

## Clean Service Certificate of Conformance

(Satisfies DIN EN 10204 3.1)

**Tescom**  
 12616 Industrial Boulevard  
 Elk River, MN 55330-2491  
 T (763) 441 6330  
 F (763) 241 3224  
 www.tescom.com

Tescom certifies the following articles furnished conform to Tescom's specifications and drawings, pressure rating criteria per ANSI/ASME B31.3 along with the technical requirements of the purchase order. Tescom certifies that we do not use any animal bi-products in the manufacturing of these parts. Articles are cleaned in accordance to the recommendations of ASTM G-93 and CGA-4.1 (Ref. Tescom's Specification ES 60295) which assures removal of visible particles and combustible residues. Care must be taken during installation to prevent either particle or combustible film contamination.

All internal stainless steel flow stream parts assembled in Tescom regulators and valves are electro-polished per Tescom specification ES5075.

Note: Specifications of materials in regulators for Oxygen Service is the USER'S RESPONSIBILITY. Electronic components and gauges are not cleaned to the above specification.

Tescom certifies the surface finish of the product is in conformance to .30 Ra as specified on Tescom's specifications and drawings and that no polishing compounds were used in the manufacturing process. Documentary evidence in the form of inspection records, process records, and material certifications are on file and available for review at Tescom.

Tescom Order Number: 491026

Customer PO: 50002520/90052DS

Regulator Model Number(s)	Qty	Serial Number(s)	PVC Tag # (if applicable)
PH18HC0GNBADD9	1	01303122	

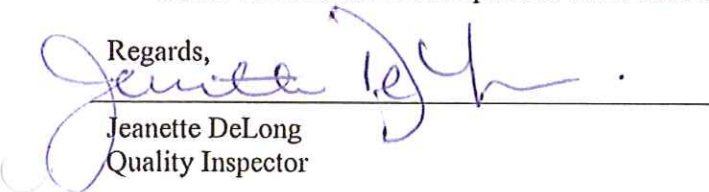
Parts in Flow Stream			
Part	Part Number	Material	Reference
BODY, PORTED	#F66043-W24LA000	316L SST	HEAT # 423756
FITTING	#F66104-24	316L SST	HEAT # 78118
DIAPHRAGM	63102-03	GYLON	FDA / USP CLASS VI
BOTTOM DIAPHRAGM PLATE	63666-6	316L SST	ASTM A479 / ASME SA479
JAM NUT	5410-268	18-8 SST	
PISTON	64795-6	316 SST	ASTM A479 / ASME SA479
O-RING	#F66251-050187	E.P	FDA / USP CLASS VI
O-RING	#F66251-050107	E.P	FDA / USP CLASS VI
CONNECTOR	64797-8	17-4 SST	ASTM A564
SPRING	64796	SST	
BOTTOM PLATE INSERT	67644-OPTIMA	PEAK OPTIMA	FDA / USP CLASS VI
ORIFICE	64798-6	316 SST	ASTM A479 / ASME SA479
SEAL	67729-3	TEFLON	FDA / USP CLASS VI
SEAT	#F67641-05	E.P	FDA / USP CLASS VI
SEAT RETAINER	64801-6	316 SST	ASTM A479 / ASME SA479
VALVE	64800-6	316 SST	ASTM A479 / ASME SA479
O-RING	#F66251-051517	E.P	FDA / USP CLASS VI
BOTTOM PLATE	64802-6-A	316L SST	FDA / USP CLASS VI

In addition Tescom certifies the following checked box:

F.D.A

- Tescom certifies that the elastomer compounds from which we manufacture our parts comply with the F.D.A. requirements of 21 CFR 177. USP Class VI compliant and peroxide cured.
- If seats are made from Peek Optima or PTFE these are listed by the manufacturer being USP Class VI compliant.

Regards,

  
 Jeanette DeLong  
 Quality Inspector

Date 6/10/2011



**VALBRUNA**  
**SLATER STAINLESS, INC.**  
 2400 Taylor Street West, P.O. Box 630  
 Fort Wayne, Indiana USA 46801  
 Phone: 260-434-2992 Fax: 260-434-2905

**Product Certification Report**

Report Number: **4570771**

Certified on Aug 23, 2010 Page 1 of 1

Order I.D. 1002225 001		Order Date 8/19/10		Commodity Code 6165	
Dim 1 6.0000	Dim 2 .0000	Dim 3 .0000	Heat I.D. 423756	Customer I.D. 001941	Customer Purchase Order #65-53062
Product Shape Rounds			Product Surface HR & Rough Turned		Customer Grade 316/316L
Length (Inches) 132.000 Min. 156.000 Max.			Bill of Lading # 412646	Weight	

