED  
SUBJECT TO COUNT INSP  
JUN 09 2014  
ALRO STEEL CORP  
INDIANAPOLIS

Items: 3 PCS: 27 Weight: 44106 LBS  
Mercury has not come in contact with this product during the manufacturing process nor has any mercury been used by the manufacturing process. Certified in accordance with EN 10204 3.1. No weld repair has been performed on this material. Manufactured to a fully killed fine grain practice. \*\* Produced from Coil \*\* ISO 9001:2008 Registered, PED Certified  
\*... Indicates Heats melted and Manufactured in the U.S.A.

P.O.# : 24988  
JOB : 2351  
ITEM : 8-114 11-02R  
01-11 10-02  
ENG: TV

April Pritts - QA Engineer

**BRIGHTON TRU-EDGE HEADS**  
11861 MOSTELLER RD \* CINCINNATI OH 45241 \* (513)-771-2300  
MTR COVER LETTER

MEYER TOOL & MANUFACTURING  
4601 W SOUTHWEST HIGHWAY  
OAK LAWN IL 60453

**P.O.# :** 24908  
**JOB :** 2351 **ENG:** TU  
**ITEM :** 1072  
01-12

ATTN : QC MANAGER  
CUSTOMER P/O: 024908-00  
BRIGHTON S/O: 21688  
PRODUCTION ORDER: **1028636**

TAG #: JSA-B11106 12

TO WHOM IT MAY CONCERN:

ATTACHED ARE COPIES OF MILL TEST REPORTS FOR THE FOLLOWING MATERIALS PROVIDED ON YOUR REFERENCED PURCHASE ORDER

LABOR AND MATL

1 00 - SA516-70 - CS2 ASME F&D 40" OD 0.188" MIN. THK. WITH 2" SF 2 75" ICR 40" RAD

HEAT NUMBER(S)  
A4E295-B20 (SSAB)

CERTIFICATE OF COMPLIANCE

NO HEAT TREATMENT WAS PERFORMED BY BRIGHTON.

ALL HEADS WERE COLD FORMED ALL HEADS ARE IN COMPLIANCE WITH REGULATION UG - 81 AND UCS - 79 (d) AND UG-96 AS STATED IN SECTION VIII DIVISION I OF THE ASME BOILER AND PRESSURE VESSEL CODE HEADS WERE FORMED WITHOUT COMING IN CONTACT WITH MERCURY OR ANY ITS COMPOUNDS.

IF YOU HAVE ANY FURTHER QUESTIONS CONCERNING MILL TEST REPORTS ONLY, PLEASE CONTACT ME IN CINCINNATI, OHIO AT 1-800-543-1644

VERY TRULY YOURS,  
**KATHERINE MCKINNEY**  
BRIGHTON TRU-EDGE HEADS

MILL TEST REPORTS TO GO WITH SHIPMENT.

# SSAB

## Test Certificate

1770 Bill Sharp Boulevard, Muscatine, IA 52761-9412, US

Form TIC1: Revision 2; Date 23 Apr 2014

Customer:  
ENERFAB, INC  
4955 SPRING GROVE AVE  
CINCINNATI  
OH 45232

Customer P.O. No.: 4500082769  
Product Description: ASTM A516-70(10)/ASME SA516-70(13)  
C 20% MAX; AS-ROLLED, TENSILE COUPON  
NORMALIZED 1650F+/-25F/1HR/1"  
Size: 0.250 X 120.0 X 240.0 (IN)

Mill Order No.: 41-389988-01  
Shipping Manifest: MT230895

Ship Date: 29 May 14  
Cert Date: 29 May 14


Cert No: 061457773  
(Page 1 of 1)

