

RA PO 77894 WO 5918 CPA 3 TBR 40

190*

OUTOKUMPU

Certificate of Test E130083

HEAT E130083

ORDER 639437/ 11 BOL 0221792 * CERTIFICATION * 04/03/13

SHIP TO:
ROLLED ALLOYS /PH#310.343.6000
291 CORAL CIRCLE DRIVE

EL SEGUNDO 902450000

ok
5/31/13

----- YOUR ORDER & DATE -----
L05823 4/03/13 CUST# 0773001 CUST TAG#635045100001-11

----- ITEM DESCRIPTION -----
GRADE 316L/316 Ship Condition CONDA
Size 316L RND CFA CONDA 3.2500 x 144.000 RL
Country of Melt: UNITED KINGDOM Country of Mfg.: UNITED STATES
NAFTA Country of Origin is Country of Melt

No weld repair
Free of mercury contamination, Free of radiation contamination
No WEEE relevant substances; Meets EU electrical ROHS

Total Bundles 1 Total Weight 2264


WO 2039880 Bundles: 1E

----- SPECIFICATIONS -----
MFG TO FINISHED BAR IN THE USA FROM BILLETS IMPORTED UNITED KINGDOM
AMS 5648L, 5653H SAE AMS-QQ-S-763B
ASME SA182 E07-E10, Add. 11a ASME SA193 E10 A11a
ASME SA479 E07-E10 A11 ASME SA320 B8M CL1 E10 A11a
ASTM A182 12 ASTM A262 10 Practice A/E
ASTM A276 10 ASTM A314 97
ASTM A479/A479M 12 ASTM A484 12
ASTM A320 11 B8M Class 1 ASTM A193 12b B8M
NACE MR0175-09, ISO 15156:09 DFARS 252.225.7009 10/4/11
Federal Spec QQ-S-763F UNS S31600, AISI 316
UNS S31603, AISI 316L Prodec Quality
EN 10204 Type 3.1 Document RA-53 RAM 316L
EN 10272 GR 1.4404 chemistry Butech BU-36 Rev 2
Process Annealed 1900Fmin/WQ NACE MR0175-09, ISO 15156:09
NACE MR0103-10 Bars are Eddy Current tested

----- MECHANICAL & OTHER TESTS -----
Hardness as shipped 163 HB
Hardness as shipped (83 HRB)
Grain size 6.0 Tensile strength, KSI (MPa) 87.5 (603)
Micro OK 0.2% Yield Strngth, KSI (MPa) 37.3 (257)
Intergranular corrosion OK
Elongation % in 4D 59.0
Reduction of area % 77.0

----- CHEMICAL COMPOSITION -----
Carbon (C) .019 Manganese (Mn) 1.700
Phosphorus (P) .036 Sulphur (S) .025
Silicon (Si) .380 Chromium (Cr) 16.620 ✓
Nickel (Ni) 10.050 ✓ Cobalt (Co) .177
Copper (Cu) .420 Moly (Mo) 2.050 ✓
Nitrogen (N) .077 Columbium (Cb) .008
Titanium (Ti) .002 Aluminum (Al) .003
Tin (Sn) .008 Boron (B) .001
Tantalum (Ta) .003 Vanadium (V) .050
Tungstem (W) .059 .000
Columbium/
Tantalum (Cb+Ta) .011
Iron (Fe) Balance
Melt Practice EAF
Refining Practice AOD
De-long Ferrite

ROLLED ALLOYS QUALITY ASSURANCE
R. Bura
APR 09 2013

HEAT# E130083

TRACER# 286426

SV
WC

Knowingly & willfully falsifying or concealing a material act on this form, or making false, fictitious or fraudulent statements or representations herein could constitute a felony punishable under federal statutes. We hereby certify that the test results shown in this report are correct and accurate as contained in the records of the company and are in compliance with the specifications, codes, and standards listed above.

Outokumpu Stainless Bar, Inc.
3043 Crenshaw Pkwy.
Richburg, SC 29729

M.F. Marcanio, Quality Manager

M.F. Marcanio

RE: [Illegible text]

DATE: [Illegible]
TO: [Illegible]
FROM: [Illegible]

[Illegible text]

[Illegible stamp]

[Illegible stamp]

DESCRIPTION OF WORK

[Illegible text]

[Illegible text]

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[Illegible text]

[Illegible text]

[Illegible text]

[Illegible text]

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10/10/68

COMMUNICATIONS SECTION

F130083



CERTIFICATE OF CONFORMANCE

Customer: ROLLED ALLOYS-CANADA, INC. Date: 05/28/2013 PAGE 1 of 1

Customer PO# 77894

RA #: L62835

We certify that the material supplied by Rolled Alloys on the above referenced purchase order was processed in accordance with the quality assurance program and procedures approved under our ISO 9001:2008/AS9100 Rev C Certificate. Our records indicate that the material(s) and test report(s) meet the requirements of the purchase order and applicable specifications. The material test reports comply with the requirements of EN 10204:2004 paragraph 4.1, for a Type 3.1 inspection certificate. The materials supplied with this order were produced without known contact to mercury.

Heat - Tracer#

E130083 - 286426

3-1/4" DIA CF PRODEC 316/316L

Description

High quality standards are supported by our ISO 9001:2008/AS9100 Rev C Certification

Adam Schwartz, RA Quality Assurance

SV
MC