**Ship To**  
 MARMON KEYSTONE  
 BUCYRUS WAREHOUSE  
 930 NORTH SANDUSKY AVENUE  
 BUCYRUS, OH 44820

**Sold To**  
 VALBRUNA STAINLESS, INC.  
 2400 TAYLOR STREET WEST  
 FORT WAYNE, IN 46802

Lift#: 0022 0023 0024 0048

CONDITION A EN 10204 DTD 1991 3.1.B QQ-S-763F  
 ASTMA 276-08a ASTMA 479-08 ASMESA 479-07  
 AMS 5653F AMS 5648K

**CHEMICAL ANALYSIS**

C ✓ Mn ✓ P ✓ S ✓ Si ✓ Cr ✓ Ni ✓ Mo ✓ Cu Co N  
 .017 1.76 .029 .026 .53 16.85 10.28 2.03 .47 .10 .08

BRINELL HARDNESS ASTM E10-08

HBW ✓  
 172

TENSILE PROPERTIES ASTM E8-08

TS (PSI) .2%YS (PSI) %EL(2") YRA  
 84600 38200 60.5 73.2

MACRO ASTM E340-00/E381-01

MACRO  
 OK  
 OK

GRAIN SIZE ASTM E112-96

GRAIN SIZE Etchant Magnification X  
 7 Oxalic 100

ASTMA 262-10 PR E(A Utilized)

OXALIC Etchant Magnification X  
 OK Oxalic 500

Free of mercury and low melting alloy contamination.

Heated to 1900F min. and water quenched (heating time & temp appropriate for optimum quality).

No welding or weld repair done.

Chemical testing performed to one or more of the following ASTM methods: E415-08, E572-02a, E1019-08, E101

Location of tensile fracture: inside middle of gage length.

Chemical Analysis performed at Acciaierie Valbruna, Italy.

No mercury or low melting alloy contamination. No weld repair.

Material melted in Italy, manufactured in the United States.

Material conforms to listed specifications and is DFARS compliant.

Quality system is compliant with ISO 9001:2000. Produced in accordance with EN 10204 3.1.

**ACTUAL CERTIFICATION**

**PART # PH18HCOGNBADD9**  
**DATE 6/10/11 INSP JA**  
**S/N 01303122**

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

*Dennis Hackett*  
 \_\_\_\_\_  
 Dennis Hackett

P.O. Box 264  
 BRADFORD, PA 16701  
 Ph: 800-458-6095  
 PROCESS EQUIPMENT COMPANY Fax: 814-362-4453

Order #: 00319297  
 Reference: I63989  
 Order Date: 5/10/2011  
 Customer: Tescom Corporation  
 12616 Industrial Blvd.  
 Elk River, MN 55330-2491

Part #: 9803BOM  
 Heat #: 78118

627323 WELD 1 1/2" FRLS TO VLV  
 BODY 20RA/S2RA F67315-ADD9

Qty: 1

316L

CHEMICAL COMPOSITION (WT%)									
Carbon	Mang	Phosphur	Sulfur	Silicon	Chrom	Nickel	Nitrogen	Moly	Copper
.025	1.600	.038	.030	.470	16.400	10.100	.080	2.030	.440

ASTM A276, A479, A193, A320, A182  
 ASME SA182, SA479, SA193, SA320  
 AMS QQS-763B, 5648K, 5653F  
 EN 10204 3.1B

MECHANICAL PROPERTIES				
Hardness	Yield Strength	Tensile Strength	Elongation(%)	Reduction (%)
173 BHN	45 KSI	93 KSI	56	71

RAW MATERIAL SPECIFICATIONS

CERTIFICATION FOR P/N

#F666104-24

*We certify that the information contained in this Mill Test Summary was obtained from, and is a faithful representation of, the data furnished to us. The document from which this information was taken is on file in our office.*

*We certify that we have no knowledge of mercury or radioactive material used in the melting or processing of steel used in fittings sold by our company.*



William D. Work  
 Quality Control Manager  
 Date: 5/26/2011  
 Time: 7:35 AM



**EMERSON**  
Process Management

# WELD DATA RECORD

Tescom  
12616 Industrial Boulevard  
Elk River, MN 55330-2491

T (763) 441 6330  
F (763) 241 3224  
www.tescom.com

Date: 05/03/2011

Customer Order No.: N/A

Reg. Serial No.(s): 01303122

Shop Order No.: 973665

Body P/N:	<u>#F66043-W24LA000</u>
Heat No.:	<u>----- 423 756</u>
Receiver No.:	<u>WO 972606</u>

Fitting P/N:	<u>#F66104-24</u>
Heat No.:	<u>78118</u>
Receiver No.:	<u>465863</u>

Fitting P/N:	_____
Heat No.:	_____
Receiver No.:	_____

Fitting P/N:	_____
Heat No.:	_____
Receiver No.:	_____

Weldment Drawing No.: #F67315-ADD9

Welding Description/Procedure: ASME BPE

Shielding Gas:

Argon: 99.998%

Helium: \_\_\_\_\_

Welded By: Dan Biccioni

Date Welded: 5/12/11

Machine/Work Center No. or Welding Supplier: Top Line

Auto Weld: Yes  No

Inspected By: Brian M'Farlane

Date Inspected: 5-31-11

Method of Inspection: Visual

Borescope  Internal  External  Caliper



### Certificate of Conformity

Greene, Tweed & Co.  
2076 Detwiler Road  
Kulpaville PA 19443-0305  
Phone: (215) 256-9521 Fax: (215) 256-0189

<u>Certified to</u> TESCOM CORP. INDUSTRIAL CONTROLS DIVISION 12816 INDUSTRIAL BLVD ELK RIVER MN 55330	<u>Account number</u> 1001277	<u>Certification date</u> 10/01/2009	<u>Certification number</u> 81891952-000010
	<u>Customer purchase order:</u>	140525	
	<u>Customer purchase order line:</u>		
	<u>GT sales order:</u>	781629	

We hereby certify that the material supplied herein has been manufactured to conform to the current GREENE, TWEED specifications applicable to the referenced purchase order and/or its specification(s) and drawings. Where appropriate, inspection and/or testing has been completed to insure conformance to your requirements. Quality control and/or test results are on file and/or attached as requested.