Heat Id	Piece Id	Tested Thickness	Tensiles		Charpy Impact Tests			Tst Temp	Tst Dir	Tst Tst (mm)	RDWTT Temp %Shr
			YS (KSI)	UTS (KSI)	%RA	Elong 2in	%Tst 4in Dir				
A4E295	B20	0.245 (DISCRT)	65	83	25						
A4E295	B20*	0.245 (DISCRT)	L	80	29						
B4E764	B19	0.245 (DISCRT)	L	83	30						
B4E764	B19*	0.245 (DISCRT)	L	79	30						

Heat Id	C	Mn	P	S	Si	Chemical Analysis										ORGN
						Total	YS	UTS	Cu	Ni	Cr	Mo	Co	V	Ti	
A4E295	.17	1.03	.010	.004	.19	.028	.025	.30	.13	.07	.03	.001	.032	.003	.0003	USA
B4E764	.16	.99	.012	.003	.18	.028	.027	.32	.16	.11	.03	.001	.031	.003	.0002	USA

KILLED STEEL  
MERCURY IS NOT A METALLURGICAL COMPONENT OF THE STEEL AND NO MERCURY WAS INTENTIONALLY ADDED DURING THE MANUFACTURE OF THIS PRODUCT.  
KILLED STEEL, PRODUCED TO A FINE GRAIN PRACTICE  
RESULTS OF TESTS PERFORMED ON NORMALIZED TEST COUPONS ARE LABELED WITH \*  
MTR EN 10204:2004 INSPECTION CERTIFICATE 3.1 COMPLIANT  
100% MELTED AND MANUFACTURED IN THE USA.  
PRODUCTS SHIPPED:  
A4E295 B20 PCES: 9, LBS: 18378  
B4E764 B19 PCES: 10, LBS: 20420

P.O.# : 24908  
JOB : 2351 ENG: TL  
ITEM : 4272  
01-12

APPROVED  
  
DEPT

(U) Cust Part # : WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION  
Brian Wales +1 563 381 5300  
SENIOR METALLURGIST - PRODUCT



# Kurt J. Lesker Company

## Certificate of Compliance

### Kurt J Lesker Company

1925 Route 51  
Jefferson Hills, PA 15025  
Sales Toll Free: 800.245.1656  
Phone: 412.387.9200  
Fax: 412.384.2745

Document Number: CSR297164

Customer Name: Meyer Tool & Mfg Inc. ~

Customer PO Number: 024973-00

Date: 12/3/2014

Part Number(s):	Quantity:
GA-1000	1.000 WASHER
GA-1650	1.000 WASHER
F1000X800N	1.000 01-16
F1000X000N	1.000 TEST PLATE
F1650X1400R	1.000 01-14
F1650X000N	1.000 TEST PLATE

This document certifies that the items and quantities stated above conform to the items and quantities stated on the above customer PO number referenced above.

Additional Comments:

John C. Bumba  
Customer Service Quality Administrator

John C. Bumba

P.O.# : 24973  
JOB : 2351 ENG: TV  
ITEM : 07-21 & 07-22  
01-14 / 01-16





# Certified Material Test Report

Swepeco Tube  
 LLC One Clifton  
 Boulevard Clifton NJ 07015

Date: 07/16/14

Sold To:  
 TW Metals (Exton)  
 The Arboretum, Suite 204  
 Exton PA 19341  
 PO Number: M49317488

Swepeco Part Number: S08000T0120RS0304LA269NP  
 Description: 8" OD x 11 Gauge (.120") A249-10a/A269-13  
 T304L

Swepeco welded tubing T304/304L 8" OD X .120" Mfd per A249-10a/A269-13a hydrotest performed. Supplying 3 pcs x 23 / 24 foot random lengths. TW Metals CP49-7.4.2-005, Rev 8 (7-30-13) applies. Melt source country of origin: Germany Country of manufacture: USA FAR BAA (FAR 52 225-1 Buy American Act-Supplies); DFARS BAA (DFARS 252 225-7001 Buy American Act & Bal Of Payments Prog FAR TAA (FAR 52 225-5 Trade Agreements) Material complies with Dodd Frank Act Section 1502

