

46626

46626 1-08



ELECTRALLOY
175 Main Street
Oil City, PA 16301
PHONE: 814-678-1200
Fax: 814-678-4146

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

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| | |
|----------------------------------|-----------------------------|
| <u>CUSTOMER NAME AND ADDRESS</u> | CUSTOMER ORDER NO. 649695 |
| | IDENTIFICATION Heat # 46626 |

PRODUCT DESCRIPTION Stainless Steel Bar, electric arc furnace melted, A.O.D. refined forged, solution annealed and water quenched, bar peeled with saw cut square ends.

SPECIFICATIONS

Type 316/316L (UNS S31600/S31603) - ASTM A182/A182M-06, AMS 5648K, AMS 5653F
 ASTM A193/A193M-06a, (316), ASTM A320/A320M-05a (316), ASTM A479/A479M-06a
 ASTM A314-97, ASTM A473-01, ASTM A276-06, NACE MRO175/ISO 15156-3:2003E,
 ASTM A336/A336M-06a, 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, QQ-S-763F and any specifications which may be listed below.

CHEMICAL ANALYSIS

| Heat Number | C | MN | P | S | SI | CR | NI | MO |
|-------------|-------|-------|-------|-------|------|-------|-------|------|
| 46626 | 0.016 | 1.79 | 0.014 | 0.020 | 0.50 | 16.37 | 10.28 | 2.08 |
| | CU | N | CO | | | | | |
| | 0.11 | 0.085 | 0.04 | | | | | |

ITEM DESCRIPTION

| Heat Number | HWRR | Quantity & Weight | Size |
|-------------|------|--------------------|-----------------------|
| 46626-6A | | 1 Bar - 7,110 Lbs. | 13" Rd. x 183.00" Lg. |

TENSILE PROPERTIES

| Heat Number | Test Dir | Test Loc | Tensile (PSI) | .2% Yield (PSI) | Reduction (%) | Elong 4D (%) |
|-------------|----------|----------|---------------|-----------------|---------------|--------------|
| 46626-6A | LT | TOP | 88130 | 42990 | 72.5 | 52.7 |

BRINELL/ROCKWELL

| Heat Number | Test Loc | Brinell |
|-------------|----------|---------|
| 46626-6A | TOP | 156 |

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.

Meets EU Electrical "RoHS".
 Contains NO "WEEE" relevant substances.
 Complies with DFARS-225.1-Buy American Act-Supplies.

By : William A. Deets Date: 09/05/08
 RR = Minimum Hot Working Reduction Ratio.
 Name : William A. Deets
 Title: QC Technician/Works Inspector



ELECTRALLOY
 175 Main Street
 Oil City, PA 16301
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CUSTOMER ORDER NO. 649695

IDENTIFICATION

Heat # 46626

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PASS/FAIL TESTS

| Heat Number | Carb Net | Macro Etch | | | | | | | |
|-------------|----------|------------|--|--|--|--|--|--|--|
| 46626-6A | P | P | | | | | | | |

ASTM PRACTICES (Normal)

| Heat Number | Prac E | | | | | | |
|-------------|--------|----|--|--|--|--|--|
| | TT | LT | | | | | |
| 46626-6A | P | | | | | | |

OTHER TESTS

| Heat Number | Grain Size | | | | | |
|-------------|------------|----|--|--|--|--|
| | TT | LT | | | | |
| 46626-6A | 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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Ratio = Minimum Hot Working Reduction Ratio.

BY : William A. Deets

Date: 09/05/08

Name : William A. Deets

Title: QC Technician/Works Inspector



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|--|---|
| <p><u>CUSTOMER NAME AND ADDRESS</u> Ryerson Canada, Inc. 161 The West Mall Etobeccke, Ontario M9C 4V8 Canada</p> | <p>CUSTOMER ORDER NO. 649695 IDENTIFICATION Heat # 46626</p> |
|--|---|

PRODUCT DESCRIPTION Stainless Steel Bar, electric arc furnace melted, A.O.D. refined forged, solution annealed and water quenched, 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.

Material Certification conforms to Certificate 3.1 as in EN 10204.

COMMENTS

Speed-E-Mac.
 Modern Ind Inc. 613 W 11th St. Erie, Pa. 16512.
 Product # 7164-3997.

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