We certify that the parts and/or materials furnished hereunder are new, not used, reworked or rebuilt and not of such age or so deteriorated as to impair their usefulness or safety, and not former government surplus property. The parts or items on this order were manufactured from materials by processes free from radium, mercury and/or asbestos contamination.

<u>Customer part#/Rev:</u>	F16187		
<u>GT part#/Rev:</u>	SM06-06-072-816 / Rev. B	<u>Quantity:</u>	6.00 EA
<u>Description:</u>	SLAB 6 X 6	<u>Mfgfrom:</u>	816 /EPDM

FDA COMPLIANT  
USP CLASS VI COMPLIANT

#### Batches shipped

<u>Batch number</u>	<u>Quantity</u>	<u>Manufact.Dte</u>	<u>Cure date</u>	<u>GT Exp. Date</u>
1001732790	1.00 EA	03/24/2009	1Q2009	03/17/2036
1001797789	5.00 EA	09/16/2009	3Q2009	09/09/2036

#### Batch details

<u>Batch number</u>	1001732790	<u>Quantity</u>	1.00 EA
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<u>Manufactured from</u>	816/EPDM	<u>Batch number</u>	1001706902
<u>Material</u>	3308160	<u>Description</u>	816 STD CPD (7.0 / 100 Lbs.)

	<u>Unit</u>	<u>Value</u>	<u>Method</u>
<u>Original Properties</u>			
Specific Gravity		1.08	ASTM D297
Hardness, Shore A	P	78.00	ASTM D2240
Tensile Strength	PSI	2597.00	ASTM D412
Elongation	%	197.00	ASTM D412
Modulus @ 100% elongatio	PSI	966.00	ASTM D412
Modulus @ 50% Elongatio	PSI	485.00	ASTM D412

## CERTIFICATION FOR P/N

#FL67641-05

Joe Froelich, Quality Manager



**Certificate of Conformity**

Greene, Tweed & Co.  
 2075 Dotwiller Road  
 Kulpaville PA 19443-0305  
 Phone: (216) 256-9521 Fax: (216) 250-0189

<u>Certified to</u>	<u>Account number</u>	<u>Certification date</u>	<u>Certification number</u>
TESCOM CORP. INDUSTRIAL CONTROLS DIVISION 12616 INDUSTRIAL BLVD ELK RIVER MN 55330	1001277	10/01/2009	81891952-000010
	<u>Customer purchase order:</u>	140525	
	<u>Customer purchase order line:</u>		
	<u>GT sales order:</u>	781629	

We hereby certify that the material supplied herein has been manufactured to conform to the current GREENE, TWEED specifications applicable to the referenced purchase order and/or its specification(s) and drawings. Where appropriate, inspection and/or testing has been completed to insure conformance to your requirements. Quality control and/or test results are on file and/or attached as requested.

We certify that the parts and/or materials furnished hereunder are new, not used, reworked or rebuilt and not of such age or so deteriorated as to impair their usefulness or safety, and not former government surplus property. The parts or items on this order were manufactured from materials by processes free from radium, mercury and/or asbestos contamination.

<u>Customer part#/Rev:</u>	F16187		
<u>GT part#/Rev:</u>	SM06-06-072-816 / Rev. B	<u>Quantity:</u>	6.00 EA
<u>Description:</u>	SLAB 6 X 6	<u>Mfgfrom:</u>	816 /EPDM

<u>Batch number</u>	1001797789	<u>Quantity</u>	5.00 EA
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<u>Manufactured from Material</u>	816/EPDM 3308160	<u>Batch number</u>	1001789901
		<u>Description</u>	816 STD CPD (7.0 / 100 Lbs.)