Order Number: 36657  
 Job Number: 16906  
 Heat #: 300160

Raw Material Values

C	0.030	Ta	
Mn	1.710	N	0.060
P	0.025	V	
S	0.001	Cu	
Si	0.350	Ce	
Cr	18.170	B	
Ni	8.010	Al	
Mo		Cb	
Ti		Cb+Ta	
Co		Fe	
		W	
Yield	38000	PSI	
Tensile	91000	PSI	
Elongation	59.6		
Hardness	HRB 81		
Grain Size			

Product Analysis (Base/Weld)

C	0.022	Ta	
Mn	1.71	N	0.06
P	0.032	V	
S	0.006	Cu	
Si	0.32	Ce	
Cr	18.27	B	
Ni	8.12	Al	
Mo		Cb	
Ti		Cb+Ta	
Co		Fe	
		W	

Weld Wire

C	Ta
Mn	N
P	V
S	Cu
Si	Ce
Cr	B
Ni	Al
Mo	Cb
Ti	Cb+Ta
Co	Fe
	W

Product Results

Yield	48128 PSI	Face Bend	OK	Xray	
Tensile	82307 PSI	Root Bend	OK	LP	
Elongation	66	Side Bend	OK	UT	
Hardness	HRB 79	Reverse Bend	OK	Ferrite	
Grain Size		Flattening	OK	Impact	
Hydro	500 PSI OK	OK R. Flattening	OK	PMI	
		Flange	OK	Corrosion	
				Other	

TW METALS  
 TEST JUL 16 2014  
 ACCEPTED BY

Heat Treat Temp. (F): 1900-2050 DEG Heat Treat Time (Minutes): 5

Quench: Air Cool

Remarks:

CERTIFIED TO MEET THE REQUIREMENTS OF NACE MR0175 AND MR0103  
 NO WELD REPAIRS HAVE BEEN PERFORMED ON BASE METAL.  
 ALL CERTS TO DIN 50049 3.1B, EN10204 3.1 & ISO10474 3.1B  
 NO MATERIALS OR PROCESSES USING ELEMENT MERCURY OR ITS COMPOUNDS HAVE BEEN USED  
 THE PROCESSING OF ITEMS SUPPLIED ON THIS ORDER  
 ALL PRODUCTS MANUFACTURED IN U.S.A. WE CERTIFY THAT THE ABOVE MATERIAL IS IN FULL  
 COMPLIANCE TO THE ABOVE LISTED SPECIFICATIONS.  
 CERTIFIED TO WITHSTAND

Swepeco Tube LLC  
 Jeff Nieradka  
 Q.C. Coordinator

**P.O.# :** 24974  
**JOB :** 2351 **ENG:** TV  
**ITEM :** 05-15  
 01-15

Sold To: ALRO STEEL CORP  
 PO BOX 927  
 JACKSON, MI 49204-0927  
 (517) 787-5500

Ship To: ALRO METALS SERVICE CENTER  
 777 INDUSTRIAL DRIVE  
 UNIVERSITY PARK IL 60466-0000  
 (708) 534-5400

Customer P.O.	UP9529025	Sales Order	198802.1
Product Group	Merchant Bar Quality	Part Number	5325060024010W0
Grade	NUCOR MULTIGRADE	Lot #	DL1410040501
Size	1/4x6" Flat	Heat #	DL14100405
Product	1/4x6" Flat 20' NUCOR MULTIGRADE	B.L. Number	C1-627202
Description	NUCOR MULTIGRADE	Load Number	C1-307256
Customer Spec		Customer Part #	06502820

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 1/29/2014 Melt Date: 1/19/2014 Qty Shipped LBS: 5,104 Qty Shipped Pcs: 50

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	Sn
0.14%	0.74%	0.011%	0.016%	0.19%	0.35%	0.10%	0.14%	0.020%	0.0290%	0.003%	0.015%
Ti 0.001%	CE4020 0.33%										

