



Certificate of Test



* CERTIFICATION *

510650

HEAT 510650 ORDER 0480872/001 SON D43512 BOL 0139343 TAG 1811874 09/30/06

SHIP TO:
COPPER AND BRASS SALES
10648 WEST LITTLE YORK
SUITE 400
HOUSTON TX 77041

----- YOUR ORDER & DATE -----
CK5042 9/30/06 CUST# COPBRA01 CUST TAG#399371-4

----- ITEM DESCRIPTION -----
GRADE 316L/316
Size 316L HRART RND BAR 4 STD Country of Melt: BRI
Ship Condition A Country of Mfg.: SWE
NAFTA Country of Origin is Country of Melt
Total Bundles 2 SON Weight 6341

----- SPECIFICATIONS -----
AMS 5648K, 5653F ASME SA479 E04 A06
ASTM A182-05A CHEMISTRY ASTM A262 02A PRACTICE A/E
ASTM A276 05A ASTM A479 06
ASTM A464 06A ASTM E112 96
DIN 50049/EN 10204 3.1B DFARS 252.225.7014 6/05
SOLUTION ANNEALED CONDITION FREE OF CONT. CARBIDE NETWORK
NO WELD REPAIR FREE OF MERCURY CONTAMINATION

----- MECHANICAL & OTHER TESTS -----
Test Condition A
Hardness as shipped (143 HBW)
Hardness as shipped 77 HRBS
Grain size 6.0 Tensile strength, KSI (MPa) 87.6 (604)
Micro OK 0.2% Yield Strngth, KSI (MPa) 42.3 (292)
Intergranular corrosion OK
Macro OK Elongation % in 4D 58.0
Reduction of area % 75.0

----- CHEMICAL COMPOSITION -----
Carbon (C) .023 Mangarese (Mn) 1.660
Phosphorus (P) .029 Sulphur (S) .027
Silicon (Si) .430 Chromium (Cr) 16.530
Nickel (Ni) 10.180 Cobalt (Co) .077
Copper (Cu) .310 Moly (Mo) 2.040
Nitrogen (N) .066 Aluminum (Al) .003
Tin (Sn) .005 Vanadium (V) .037
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