	Unit	Value	Method
<u>Original Properties</u>			
Specific Gravity		1.08	ASTM D297
Hardness, Shore A	P	78.00	ASTM D2240
Tensile Strength	PSI	2710.00	ASTM D412
Elongation	%	223.00	ASTM D412
Modulus @ 100% elongatn	PSI	762.00	ASTM D412
Modulus @ 50% Elongatio	PSI	414.00	ASTM D412

**CERTIFICATION FOR P/N**  
 #FL67641-05

Joe Froelich, Quality Manager



**Slater Steels Corporation**

Fort Wayne Specialty Alloys Division  
 2400 Taylor Street West, P.O. Box 830  
 Fort Wayne, Indiana USA 46801  
 Phone: 260-434-2892 Fax: 260-434-2908  
 www.slaterstainless.com

**Product Certification Report**

Report Number: **3709620**

Certified on Nov 26, 2003 Page 1 of 1

Slater Order I.D.		Order Date		Commodity Code		Mark Date	
0320105 001		10/29/03		3433		8/13/03	
Dim 1	Dim 2	Dim 3	Heat ID.	Customer ID.	Customer Purchase Order		
5.5000	.0000	.0000	75265	001123	01-77859		
Product Shape			Product Surface			Customer Grade	
Rounds			HR & Rough Turned			316/316L	
Length (inches)		DU of Leading S		Weight			
132.000 Min. 156.000 Max.		306827					

**Ship To**  
 CASTLE METALS  
 3400 NORTH WOLF ROAD  
 FRANKLIN PARK, IL 60131

**Sold To**  
 CASTLE METALS  
 3400 NORTH WOLF ROAD  
 FRANKLIN PARK, IL 60131

Lifts: 0050 0081  
 CASTLE G.M.Q. COND A CONDITION A 3316-227 REV 12 DTD 05/20/03  
 QQS 763 F UNS S31600/S31603 ASTMA 182-02 Chem Only  
 ASTMA 276-02a ASTMA 479-02 ASMESA182 01ED ChemOnly2002A1  
 ASMESA 479 01 ED 2002 ADD AMS 5648K AMS 5653F  
 ASTMA 193-01b BBM except 6.3 ASMESA193BBM01ED2002ADexcept6.3 AMS-QQS 763A  
 AMS-S 7720 except .75 maxcopper

CHEMICAL ANALYSIS

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	Co	N
.015	1.87	.028	.023	.63	17.18	10.19	2.03	.48	.12	.06

HB  
162

TENSILE PROPERTIES

TS (PSI)	.2%YS (PSI)	%EL(2")	%RA
85400	38000	62.5	81.3

MACRO ASTM E340/E381  
 MACRO OK  
 OK

**TYPICAL CERTIFICATION**  
 FOR 64802-6-A

CASTLE METALS S.P.  
 12/4/03  
 3433

GRAIN SIZE ASTM E112  
 GRAIN SIZE 5  
 ASTM A 262 PRAC E (A Utilized)  
 OXALIC OK

No mercury or low melting alloy contamination. No weld repair.  
 Heated to 1900F min. and water quenched (heating time & temp appropriate for optimum quality).  
 Intergranular corrosion test (free from cont carbide network) Per ASTM A 262-86 Pt E  
 We certify that the contents of this report are correct and that all operations performed by our company or subcontractors are in compliance with material specifications and the ASME Boiler & Pressure Code, Section III, Subsection NCA-3800, 2001 edition. 02 Addenda  
 Chemical testing performed to one or several of the following ASTM methods: E415, E572, E1019, E1085, E10:  
 Material conforms to listed specifications.  
 Quality system is registered to ISO 9001:2000. Produced in accordance with EN 10204 3.1B.

Results relate only to the items tested. Certification shall not be reproduced except in full, without the written approval of Slater Steels Corporation. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.



**Slater Steels Corporation**

Fort Wayne Specialty Alloys Division  
 2400 Taylor Street West, P.O. Box 630  
 Fort Wayne, Indiana USA 46801  
 Phone: 260-434-2802 Fax: 260-434-2808  
 www.slaterstainless.com

**Product Certification Report**

Report Number: **3709620**

Certified on Nov 26, 2003 Page 2 of 1

Slater Order ID. <b>0320105 001</b>		Order Date <b>10/29/03</b>		Commodity Code <b>3433</b>		Melt Date <b>8/13/03</b>	
Dim 1 <b>5.5000</b>	Dim 2 <b>.0000</b>	Dim 3 <b>.0000</b>	Heat ID. <b>75265</b>	Customer ID. <b>001123</b>	Customer Purchase Order <b>01-77859</b>		
Product Shape <b>Rounds</b>			Product Surface <b>HR &amp; Rough Turned</b>			Customer Grade <b>316/316L</b>	
Length (Inches) <b>132.000 Min. 156.000 Max.</b>			Roll of Lading # <b>306027</b>	Weight			

**Ship To**  
 CASTLE METALS  
 3400 NORTH WOLF ROAD  
 FRANKLIN PARK, IL 60131

**Sold To**  
 CASTLE METALS  
 3400 NORTH WOLF ROAD  
 FRANKLIN PARK, IL 60131

TYPICAL CERTIFICATION  
 FOR 64802-6-A

Results relate only to the items tested. Certification shall not be reproduced except in full, without the written approval of Slater Steels Corporation. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.





