

# 53906-2E

<b>MATERIAL CERTIFICATION REPORT and CERTIFICATION OF QUALITY CONFORMANCE</b>  <b>ELECTRALLOY</b> G. O. CARLSON PLATE  <b>175 Main Street</b> <b>OH City PA 16301</b> <b>1 (800) 438-7273</b>	<b>Customer Address</b> <b>COPPER &amp; BRASS SALES</b> <b>WESTERN REGION MATERIALS</b> <b>13338 ORDEN DR., BUILDING H</b> <b>SANTA FE SPRINGS, CA 90670</b>	<b>Shipping Address</b> <b>COPPER &amp; BRASS SALES</b> <b>WESTERN REGION MATERIALS</b> <b>13338 ORDEN DR., BUILDING H</b> <b>SANTA FE SPRINGS, CA 90670</b>	<b>Print Date Time</b> 05-Aug-2013 14:28  <b>Certification ID</b> 150458-1  <b>Customer Order</b> 5400183194-R05	<b>Ship Note</b> 124128   <b>Sales Order</b> 117371
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**Grade:** 316L  
**Specification:** Type 316/316L (UNS S31600/S31603) - ASTM A182/A182M-12b, AMS 5648L, AMS 5653H, ASTM A193/A193M-12b (316), ASTM A320/A320M-11g (316), ASTM A479/A479M-12, ASTM A314-08, ASTM A473-01(2009), ASTM A 276-10/NACE Std-MR0175-03, QQ-S-763F, ASTM A336/A336M-10a, ASME SA-182/SA-182M, ASME SA-336/SA-336M, ASME SA - 320/SA-320M, (316)ASME SA-479/SA-479M, ASTM A4 84/A484M-12, SA-193/A193M 2010 Edition and any additional specifications which may be listed below.  
**Condition:** HOT ROLLED / HOT FORGED, ANNEALED  
**Finish:** PEELED



Sales Order	Quantity	Heat	Lot ID	Weight	Size	Customer Mark
117371-2	1	53906	53906-2C	3,175 LB	Diam: 9.1060 in; Length: 170.1200 in	
117371-2	1	53906	53906-2D	3,210 LB	Diam: 9.1090 in; Length: 171.5000 in	
117371-2	1	53906	53906-2E <i>Heat 2E</i>	3,235 LB	Diam: 9.1110 in; Length: 173.1200 in	

Lot	Test	Result	Low Limit	High Limit	ELONGATION 4D									
<b>SPECIFICATION RESULTS</b>					53906-2C	LT (%)	56.7	45	999					
<b>FINAL LADLE CHEMISTRY FOR AIRMELT</b>					<b>BRINELL</b>									
53906	C	0.018	0.000	0.030	53906-2C	(BHN)	148	140	200					
53906	Mn	1.79	1.25	2.00	<b>GRAIN SIZE</b>									
53906	P	0.029	0.000	0.040	53906-2C	Grain Size TT (GRS)	3.5	0	999					
53906	S	0.022	0.020	0.025	<b>ASTM PRACTICES - ASTM A262</b>									
53906	Si	0.54	0.00	1.00	53906-2C	Prac E LT	PASS							
53906	Cr	16.30 ✓	16.00	18.00	<i>OK WITH 4/16/14</i>									
53906	NI	10.25 ✓	10.00	14.00										
53906	Mo	2.10 ✓	2.00	3.00										
53906	Cu	0.49	0.00	0.75										
53906	N	0.031	0.000	0.100										
53906	Co	0.16	0.00	0.20										
<b>PASS / FAIL TESTS</b>														
53906-2C	Carb Net	PASS												
53906-2C	Macro Etch	PASS												
<b>REDUCTION AREA</b>														
53906-2C	LT (%)	79.5	50	999										
<b>TENSILE</b>														
53906-2C	LT (PSI)	87600	75000	400000										
<b>.2% YIELD OFFSET</b>														
53906-2C	LT (PSI)	45000	30000	400000										

The recording of false, fictitious, or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute.  
 The above are true and correct results of tests on samples of the material. Results conform to the specification(s) listed above and are on record.  
 At time of shipment, items and/or material produced under this order have not come into contact with Mercury or its compounds.