CE4020: C. E. CSA G4020 AASHTO M270

Yield 1: 50 000psi (345MPa)

Tensile 1: 70 000psi (483MPa)

Elongation: 28% in 8" (% in 203.3mm)

Yield 2: 51,000psi (352MPa)

Tensile 2: 71,000psi (490MPa)

Elongation 28% in 8" (% in 203.3mm)

Specification Comments: NUCOR MULTIGRADE MEETS THE REQUIREMENTS OF: ASTM A36/A36M-08, A529/529M-05(2009)  
 GR50(345), A572/572M-07 GR50(345), A709/709M-10 GR36(250) & GR50(345), CSA G40.21-04 GR44W(300W) & GR50W(350W)  
 AASHTO M270/M270M-10 GR36(270) & GR50(345), ASME SA36/SA36M-07, QQ-S-741D, KILLED FG PRACTICE

1. WELDING OR WELD REPAIR WAS NOT PERFORMED ON THIS MATERIAL
2. MELTED AND MANUFACTURED IN THE USA
3. MERCURY, RADIUM OR ALPHA SOURCE MATERIALS IN ANY FORM HAVE NOT BEEN USED IN THE PRODUCTION OF THIS MATERIAL

P.O.# : 24988  
 JOB : 2351 ENG: TV  
 ITEM : 04-TTR  
 01-17

ALRO STEEL/METAL  
  
 RT07112771

*James H Blew*

James H Blew  
 Division Metallurgist



# PRODUCT CERTIFICATION

WORK ORDER  
136881

HEAT NUMBER  
S131300

SALES ORDER / RLS  
074764 / 006

CERT ID / REV  
00129012 / 01

SOLD TO

**Alro Steel - Potterville**  
5859 Alro Park Drive  
Potterville, MI 48876  
USA  
Attn: Quality/Receiving (517-645-9909)

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	SKIDS	LADING NO	SHIPMENT DATE
PV 9742035	06502920	4,034 LBS	2	00075370	07/15/2014

SPECIFICATION  
2500 x 6 500 x 240.000 HR A36

CERTIFICATION REQUIREMENTS

Chemistry

C	Mn	P	Si	S
.206	.492	.009	.033	.005

Tag Results

	TENS	Yield	ELNG
136881-001	71520	49780	28 4
136881-002	71520	49780	28 4

CERTS

ROHS Compliant  
Manufactured in the USA

**RECEIVED**

JUL 16 2014

**ALRO PV**

End of Certification

ALRO STEEL/METAL



RT07611386

P.O.# : 24988

JOB : 2351 ENG: TV

ITEM : 04-18R  
01-18

We certify these test results are a true and correct copy of the records created by the producing mill or as tested in our laboratory. This test report may not be reproduced or distributed without the written permission of Stripco LLC



36502 Van Born Road; Wayne, MI 48184  
Phone 734/729-6110 Fax 734/729-6663

M00560 1 RS  
Heat # AM410

Page 1 of 2

PO # 024909-00

MATERIAL CERTIFICATION

<b>S O L D</b>	MEYER TOOL & MFG. 4601 W SOUTHWEST HWY OAK LAWN, IL 60453	<b>Shipping Information</b>	<b>Material Cert Number</b>
			838158 FE101R0
			<b>Revision Date</b>
			11/11/2014

<b>Item 1 of 2</b>	<b>Part Number: JSA-B11106 01</b>		
<b>Material</b>	ASME SA-105 2013 Edition		
<b>Heat Treat</b>	per Specification		
<b>Destructive Test</b>	per Specification		
<b>Finish</b>	Forge with allowance to finish		
<b>Reference</b>	Part Number: JSA-B11106 01, Job Number: 02351-0001		
<b>Size</b>	OD	ID	Length (inches)
	72.00	62.00	4.50
<b>Surface</b>	Forged	Forged	Forged

<b>Heat Number</b>	<b># of Pieces</b>	(MILL - EQS-ELLWOOD QUALITY)
AM410	1	MSDS Previously Sent

Note: Additional prefix letter stamped on product with heat number is for our inventory purposes only and not relevant to heat number.