# Certificate of Test



\*\*\*\*\*  
\* CERTIFICATION \*  
\*\*\*\*\*

HEAT E31861-1 ORDER 0449205/001 SON 79050A BOL 0122780 TAG 1540266 10/30/03

SHIP TO:  
Marmon / Keystone  
105 Goodrich Drive

Tarrant AL 35217

----- YOUR ORDER & DATE -----  
10-39502 10/30/03 CUST# MARKEY01 CUST TAGNSBR/1./6163

----- ITEM DESCRIPTION -----  
GRADE 316L/316  
Size 316L CPA RND BAR 1 STD  
Ship Condition A  
Country of Origin: BRI  
Country of Origin as defined by NAFTA  
Country of Mfg.: USA

Total Bundles 2 SON Weight 2150

----- SPECIFICATIONS -----  
AMS 5648K, 5653F  
ASME SA479 F01  
ASTM A276 03  
ASTM A484 03A  
ASTM A320 01 B8M CLASS 1  
NACE MR0175-03 (MID RAD)  
PRODEC QUALITY  
WATER QUENCHED  
FREE OF MERCURY CONTAMINATION  
SAB-AMS QQ-9-763  
ASTM A262 02 PRACTICE A/E  
ASTM A479 03  
ASTM E112 96  
ASTM A193 01A B8M CLASS 1D  
FED STD QQ-S-763F  
SOL ANNEALED @ 1900 F MIN. WQ  
NO WELD REPAIR

----- MECHANICAL & OTHER TESTS -----  
Test Condition A  
Hardness as shipped HB 144  
Hardness as tested HB 144  
Hardness as shipped HRB 77  
Hardness as tested HRB 77  
Grain size 7.5  
Tensile strength, KSI (MPa) 91.7 { 632}  
Micro OK  
0.2% Yield Strength, KSI (MPa) 43.9 { 303}  
Intergranular corrosion OK  
Macro OK  
Elongation % in 4D 49.6  
Reduction of area % 74.0

----- CHEMICAL COMPOSITION -----  
Carbon (C) .029  
Phosphorus (P) .023  
Silicon (Si) .333  
Nickel (Ni) 10.570  
Copper (Cu) .307  
Nitrogen (N) .066  
Titanium (Ti) .002  
Tin (Sn) .007  
Manganese (Mn) 1.620  
Sulphur (S) .027  
Chromium (Cr) 17.250  
Cobalt (Co) .269  
Moly (Mo) 2.130  
Columbium (Cb) .008  
Aluminum (Al) .005  
Vanadium (V) .070  
Columbium/ Tantalum (Cb+Ta) .008  
Iron (Fe) Balance  
Melt Practice EAP  
Refining Practice AOD  
De-long Ferrite .0

Knowingly & willfully falsifying or concealing a material act on this form, or making false, fictitious or fraudulent statements or representations herein could constitute a felony punishable under federal statutes.

We hereby certify that the chemical analysis and/or test results shown in this report are correct as contained in the records of the company.

M.P. Marciano, Quality Manager

Q.C. REVIEWED  
DATE 11/3/03  
INITIAL [Signature]

[Signature]

AvestaPolaris, Inc.  
Dist Products  
2013 Crestway Dr  
Tarrant, AL 35217  
CERTIFICATION FOR P/N  
631616-6

SLSPRS:  
OR.REF:

TO:

INIT.:

09/26/2005 From: MARMON/KEYSTONE

M/K OR:  
C.P.O.:C PART:

# CERTIFICATION FOR P/N

64795-6

## NORTH AMERICAN STAINLESS INSPECTION CERTIFICATE



North American Stainless  
6870 Highway 42 East  
Ghent, Kentucky 41045-9615  
Telephone: (502) 347-6000  
FAX: (502) 347-6001

Email: [customerservice@northamericanstainless.com](mailto:customerservice@northamericanstainless.com)

2004 / 5741	DATE	1/13/2004
PACKING LIST # 2004 / 4351	NUMBER	1
GRADE NAS-264 P.O.# :60-39339		
AISI (316L/316) Item Code:		

<b>CUSTOMER</b> HARMON/KEYSTONE- CHICAGO	<b>TOLERANCE</b> ASTM-A-484-00	<b>PRODUCT</b> Round bar, annealed, pickled, cold drawn
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<b>ORDER NUMBER</b> LN01372	<b>MARKS/BOX</b> 72001/BAL2007	<b>CAST NUMS</b> 0143	<b>WEIGHT</b> 2078
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<b>REQUIREMENTS</b> AISI	<b>LENGTH</b> 12.00 ft	<b>SIZE</b> 1.0000 Inches
-----------------------------	---------------------------	------------------------------

MECHANICAL PROPERTIES													
CAST NUM	UTS	YS	EL	RA	Rp0.2	YS	VS	Rp1.0	Z% RA	ELONG	HARDNESS HB	FRESI LENCE J	A% S
0143	99	83	83	68	33	202							000000
Required Values													

<b>SURFACE AND DIMENSION CONTROL</b>	SURFACE AND DIMENSION CONTROL
--------------------------------------	-------------------------------

