

53906-2D

Copy

25 pcs

MATERIAL CERTIFICATION REPORT and CERTIFICATION OF QUALITY CONFORMANCE



ELECTRALLOY
G. O. CARLSON PLATE



175 Main Street
Oil City PA 16301
1 (800) 458-7273

Customer Address

COPPER & BRASS SALES
WESTERN REGION MATERIALS
13338 ORDEN DR., BUILDING H
SANTA FE SPRINGS, CA 90670

Shipping Address

COPPER & BRASS SALES
WESTERN REGION MATERIALS
13338 ORDEN DR., BUILDING H
SANTA FE SPRINGS, CA 90670

Print Date Time

05-Aug-2013 14:28
Certification ID

Ship Note

124128

Customer Order

5400185194-R05

Sales Order

117371

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-11a (316), ASTM A479/A479M-12, ASTM A314-08, ASTM A473-01(2009), ASTM A 276- 10/NACE S16-MR0175-03, IQ-S-763F, ASTM A336/A336M-10a, ASME SA-182/SA-182M, ASME SA-336/SA-336M, ASME SA - 320/SA-320 M, (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	3,234 LB	Diam: 9.1110 in; Length: 173.1200 in	

Lot	Test	Result	Low Limit	High Limit
SPECIFICATION RESULTS				
FINAL ANALY CHEMISTRY FOR AIRMELT				
53906	C	0.010	0.000	0.030
53906	Mn	1.79	1.25	2.00
53906	P	0.029	0.000	0.040
53906	S	0.022	0.020	0.025
53906	Si	0.54	0.00	1.00
53906	Cr	16.50	15.00	18.00
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	0.091	0.000	0.100
53906	Co	0.16	0.00	0.20
PASS / FAIL TESTS				
53906-2C	Carb Net	PASS		
53906-2C	Macro Etch	PASS		
REDUCTION AREA				
53906-2C	LT (%)	79.5	50	999
TENSILE				
53906-2C	LT (PSI)	87600	75000	400000
.2% YIELD OFFSET				
53906-2C	LT (PSI)	85000	30000	400000

ELONGATION 4D			
53906-2C	LT (%)	86.7	45
BRINELL			
53906-2C	(BHN)	148	140
GRAIN SIZE			
53906-2C	Grain Size TT (GRS)	3.5	0
ASME PRACTICES - ASTM A262			
53906-2C	Prac E LT	PASS	

OK
with
2/11/14

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 this 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:

Cust.:

Del.: 2402945088

CstAr:

CstOr 78443

Wgt.: 510.390 LB

Date 02/05/2014

John R. Zambetti

Copy
11/15

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CERTIFICATION OF QUALITY CONFORMANCE



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Quality Statements:

ASTM E1019-08, ASTM E572-02a (2006)e2 and ASTM E1036-08 are methods used to determine the chemical analysis for Fe Base (High Alloy) alloys utilizing XRF, QES 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 252.225-7014 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 Modern 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 3800.

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 to 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).

Name: David A. Fulkerson

Title: QC Technician/Works Inspector

By:

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 license 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.

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