**Chemical Composition (Wt. %)**

<b>C</b>	<b>Mn</b>	<b>P</b>	<b>S</b>	<b>Si</b>	<b>Ni</b>	<b>Cr</b>	<b>Mo</b>	<b>Cu</b>	<b>Al</b>	<b>V</b>
0.20	1.26	0.008	0.024	0.20	0.09	0.15	0.03	0.15	0.026	0.004
<b>Cb</b>	<b>As</b>	<b>Ca</b>	<b>H</b>	<b>Pb</b>	<b>Sb</b>	<b>Sn</b>	<b>Ti</b>			
0.002	0.010	0.0001	0.00018	<0.001	<0.001	0.008	0.002			

Cu+Ni+Cr+V+Mo  
0.42

Cr+Mo  
0.18

C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15  
0.46

**P.O.# :** 24909

**JOB :** 2351 **ENG:** TV

**ITEM :** 02-01

ITEM 10-01 DWG 0235-16

**Mechanical Properties:**

<b>Pcs</b>	<b>Tensile</b>	<b>Yield<sup>1</sup></b>	<b>Elongation</b>	<b>Reduction</b>	<b>Comments</b>
1	KSI	KSI	%	of Area %	
	77.60	48.70	33.9	65.8	LONGITUDINAL

<sup>1</sup>(Offset: .2%)

**Brinell Hardness Results:**

<b>Pcs</b>	<b>3000 kgf Load</b>
1	156-156

Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute.

Quality Assurance Representative



36502 Van Born Road; Wayne, MI 48184  
Phone 734/729-6110 Fax 734/729-6663

MEYER TOOL & MFG

M00560 1 RS  
Heat # AM410

PO # 024909-00

MATERIAL CERTIFICATION

Page 2 of 2

Material Cert Number 838158 FE101R0
--

Compliance Statements:

We certify that the material listed was not processed with mercury bearing instruments and/or equipment which might cause contamination, nor was mercury handled in the immediate vicinity during the manufacturing process. We also certify that the material was not processed or cleaned with low melting point materials as alloying constituents, i.e. lead, zinc, cadmium, tin, antimony, bismuth, sulfur, or their compounds.

In accordance with the requirements of the Pressure Equipment Directive, all testing, inspection, and documentation is produced in accordance with EN 10204:2004 Type 3.1 and ISO 10474 Type 3.1.B

The products supplied are in compliance with the quantity and quality requirements of the purchase order and specifications noted. The test reports represent the actual attributes of the items furnished and the test results are in full compliance with all applicable specifications and order requirements.

P.O.# : 24909  
JOB : 2351 ENG: TV  
ITEM : 02-01  
10-01

Note: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute

  
Quality Assurance Representative

**BRIGHTON TRU-EDGE HEADS**  
11861 MOSTELLER RD \* CINCINNATI OH 45241 \* (513)-771-2300  
MTR COVER LETTER

MEYER TOOL & MANUFACTURING  
4601 W. SOUTHWEST HIGHWAY  
OAK LAWN IL 60453

**P.O.# :** 024908  
**JOB :** 2351 **ENG:** TV  
**ITEM :** 02-03  
10-03

ATTN : QC MANAGER  
CUSTOMER P/O: 024908-00  
BRIGHTON S/O: 21688  
PRODUCTION ORDER: **1028635**

TAG #: JSA-B11106 03

TO WHOM IT MAY CONCERN:

ATTACHED ARE COPIES OF MILL TEST REPORTS FOR THE FOLLOWING MATERIALS PROVIDED ON YOUR REFERENCED PURCHASE ORDER

LABOR AND MATL

1.00 - SA516-70 - CS2 ASME F&D 62" OD 0.188" MIN THK WITH 2" SF 3.75" ICR 62" RAD.

