

**OUTO
KUMPU**

Certificate of Analysis and Tests

844185-1AA

OUR ORDER 0263329 - 01 HEAT & PIECE 844185-1AA 04/17/08

SOLD TO: COPPER & BRASS SALES
PO BOX 5116
SOUTHFIELD MI 48086

SHIP TO: COPPER & BRASS SALES
PO BOX 5116
SOUTHFIELD MI 48086

----- YOUR ORDER & DATE -----
CW5263 11/27/06 TAG# 412909-4

----- ITEM DESCRIPTION -----
HEAT & PIECE 844185 - 1AA
WEIGHT 6062
FINISH 1
GRADE 316LP UNS-S31603
DIMENSIONS 3.000 X 48.000 X 144.000 EXACT

----- SPECIFICATIONS -----
*** MFG IN NEW CASTLE, IN, USA FROM SLABS IMPORTED FROM BRITAIN
AMS 5507F EXCEPT LINE MARK ASTM A240-07 ASME SA240 07ED
ASTM A480-06B ASME SA480 07E AVESTA MACH TEST PER SP020
MEETS EU ELECTRICAL ROHS NO WEEE RELEVANT SUBSTANCES
NO GRIPPER MARKS NO WELD REPAIRS
ASTM A262-02A PRACTICE A ASTM A262-02A PRACTICE E
PRODEC QUALITY

PLATES & TEST PCS SOLUTION ANNEALED @ 1950 DEGREES FAHRENHEIT MINIMUM.
THEN WATER COOLED OR RAPIDLY COOLED BY AIR
FREE FROM MERCURY CONTAMINATION AT CURRENT DETECTION LIMITS
HOT ROLLED, ANNEALED & PICKLED (HRAP)

----- MECHANICAL & OTHER TESTS -----
HARDNESS RB 77
GRAIN SIZE 4
YIELD STRENGTH (PSI) 37452
TENSILE STRENGTH (PSI) 83520
INTERGRANULAR CORROSION OK
ELONGATION % IN 2" 53.8
REDUCTION OF AREA % 65.3

----- CHEMICAL COMPOSITION -----
CARBON (C) .018
MANGANESE (MN) 1.40
PHOSPHORUS (P) .032
SULFUR (S) .023
SILICON (SI) .54
CHROMIUM (CR) 16.72
NICKEL (NI) 10.12
COBALT (CO) .27
COPPER (CU) .53
MOLY (MO) 2.03
NITROGEN (N) .05
COLUMBIUM (CB) .016
TITANIUM (TI) .002
ALUMINUM (AL) .004
TIN (SN) .012
TANTALUM (TA) .003



WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH THE LISTED SPECIFICATION(S) AND THAT THE RESULTS OF ALL TESTS ARE ACCEPTABLE.

JAMES DOUBMAN, QUALITY ASSURANCE MANAGER

CERTIFICATE IN CONFORMANCE WITH EN10204-95 3.1.B/EN10204-2004 3.1

James Douberman

Outokumpu Stainless Plate, Inc.
P.O. Box 370
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Daniel Houston

S/O# 9314