

Certificate of Test

4 pcs
(2 ea.)

C+B PO 78253 WO 6002/3 CPA 4 FOE65 40/80

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HEAT E130643 ORDER 639692/ 01 BOL 0223738 * CERTIFICATION * 08/09/13

SHIP TO:
COPPER & BRASS
9451 45 AVE NW

EDMONTON, AB T6E 6B 000000000

E 130643

----- YOUR ORDER & DATE -----
5400179636 8/09/13 CUST# 0316001 CUST TAG#SSRD00372

----- ITEM DESCRIPTION -----
GRADE 316L/316 Ship Condition CONDA
Size 316L RND HRART CONDA 6.2500 x 144.000 RL
Country of Melt: UNITED KINGDOM Country of Mfg.: SWEDEN
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 1415

WO 2041539 Bundles: 1EA

----- SPECIFICATIONS -----
AMS 5648L, 5653H SAE AMS-QQ-S-763B
ASME SA479 E07-E10 A11 ASTM A182 13
ASTM A262 10 Practice A/E ASTM A276 13
ASTM A479/A479M 13 ASTM A484 13
ASTM E112 96 ASTM A320 11 B8M Class 1
ASTM A193 12b B8M DIN 50049/EN 10204 Type 3.1
DFARS 252.225.7009 10/4/11 Federal Spec QQ-S-763F
Copper & Brass 316L MAXX NACE MR0175-09, mid-rad hard

ok
WTA
11/2/13

----- MECHANICAL & OTHER TESTS -----
Hardness as shipped (148 HB)
Hardness as shipped 78 HRB
Grain size 5.5 Tensile strength, KSI (MPa) 84.1 (580)
Micro OK 0.2% Yield Strngth, KSI (MPa) 36.8 (254)
Intergranular corrosion OK
Elongation % in 4D 56.0
Reduction of area % 75.0

----- CHEMICAL COMPOSITION -----
Carbon (C) .015 Manganese (Mn) 1.630
Phosphorus (P) .034 Sulphur (S) .025
Silicon (Si) .260 Chromium (Cr) 17.210 ✓
Nickel (Ni) 10.080 ✓ Cobalt (Co) .299
Copper (Cu) .450 Moly (Mo) 2.060 ✓
Nitrogen (N) .075 Columbium (Cb) .010
Titanium (Ti) .002 Aluminum (Al) .004
Tin (Sn) .008 Boron (B) .001
Tantalum (Ta) .007 Vanadium (V) .060
Tungstem (W) .100 .000
Columbium/
Tantalum (Cb+Ta) .017
Iron (Fe) Balance
Melt Practice EAF
Refining Practice AOD
De-long Ferrite

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.

M.F. Marcanio, Quality Manager

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

M.F. Marcanio

From: Copper and Brass Sales CA

Cust. NEXXA INDUSTRIES LTD.

Del.: 2402802549

CstAr

CstOr 78253

Wgt.: 61.000 LB

Date 11/08/2013

SV
me

John L. Zambetti