HEAT NUMBER(S)  
A4E295-B20 (SSAB)

CERTIFICATE OF COMPLIANCE

NO HEAT TREATMENT WAS PERFORMED BY BRIGHTON.

ALL HEADS WERE COLD FORMED. ALL HEADS ARE IN COMPLIANCE WITH REGULATION UG - 81 AND UCS - 79 (d) AND UG-96 AS STATED IN SECTION VIII DIVISION I OF THE ASME BOILER AND PRESSURE VESSEL CODE. HEADS WERE FORMED WITHOUT COMING IN CONTACT WITH MERCURY OR ANY ITS COMPOUNDS.

IF YOU HAVE ANY FURTHER QUESTIONS CONCERNING MILL TEST REPORTS ONLY, PLEASE CONTACT ME IN CINCINNATI, OHIO AT 1-800-543-1644.

VERY TRULY YOURS,  
**KATHERINE MCKINNEY**  
BRIGHTON TRU-EDGE HEADS

MILL TEST REPORTS TO GO WITH SHIPMENT.

# SSAB

## Test Certificate

1770 Bill Sharp Boulevard, Muscatine, IA 52761-9412, US

Form TC1: Revision 2: Date 23 Apr 2014

Customer:  
ENERFAB, INC  
4955 SPRING GROVE AVE  
CINCINNATI  
OH 45232

Customer P.O. No.: 450082769  
Product Description: ASTM A516-70(10)/ASME SA516-70(13)  
C 20% MAX; AS-ROLLED, TENSILE COUPON  
NORMALIZED 1650F+/-25F/1HR<sup>1/2</sup>  
Size: 0.250 X 120.0 X 240.0 (IN)  
Mill Order No.: 41-389988-01  
Shipping Manifest: MT1230895  
Ship Date: 29 May 14  
Cert Date: 29 May 14  
Cert No: 061457773  
(Page 1 of 1)

Heat Id	Piece Id	Tested Thickness	Tensiles			Charpy Impact Tests			Tst Temp	Tst Dir	Tst Size (mm)	BDWTT Temp %Shr
			YS (KSI)	UTS (KSI)	%RA	Abs. Energy (FTLB)	% Shear					
A4E295	B20	0.245 (DISCRT)	65	83	25	1	2	3				
A4E295	B20*	0.245 (DISCRT)	62	80	29							
B4E764	B19	0.245 (DISCRT)	64	83	30							
B4E764	B19*	0.245 (DISCRT)	61	79	30							

**Heat Id**    **C**    **Mn**    **P**    **S**    **SI**    **Total**    **Sol AI**    **Cu**    **Ni**    **Cr**    **Mo**    **CB**    **V**    **Ti**    **B**

A4E295    .17    1.03    .010    .004    .19    .028    .025    .30    .13    .07    .03    .001    .032    .003    .0003

B4E764    .16    .99    .012    .003    .18    .028    .027    .32    .16    .11    .03    .001    .031    .003    .0002

**Chemical Analysis**

**PCES:** 9, LBS: 18378    B4E764    B19    **PCES:** 10, LBS: 20420

**P.O.#:** 24908  
**JOB:** 8351  
**ITEM:** 02-05  
10-03

**ENG:** TL

**APPROVED**

**DEPT**

WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH, AND MEETS THE REQUIREMENTS OF, THE APPROPRIATE SPECIFICATION

**Brian Wales + 1 563 381 5300**  
SENIOR METALLURGICAL PRODUCT

Cust Part # : \_\_\_\_\_

# NUCOR

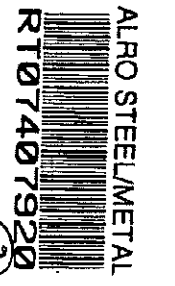
NUCOR STEEL TUSCALOOSA, INC.  
 1700 HOLT RD N.E.  
 TUSCALOOSA, AL 35404-1000  
 800-827-8872

