

40169-07



ELECTRALLOY
 175 Main Street
 Oil City, PA 16301
 PHONE: 814-878-4200
 Fax: 814-878-4148

**MATERIAL CERTIFICATION
 REPORT and CERTIFICATE
 OF QUALITY CONFORMANCE**

44509

This document shall not be reproduced, except in full, without the written approval of Electralloy

CUSTOMER NAME AND ADDRESS Copper & Brass Sales Accounts Payable 22355 West 11 Mile Road Southfield, MI 48034-4735		CUSTOMER ORDER NO. W57793 IDENTIFICATION Heat #44509
PRODUCT DESCRIPTION	Stainless steel bar, electric arc furnace melted, A.O.D. refined, press 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-06a, (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, ASTM A484/A484M-06B, ASTM SA-193/SA-193M-94 and any additional specifications which may be listed below.

CHEMICAL ANALYSIS

Heat Number	C	MN	P	S	SI	CR	NI	MO
44509	0.017	1.81	0.027	0.022	0.49	16.55	10.17	2.14
	CU	N	CO					
	0.42	0.078	0.16					

ITEM DESCRIPTION

Heat Number	HWRR	Quantity & Weight	Size
44509-3C		1 Bar - 3,220 Lbs	Nom 15" Rd x 63.12" Lg

TENSILE PROPERTIES

Heat Number	Test Dir	Test Loc	Tensile (PSI)	.2% Yield (PSI)	Reduction (%)	Elong 4D (%)
44509-3C	LT	TOP	80570	39710	61.0	50.0

BRINELL/ROCKWELL

Heat Number	Test Loc	Brinell
44509-3C	TOP	137

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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.

meets EU Electrical "RoHS". Contains NO "WEEE" relevant substances.

Complies with DFARS-225.1-Buy American Act-Supplies
 BY David A. Fulkerson Date: 07/06/07
 R = Minimum Hot Working Reduction Ratio.
 Name : David A. Fulkerson
 Title: QC Technician/Works Inspector

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PASS/FAIL TESTS

Heat Number	Carb Net	Macro Etch							
44509-3C	P	P							

ASTM PRACTICES (Normal)

Heat Number	Prac E						
	TT	LT					
44509-3C	P						

OTHER TESTS

Heat Number	Grain Size					
	TT	LT				
44509-3C	3.0					

ITEM DESCRIPTION

Heat Number	HWRR	Quantity & Weight	Size
44509-3C-1		1 Bar - 2,360 Lbs	Nom 15" Rd x 46.31" Lg

TENSILE PROPERTIES

Heat Number	Test Dir	Test Loc	Tensile (PSI)	.2% Yield (PSI)	Reduction (%)	Elong 4D (%)
44509-3C-1	LT	TOP	80570	39710	61.0	50.0

BRINELL/ROCKWELL

Heat Number	Test Loc	Brinell	
44509-3C-1	TOP	137	

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By David A. Fulkerson Date: 07/06/07

MR = Minimum Hot Working Reduction Ratio. Name : David A. Fulkerson

Title: QC Technician/Works Inspector

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 bar peeled, with saw cut square ends

PASS/FAIL TESTS

Heat Number	Carb	Macro							
	Net	Etch							
44509-3C-1	P	P							

ASTM PRACTICES (Normal)

Heat Number	Prac E							
	TT	LT						
44509-3C-1	P							

OTHER TESTS

Heat Number	Grain Size						
	TT	LT					
44509-3C-1	3.0						

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

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RR = Minimum Hot
 Working Reduction
 Ratio.

By David A. Fulkerson Date: 07/06/07

Name : David A. Fulkerson

Title: QC Technician/Works Inspector

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IDENTIFICATION Heat #44509

PRODUCT DESCRIPTION Stainless steel bar, electric arc furnace melted, A.O.D.
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bar peeled, with saw cut square ends

STATEMENTS

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

ASTM E1019-03, ASTM E572-02a, and ASTM E1086-94, are the methods
used to determine the chemical analysis for Fe base (high alloy),
Ni base and Cu base alloys.

COMMENTS

Material UT to Electralloy practice WU1001 - PASS

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