

848013-2A

Outokumpu Stainless Plate, Inc.

OUTOKUMPU

Certificate of Analysis and Tests

OUR ORDER 0269965 - 01

HEAT & PIECE 848013-2A 11/19/09

SOLD TO:

SHIP TO:

217567 / 147979 / 1

----- YOUR ORDER & DATE -----
 147979 10/21/09
 ----- ITEM DESCRIPTION -----
 HEAT & PIECE 848013 - 2A
 WEIGHT 12635
 FINISH 1
 GRADE 316L / 316 UNS-S31603 / UNS-S31600
 DIMENSIONS 5.000 X 62.000 X 140.000 EXACT

----- SPECIFICATIONS -----
 *** MPC IN NEW CASTLE, IN, USA FROM SLABS IMPORTED FROM BRITAIN
 AMS 5507F WITH EXCEPTIONS AMS 5524L WITH EXCEPTIONS
 ASTM A240-09ASME SA240 07B08AA ASTM A480-09ASME SA480 07B08AA
 MELTED ELECTRIC ARC METHOD REFINED A.O.D. PROCESS
 ASTM A167-91 ASTM A262-02A PRACTICE A
 ASTM A262-02A PRACTICE B ASTM A112-08A CHEM&MECH ONLY
 ASTM E112-96E2 ASTM A666-03 ANN COND ONLY
 OSI GA MAN ED 2 R 1 10-15-02 NACE MNO175-2003/ISO 15156
 REQUIRES PRODUCT ANALYSIS PROD ANAL IN NEW CASTLE, IN
 NO DETRIMENTAL RADIOACTIVITY NO GRIPPER MARKS
 NO WELD REPAIRS

PLATES & TEST PCS SOLUTION ANNEALED @ 1900 DEGREES FAHRENHEIT MINIMUM. THEN WATER COOLED OR RAPIDLY COOLED BY AIR FREE FROM MERCURY CONTAMINATION AT CURRENT DETECTION LIMITS HOT ROLLED, ANNEALED & PICKLED (NRAP)

----- MECHANICAL & OTHER TESTS -----
 HARDNESS RB 77
 GRAIN SIZE 4
 YIELD STRENGTH (PSI) 36630
 TENSILE STRENGTH (PSI) 75760
 INTERGRANULAR CORROSION OK
 ELONGATION % IN 2" 46.3
 REDUCTION OF AREA % 58.5

----- CHEMICAL COMPOSITION ----- PRODUCT ANALYSIS -----
 CARBON (C) .016 (C) .014
 MANGANESE (MN) 1.69 (MN) 1.63
 PHOSPHORUS (P) .035 (P) .031
 SULFUR (S) .001 (S) .006
 SILICON (SI) .30 (SI) .31
 CHROMIUM (CR) 16.38 (CR) 16.50
 NICKEL (NI) 10.15 (NI) 10.15
 COBALT (CO) .27 (CO) .23
 COPPER (CU) .44 (CU) .47
 MOLY (MO) 2.05 (MO) 2.15
 NITROGEN (N) .02 (N) .09
 COLUMBIUM (CB) .017 (CB) .022
 TITANIUM (TI) .002 (TI) .002
 ALUMINUM (AL) .006 (AL) .007
 TIN (SN) .010 (SN) .009
 TANTALUM (TA) .005 (TA)



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

James Douman

CERTIFICATE IN CONFORMANCE WITH EN10204-95 3.1.1.B/EN10204-2004 3.1

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