## MILL TEST CERTIFICATE

Load Number	Tally	MILL Order Number	P.O. Number	Part Number	Certificate Number	Date
390658	00000000419270	N-107475-002	JCR-6737	L335728-1	08/07/2011 20:19	
Grade						
Order Description: A516 70, 0.2500 IN X 96.000 IN X 240.000 IN Quality Plan Description: SA51670/A51670: ASME SAS16-70-07 ADD 09/ASTM A516-70-10						
Customer: Sold TO: WARREN FABRICATING & MACHINING WARREN OH Ship TO: WARREN FABRICATING CORP. Hubbard OH						

Shipped Item	Heat/Slab Number	Certified By	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	CD	V	Al	Ti	N2	B	Ca	Sn	CEV	Test Temp
IC33530	B117709-02 ***	B117709	0.22	1.06	0.019	0.004	0.20	0.25	0.07	0.11	0.013	0.000	0.002	0.032	0.001	0.008	0.0002	0.0033	0.009	0.44	
IC33648	B117710-04 ***	B117710	0.22	1.07	0.015	0.004	0.19	0.27	0.07	0.09	0.013	0.000	0.001	0.035	0.001	0.011	0.0002	0.0042	0.009	0.44	
IC3364C	B117710-04 ***	B117710	0.22	1.07	0.015	0.004	0.19	0.27	0.07	0.09	0.013	0.000	0.001	0.035	0.001	0.011	0.0002	0.0042	0.009	0.44	

Shipped Item	Certified By	Heat Number	Yield Kst	Tensile Kst	V/T %	ELONGATION %	Bend OK?	Hard HB	Charpy Impacts (ft-lbf)	Shear %	Test Temp										
						2"	8"		1	2	3	Avg	1	2	3	Avg					
IC33530	SIG335388TT	B117709 ***	55.3	77.9	71.0	27.0															
IC33530	SIG335388TT	B117709 ***	65.9	82.5	79.9	27.1															
IC33530	SIG3353MT	B117709 ***	57.6	75.7	76.1	28.5															
IC33648	SIG336487T	B117710 ***	55.4	74.0	74.9	29.5															
IC33648	SIG336487T	B117710 ***	54.7	76.1	71.9	30.3															
IC33648	SIG3364MTT	B117710 ***	52.4	74.0	70.8	31.4															
IC3364C	SIG336487T	B117710 ***	55.4	74.0	74.9	29.5															
IC3364C	SIG3364FTT	B117710 ***	54.7	76.1	71.9	30.3															
IC3364C	SIG3364MTT	B117710 ***	52.4	74.0	70.8	31.4															



JUN 09 2014  
 RECEIVED  
 SUBJECT TO COUNT INSP

Items: 3 PCS: 27 Weight: 44108 LBS  
 Mercury has not come in contact with this product during the manufacturing process not has any mercury been used by the manufacturing process. Certified in accordance with EN 10204 3.1. No weld repair has been performed on this material.  
 Manufactured to a fully killed fine grain practice. \*\* Produced from Coil \*\*  
 ISO 9001:2008 Registered, PED Certified  
 \*\*\*\*\* Indicates Heats melted and Manufactured in the U.S.A.

