



ELECTRALLOY

175 Main Street
Oil City, PA 16301
PHONE: 814-678-4200
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**MATERIAL CERTIFICATION
REPORT and CERTIFICATE
OF QUALITY CONFORMANCE**

43488

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<u>CUSTOMER NAME AND ADDRESS</u> Copper & Brass Sales Accounts Payable 22355 West 11 Mile Road Southfield, MI 48034-4735		<u>CUSTOMER ORDER NO.</u> CM8066 <u>IDENTIFICATION</u> Heat No. 43488 P/N: 399456
<u>PRODUCT DESCRIPTION</u>	SPEED-E-MAC, Stainless Steel Bar, electric arc furnace melted, A.O.D. refined, hot forged, solution annealed, water quenched, bar peeled, with saw cut square ends.	

SPECIFICATIONS

Type 316/316L(UNS S31600/S31603) - ASTM A182/A182M-04, AMS 5648K, AMS 5653F
 ASTM A193/A193M-04a, (316), ASTM A320/A320M-03 (316), ASTM A479/A479M-04
 ASTM A314-97, ASTM A473-01, ASTM A276-04a, NACE Std-MR0175-99, QQ-S-763F,
 ASTM A336/A336M-03a1, ASME SA-182/SA-182M, ASME SA-336/SA-336M, ASME SA-320/SA-320M02, (316) ASME SA-479/SA-479M, A484/A484M-03a, (All July, 1, on Edition) and any additional specifications which may be listed below.

CHEMICAL ANALYSIS

Heat Number	C	MN	P	S	SI	CR	NI	MO
43488	0.014	1.77	0.024	0.022	0.53	16.30	10.19	2.09
	CU	N	CO					
	0.41	0.088	0.17					

ITEM DESCRIPTION

Heat Number	HWRR	Quantity & Weight	Size
43488-3A		1 Bar - 6,040 Pounds.	Nom. 13"Rd. x 155.93"lg.

TENSILE PROPERTIES

Heat Number	Test Dir	Test Loc	Tensile (PSI)	.2% Yield (PSI)	Reduction (%)	Elong 4D (%)
43488-3A	LT	TOP	86990	42330	77.8	52.7

BRINELL/ROCKWELL

Heat Number	Test Loc	Brinell
43488-3A	TOP	148

PASS/FAIL TESTS

Heat Number	Carb Net	Macro Etch						
43488-3A	P	P						

Note: 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.

By: David A. Fulkerson Date: 12/13/0

HWRR = Minimum Hot Working Reduction Ratio.

Name: David A. Fulkerson

Title: Quality Control Technician

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39057-06

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ASTM PRACTICES (Normal)

Heat Number	Prac E					
	TT	LT				
43488-3A	P					

OTHER TESTS

Heat Number	Grain Size					
	TT	LT				
43488-3A	4.5					

STATEMENTS

Material represented was melted and manufactured in the USA

At time of shipment, items and/or material produced under this order have not come in contact with mercury or its compounds.

Material represented was not weld repaired.

Material represented was solution annealed at 1925 deg. F +/- 25 deg. F held 30 minutes per inch of thickness and water quenched

Material represented was produced in accordance with the Electralloy Quality Control Program dated 09/26/2006, which meets the requirements of ISO9001(2000), MIL-I-45208A and ASME Code Section 3, Subsection NCA 3800

COPPER AND BRASS

COMMENTS

Part 399456-3 Material is RoHS compliant	SOLD TO _____ DATE _____ QTY. _____ CUSTOMER PO: _____ SHIPPER NO: _____ BY: _____
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By David A. Fulkerson Date: 12/13/06

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Name : David A. FulkersonTitle: Quality Control Technician