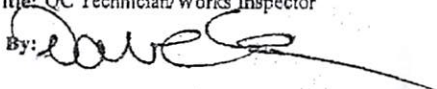
From: Copper and Brass Sales CA  
 Cust. NEXXA INDUSTRIES LTD. Del.: 2403097444  
 CstAr CstOr 78566  
 Wgt.: 1,090.195 LB Date 04/16/2014

*John R. Zambetti*

MATERIAL CERTIFICATION REPORT and CERTIFICATION OF QUALITY CONFORMANCE		Customer Address	Shipping Address	Print Date Time	Ship Note
 ELECTRALLOY G. O. CARLSON PLATE	 175 Main Street OH City PA 16301 1 (708) 454-7273	COPPER & BRASS SALES	COPPER & BRASS SALES	05-Aug-2013 14:28	124128
		WESTERN REGION MATERIALS 13338 ORDEN DR., BUILDING H SANTA FE SPRINGS, CA 90670	WESTERN REGION MATERIALS 13338 ORDENDR., BUILDING H SANTA FE SPRINGS, CA 90670	<b>Certification ID</b> 150458-1	<b>Customer Order</b> 5400185194-R05

**Quality Statements:**  
 ASTM E1019-08, ASTM E572-02a (2006)e2 and ASTM E1086-08 are methods used to determine the chemical analysis for Fe Base (High Alloy) alloys utilizing XRF, OES and Combustion and Fusion Methods.  
 All items are in full compliance with all purchase order and specification requirements.  
 At time of shipment, items and/or material produced under this order have not come in contact with Mercury or its compounds.  
 Compliant with DFARS 232.225-7014 Alt. 1. Preference for Domestic Specialty Metals  
 Heat #53906-2C qualifies 2D, 2E.  
 Material Certification conforms to Certificate 3.1 as in EN 10204:2010  
 The mechanical tests have been performed at Modera Industries, Materials Research Division located at 613 West 11th Street Erie, PA 16512-0399  
 Material represented was not weld repaired.  
 Material represented was produced in accordance with the Electralloy Quality Control Program dated 11/14/2012, which meets the requirements of AS9100C ISO9001(2008), MIL-I-45208A including Amendment 1 and 2, ASME Code Section 3, Subsection NCA 3300.  
 Material represented was solution annealed at 1925 degrees F +/-25 degrees F, held 30 minutes per inch of thickness and water quenched.  
 Material was not exposed to Radium or other radioactive materials while at our facility.  
 Method of Manufacture - Electric Arc Furnace Melt AOD Refined  
 Material represented was melted and manufactured in the USA

Meets EU Electrical "RoHS". Contains NO "WEEE" relevant substances. Complies with DFARS-225.1-Buy American Act-Supplies. HWRR = Minimum Hot Working Reduction Ratio.  
 Electralloy only accepts residual and trace elements in the limits invoked by the specification and or customer. This document shall not be reproduced, except in full, without the written approval of Electralloy / GOC Plate. We hereby affirm that the reported results on this certification are correct and accurate. All tests and results and operations performed by (Electralloy/G.O. Carlson Plate) or its subcontractors are in compliance with the applicable material/customer specification(s).  
 The parties agree that when title transfers for the products subject to this agreement, or when the products are delivered to purchaser, whichever occurs first, responsibility for the submission of any required export or re-export licenses or related export control approvals for these products also transfers to purchaser. Any export license requirement under any applicable export control statute, regulation, or practice, from any U.S. government agency, including but not limited to the Department of Commerce's Bureau of Industry and Security, the Department of Treasury, Office of Foreign Assets Control, the U.S. Department of State, Directorate of Defense Trade Controls, and the Nuclear Regulatory Commission, are solely the responsibility of the purchaser. Further, purchaser warrants that it will comply with all applicable export and re-export controls related to these products.  
 The recording of false, fictitious, or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute.  
 The above are true and correct results of tests on samples of the material. Results conform to the specification(s) listed above and are on record.  
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Name: David A. Fulkerson  
 Title: QC Technician/Works Inspector  
 By: 

Page 2 of 2

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