<b>INTERGRANULAR CORROSION</b>	ASTM-A-262-01 PRACTICE "E" SATISFACTORY
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<b>CHEMICAL COMPOSITION %</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>CAST NUM</th> <th>C</th> <th>P</th> <th>S</th> <th>SI</th> <th>MN</th> <th>NI</th> <th>MO</th> <th>CU</th> <th>N</th> <th>TI</th> <th>CL</th> <th>DB</th> </tr> <tr> <td>0143</td> <td>0200</td> <td>0270</td> <td>0255</td> <td>0370</td> <td>1.3940</td> <td>17.0920</td> <td>10.7120</td> <td>2.0920</td> <td>0.0405</td> <td>0.0050</td> <td>0.3590</td> <td>0.2540</td> </tr> <tr> <td>REQUIRED VALUES</td> <td>0300</td> <td>0450</td> <td>0300</td> <td>1.0000</td> <td>2.0000</td> <td>18.0000</td> <td>10.0000</td> <td>2.0000</td> <td>0.0000</td> <td>0.0000</td> <td>0.0000</td> <td>0.0000</td> </tr> </table>	CAST NUM	C	P	S	SI	MN	NI	MO	CU	N	TI	CL	DB	0143	0200	0270	0255	0370	1.3940	17.0920	10.7120	2.0920	0.0405	0.0050	0.3590	0.2540	REQUIRED VALUES	0300	0450	0300	1.0000	2.0000	18.0000	10.0000	2.0000	0.0000	0.0000	0.0000	0.0000
CAST NUM	C	P	S	SI	MN	NI	MO	CU	N	TI	CL	DB																												
0143	0200	0270	0255	0370	1.3940	17.0920	10.7120	2.0920	0.0405	0.0050	0.3590	0.2540																												
REQUIRED VALUES	0300	0450	0300	1.0000	2.0000	18.0000	10.0000	2.0000	0.0000	0.0000	0.0000	0.0000																												

**OBSERVATIONS**

UNS-S-31600. UNS-S-31603. ASTM A276/06. ASTM A316/07. A304-304 479/01. SAE-A563 E. MIL-5770/02. ASTM A-182-01. ASTM A193/01. CLASS 1. GRADE 304. ASTM A320/01. CLASS 1. GRADE 304. ASME SA312/01. ASME SA312/01. ASME SA312/01. ASME SA 193/01. CLASS 1. GRADE 304. ASTM A564/01. CONTAMINATION. NO WELD REPAIR

QUALITY INSPECTOR

Eric Hess  
 Quality Control Representative

SAR 1. 1.11.03



# CERTIFICATE OF TEST

Page 01 of 02

Certification Date  
16-JUL-2002

**CUSTOMER ORDER NUMBER**

07-15-02

P.O. BOX 49130  
1775 101ST AVENUE NE  
BLAINE MN 55449

Invoice Number  
8075519

**CUSTOMER PART NUMBER**

**SOLD TO:** NEILCO, INC  
10509 NASSAU ST NE  
BLAINE MN 55449

**SHIP TO:** NEILCO INC  
10509 NASSAU STREET NORTHEAST  
BLAINE MN 55449

Description: 316/316L CF ANN BAR  
1-1/4 RD X 12' R/L  
HEAT: D87956A

Line Total: 50.112 LB

ITEM: 525414

Specifications:	AMS 5648	AMS 5653 E	ASTM A276 00A
ASTM A479 00A	ASME SA479 01	ASTM A182 00B	QQ S 763 F
ASME SA 182 01	ASTM A193 B8MCL1 01	ASME SA 320 B8MCL1 00A	AMS QQ S 763
ASME SA 193 B8MCL1 01			ASTM A193 B8MCL1D 00

**CHEMICAL ANALYSIS**

C	P	SI	NI	CU	N	TI	SN
0.027	0.026	0.363	10.45	0.53	0.063	0.038	0.003
CBTA	MN	S	CR	CO	MO	CB	AL
0.003	1.599	0.026	17.29	0.137	2.105	0.009	0.004
CE							
0.013							

RCPT: R265180  
MILL : AVESTA POLARIT

COUNTRY OF ORIGIN : SWEDEN

**MECHANICAL PROPERTIES**

DESCRIPTION	YLD STR KSI	ULT TEN KSI	%ELONG IN 02 IN	%RED IN AREA	HARDNESS BHN
	43.2	90.2	48.5	69.4	178

GRAIN SIZE : 9

**CERTIFICATION FOR P/N**

64800-6

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes.

Material did not come in contact with mercury while in our possession.

STEVE TEIPEL

MANAGER, QUALITY ASSURANCE



**Slater Steels Corporation**

Fort Wayne Specialty Alloys Division  
 2400 Taylor Street West, P.O. Box 690  
 Fort Wayne, Indiana USA 46801  
 Phone: 260-434-2802 Fax: 260-434-2905  
 www.slatersteels.com

**Product Certification Report**

Report Number: **2987180**

Certified on Sep 25, 2002 Page 1 of 1

Slater Order/LD <b>0220357 001</b>		Order Date <b>8/06/02</b>	Commodity Code <b>4964</b>			Ship Date <b>5/27/02</b>
Dim 1 <b>1.2500</b>	Dim 2 <b>.0000</b>	Dim 3 <b>.0000</b>	Heat ID <b>73236</b>	Customer ID <b>001123</b>	Customer Purchase Order <b>01-03934</b>	
Product Shape <b>Cold Drawn Hex</b>		Product Surface <b>Cold Drawn Finish</b>			Customer Grade <b>316/316L</b>	
Length (Inches) <b>132.000 Min. 156.000 Max.</b>		End of Lotting # <b>209901</b>	Weight			

