



Certificate of Test

HT#E170807

PRODEC QUALITY

Page: 1

HEAT E170807 ORDER 674006/ 01 BOL 0240226 * CERTIFICATION * 07/31/17

SHIP TO:
COPPER AND BRASS SALES
8001 THYSSENKRUPP PARKWAY

NORTHWOOD 436190000

----- YOUR ORDER & DATE -----
5400350004 4/26/17 CUST# 0316001 CUST TAG#SSRD00372

----- ITEM DESCRIPTION -----
GRADE 316L/316 PRODEC QUALITY 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 2535 Approx. Hot Red. Ratio 5:1

WO 2076771 Bundles: 1F

----- SPECIFICATIONS -----
AMS 5648M, 5653H SAE AMS-QQ-S-763D
ASME SA479 2007-2015 Ed. ASTM A182/A182M 16a
ASTM A262 15 Practice A/E ASTM A276-17
ASTM A479/A479M 17 ASTM A484 16
ASTM E112 96 ASTM A320 17a B8M Class 1
ASTM A193 16 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
NACE MR0103-10 UNS S31600, AISI 316
UNS S31603, AISI 316L

----- MECHANICAL & OTHER TESTS -----
Hardness as shipped (150 HB)
Hardness as shipped 79 HRB
Grain size 6.0 Tensile strength, KSI (MPa) 85.1 (587)
Micro OK 0.2% Yield Strength, KSI (MPa) 37.4 (258)
Intergranular corrosion OK
Elongation % in 4D 57.0
Reduction of area % 75.0

----- CHEMICAL COMPOSITION -----
Carbon (C) .019 Manganese (Mn) 1.650
Phosphorus (P) .029 Sulphur (S) .025
Silicon (Si) .460 Chromium (Cr) 16.790
Nickel (Ni) 10.050 Cobalt (Co) .242
Copper (Cu) .500 Moly (Mo) 2.030
Nitrogen (N) .082
Iron (Fe) Balance
Melt Practice EAF
Refining Practice AOD
De-long Ferrite 1.5

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

Jan 18/18

Outokumpu Stainless Bar, LLC
3043 Crenshaw Pkwy
Richburg, SC 29729

M.F. Marcanio

From: TK Materials CA, Ltd.

Cust. NEXXA INDUSTRIES LTD

Del.: 2405661731

CstAr

CstOr 80198

Wgt.: 2,535 LB

Date 01/08/2018

Thomas Sanchez