P.O.#: 24988  
 JOB: 2351  
 ENG: TV  
 ITEM: 1404  
 10-04

April Pitts - QA Engineer





**PRODUCT CERTIFICATION**

WORK ORDER  
136881


HEAT NUMBER  
S131300

SALES ORDER / RLS  
074764 / 006

CERT ID / REV  
00129012 / 01

SOLD TO

**Alro Steel - Potterville**  
5859 Alro Park Drive  
Potterville, MI 48876  
USA  
Attn: Quality/Receiving (517-645-9909)

CUSTOMER P O PV 9742035	CUSTOMER PART 06502920	QUANTITY 4,034 LBS	SKIDS 2	LADING NO 00075370	SHIPMENT DATE 07/15/2014
SPECIFICATION      HR25006500-003 2500 x 6 500 x 240.000 HR A36					
CERTIFICATION REQUIREMENTS					
Chemistry					
C	Mn	P	Si	S	
.206	.492	.009	.033	.005	
Tag Results					
	TENS	Yield	ELNG		
136881-001	71520	49780	28.4		
136881-002	71520	49780	28.4		
CERTS ROHS Compliant Manufactured in the USA					
End of Certification					
ALRO STEEL/METAL		<p><b>RECEIVED</b></p> <p>JUL 16 2014</p> <p><b>ALRO PV</b></p>			
 RT07611386		<p>P.O.# : <u>24988</u></p> <p>JOB : <u>2351</u>    ENG: <u>TV</u></p> <p>ITEM : <u>13-07R</u> <u>10-07</u></p>			

We certify these test results are a true and correct copy of the records created by the producing mill or as tested in our laboratory. This test report may not be reproduced or distributed without the written permission of Stripco LLC

Sold To: ALRO STEEL CORP  
 PO BOX 927  
 JACKSON, MI 49204-0927  
 (517) 787-5500

Ship To: ALRO METALS SERVICE CENTER  
 777 INDUSTRIAL DRIVE  
 UNIVERSITY PARK IL 60466-0000  
 (708) 534-5400

Customer P.O.	UP9763676	Sales Order	206684.1
Product Group	Merchant Bar Quality	Part Number	5325060024010W0
Grade	NUCOR MULTIGRADE	Lot #	DL1410363701
Size	1/4x6" Flat	Heat #	DL14103637
Product	1/4x6" Flat 20' NUCOR MULTIGRADE	B.L. Number	C1-637922
Description	NUCOR MULTIGRADE	Load Number	C1-316842
Customer Spec		Customer Part #	06502820

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 6/25/2014 Melt Date: 6/14/2014 Qty Shipped LBS: 5,104 Qty Shipped Pcs: 50

Melt Date: 6/14/2014

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	Sn
0.15%	0.72%	0.009%	0.024%	0.19%	0.31%	0.09%	0.11%	0.020%	0.0330%	0.002%	0.013%
TI	CE4020										
0.001%	0.33%										

CE4020: C. E. CSA G4020, AASHTO M270

Roll Date: 6/25/2014

Yield 1: 57,000psi (393MPa) Tensile 1: 74,000psi (510MPa) Elongation: 20% in 8' (% in 203.3mm)  
 Yield 2: 58,000psi (400MPa) Tensile 2: 74,000psi (510MPa) Elongation 20% in 8' (% in 203.3mm)

Specification Comments: NUCOR MULTIGRADE MEETS THE REQUIREMENTS OF: ASTM A36/A36M-08, A529/529M-05(2009), GR50(345), A572/572M-07 GR50(345), A709/709M-10 GR36(250) & GR50(345), CSA G40 21-04 GR44W(300W) & GR50W(350W), AASHTO M270/M270M-10 GR36(270) & GR50(345), ASME SA36/SA36M-07 QQ-S-741D KILLED FG PRACTICE

1. WELDING OR WELD REPAIR WAS NOT PERFORMED ON THIS MATERIAL
2. MELTED AND MANUFACTURED IN THE USA
3. MERCURY, RADIUM, OR ALPHA SOURCE MATERIALS IN ANY FORM HAVE NOT BEEN USED IN THE PRODUCTION OF THIS MATERIAL

P.O.# : 24988  
 JOB : 2351 ENG: TV  
 ITEM : 13-10R  
 10-10

ALRO STEEL/METAL  
  
 RT07111872

*James H. Blew*

James H. Blew  
 Division Metallurgist