Ship To

CASTLE METALS  
 3400 NORTH WOLF ROAD  
 FRANKLIN PARK, IL 60131

Sold To

CASTLE METALS  
 3400 NORTH WOLF ROAD  
 FRANKLIN PARK, IL 60131

Lot#: 0089

CASTLE G.M.O. COND A	3316-229 Rev 8 DTD 09/19/01	M11s-7720A AH 1(316)ex Cu .75
QQS 763 F	UNS S31600/S31603	ASTMA 182-01 Chem Only
ASTMA 193-01a	ASTMA 276-00a	ASTMA 479-01
ASTMA 484-00	ASMESA182 98ED ChemOnly2000AD	ASMESA 193 98 ED 2000AD
ASMESA 479 98 ED 2000 ADD	AMS 5648J	AMS 5653B
AMS-QQS 763		

**CHEMICAL ANALYSIS**

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	Co	N
.015	1.58	.026	.026	.60	17.44	10.21	2.03	.65	.132	.071

HB

211

**TENSILE PROPERTIES**

TS (PSI)	.2%YS (PSI)	%EL(2")	%RA
94400	67900	48.0	76.4

MACRO ASTM E340/E381.

MACRO

OK

OK

GRAIN SIZE ASTM E112

GRAIN SIZE

5

ASTM A 262 PRAC E (A Utilized)

OXALIC

OK

CASTLE METALS S.P.  
 9/25/02  
 4964

No mercury or low melting alloy contamination. No weld repair.

Heated to 1900F min. and water quenched (heating time & temp appropriate for optimum quality).

Intergranular corrosion test (free from cont carbide network) Per ASTM 262-86 Pr E

We certify that the contents of this report are correct and that all operations performed by our company or subcontractors are in compliance with material specifications and the ASME Boiler & Pressure Code, Section III, Section III, Subsection NCA-3800, 1998 edition, 99 Addenda

Chemical testing performed to one or several of the following ASTM methods: E415, E572, E1019, E1085, E1086.

Material conforms to listed specifications.

Quality system is registered to ISO 9002.

Results relate only to the items tested. Certification shall not be reproduced except in full, without the written approval of Slater Steels Corporation. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

*Dennis Huckett*  
 Dennis Huckett

**CERTIFICATION FOR P/N**

164788-1a Manufactured in accordance with N.A.F.T.A.

TO  
JUMPU

# Certificate of Test



\*\*\*\*\*  
\* CERTIFICATION \*  
\*\*\*\*\*

HRAT G10538 ORDER 0471097/001 SON 16466A BOL 0133110 TAG 1756203 08/24/05

SHIP TO:  
Karla M. Jorgenson Company  
Bar/PL  
10650 Alameda  
Lynwood CA 90262

R504660

YOUR ORDER & DATE  
P794607459 8/24/05 CUST# ENJCOR01 CUST TAG G10509

### ITEM DESCRIPTION

GRADE 17-4  
Size 17-4 CPA RND BAR 1/2 STD Country of Melt: USA  
Ship Condition A Country of Mfg.: USA  
NAFTA Country of Origin is Country of Melt

Total Bundles 1 SON Weight 2194

SPECIFICATIONS  
THE PRODUCTS LISTED ON THIS MILL TEST REPORT SATISFY PREFERENCE CRITERION D AS DEFINED IN ARTICLE 401 OF THE NORTH AMERICAN FREE TRADE AGREEMENT.  
ASME SA564 E01 ASTM A564 O2A TYPE 630  
NO WELD REPAIR FREE OF MERCURY CONTAMINATION  
AMS 2303E AMS 56430  
ASME SA564 E01 ASTM A564 O3A  
ASTM A564 O2A TYPE 630 DIN 50049/EN 10204 3.1B  
MIL-H-6875H ANNEAL 1900F/30MIN/RAPID COOL  
UNS S17400, A1EX 630

### MECHANICAL & OTHER TESTS

Test Condition	H900	Hardness as tested	421 HDW
Hardness as shipped	336 HBW	Hardness as tested	( 45 HRC )
Hardness as shipped	( 36 HRC )	Tensile strength, KSI (MPa)	202.0 (1393)
Grain size	6.0	0.2% Yield Strength, KSI (MPa)	175.0 (1212)
Micro	OK	Elongation % in 4D	15.0
Intergranular corrosion	OK	Reduction of area %	47.6
Macro	OK		
Ferrite	.0		

### CHEMICAL COMPOSITION

Carbon (C)	.028	Manganese (Mn)	.770
Phosphorus (P)	.024	Sulphur (S)	.024
Silicon (Si)	.410	Chromium (Cr)	15.320
Nickel (Ni)	4.230	Cobalt (Co)	.060
Copper (Cu)	3.600	Niobium (Nb)	.210
Nitrogen (N)	.030	Columbium (Cb)	.230
Tin (Sn)	.012	Vanadium (V)	.060
Columbium/			
Tantalum (Cb+Ta)	.230		
Iron (Fe)	Balance		
Frequency	.000	Severity	.000
Hot Practice	RAF		
Refining Practice	AOD		
De-long Ferrite	.0		

Knowingly & willfully falsifying or concealing a material act on this form, or making false, fictitious or fraudulent statements or representations herein could constitute a felony punishable under federal statutes.

We hereby certify that the test results shown in this report are correct and accurate as contained in the records of the company and are in compliance with the specifications, codes, and standards listed above.

H.F. Marciano, Quality Manager

Daiichi Steel Industry, Inc.  
2012 Cranford Place  
Roseland, NJ 07068

CERTIFICATION FOR P/M

64797-8

H.F. Marciano



**Slater Steels Corporation**

Fort Wayne Specialty Alloys Division  
 2400 Taylor Street West, P.O. Box 930  
 Fort Wayne, Indiana USA 46801  
 Phone: 260-434-2892 Fax: 260-434-2908  
 www.slatersteels.com

**Product Certification Report**

Report Number: **3406610**

Certified on May 12, 2003 Page 1 of 1

Slater Order ID. <b>0308274 001</b>		Order Date <b>4/16/03</b>	Commodity Code <b>5005</b>	Melt Date <b>11/27/02</b>	
Dim 1 <b>1.3750</b>	Dim 2 <b>.0000</b>	Dim 3 <b>.0000</b>	Heat ID. <b>74039</b>	Customer ID. <b>001123</b>	Customer Purchase Order <b>01-48908</b>
Product Shape <b>Cold Drawn Hex</b>		Product Surface <b>Cold Drawn Finish</b>			Customer Grade <b>316/316L</b>
Length (Inches) <b>132.000 Min. 156.000 Max.</b>		Bill of Lading # <b>299739</b>	Weight		

**Ship To**  
 CASTLE METALS  
 3400 NORTH WOLF ROAD  
 FRANKLIN PARK, IL 60131

**Sold To**  
 CASTLE METALS  
 3400 NORTH WOLF ROAD  
 FRANKLIN PARK, IL 60131

**Lifts: 0091**

CASTLE C.M.Q. COND A	3316-229 Rev 8 DTD 09/19/01	MILB-7720A AM 1(316)ex Cu .7:
QQS 763 Y	UNS S31600/S31603	ASTMA 182-02 Chem Only
ASTMA 193-01b	ASTMA 276-02a	ASTMA 479-02
ASTMA 484-00	ASMESA182 01ED ChemOnly2002AD	ASMESA 193 01 ED 2002AD
ASMESA 479 01 ED 2002 ADD	AMS 5648K	AMS 5653F
AMS-QQS 763		

**CHEMICAL ANALYSIS**

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	Co	N
.012	1.55	.026	.023	.60	17.35	10.21	2.05	.41	.296	.063

HB  
207

**TENSILE PROPERTIES**

TS (PSI)	.2%YS (PSI)	%EL(2")	%RA
91600	62000	39.6	78.0

**MACRO ASTM E340/E381**

MACRO  
OK  
 GRAIN SIZE ASTM E112  
 GRAIN SIZE  
4

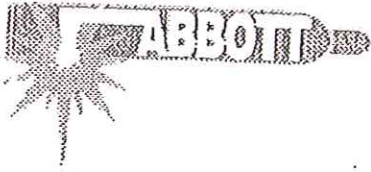
**CERTIFICATION FOR P/N** 60112311  
 604801-60  
 5/13/03  
 5005

**ASTM A 262 PRAC E(A Utilized)**

OXALIC  
OK

No mercury or low melting alloy contamination. No weld repair.  
 Heated to 1900F min. and water quenched (heating time & temp appropriate for optimum quality).  
 Intergranular corrosion test (free from cont carbide network) Per ASTM 262-86 Pr E  
 We certify that the contents of this report are correct and that all operations performed by our company or subcontractors are in compliance with material specifications and the ASME Boiler & Pressure Code. Section III Section III, Subsection NCA-3800, 2001 edition. 02 Addenda  
 Chemical testing performed to one or several of the following ASTM methods: E415, E572, E1019, E1085, E101  
 Material conforms to listed specifications.  
 Quality system is registered to ISO 9002. Produced in accordance with EN 10204 3.1B.

Results relate only to the items tested. Certification shall not be reproduced except in full, without the written approval of Slater Steels Corporation. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law, Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.



## Abbott Welding Supply

509 North First Street, Olean, NY 14760

716-372-4266x109 fax:6959

mike@abbottwelding.com

www.abbottwelding.com

Walt Keller  
Allegheny Bradford Corporation  
P.O. Box 200  
Route 219  
Bradford, PA 16701

Mr. Keller,

This is to certify that the following cylinder of Argon supplied by Abbott Welding Supply will meet the following purity:

Assay	99.998%
Moisture	less than 2 ppm
Oxygen	less than 5 ppm
THC	less than 0.5 ppm

Cylinder Serial # 040-46J-M4

Date 5/12/11

Sincerely,

Mike Higgins, President  
Abbott Welding Supply