

Outokumpu Stainless Plate, Inc.



Certificate of Analysis and Tests

* RE-CERTIFICATION *

OUR ORDER 0270483 - 22

HEAT & PIECE 848204-2A 11/23/11

SOLD TO: C.F.F. SPECIALTY STEELS INC.
1840 BURLINGTON ST. E.
ONTARIO L8H 3L4

SHIP TO: CUSTOMER PICK UP
CONTACT NATALIE FAX 905-549-29
OR NHILDEBRANDT@CFSTAINLESS.C
ONTARIO CN 00000

----- YOUR ORDER & DATE -----
C71995 12/17/09
----- ITEM DESCRIPTION -----
HEAT & PIECE 848204 - 2A
WEIGHT 14776
FINISH 1
GRADE 316L / 316 UNS-S31603 / UNS-S31600
DIMENSIONS 5.500 X 60.000 X 154.000 EXACT

----- SPECIFICATIONS -----
*** MFG IN NEW CASTLE, IN, USA FROM SLABS IMPORTED FROM BRITAIN
ASTM A240-11A ASME SA240-10E ASTM A480-11A ASMESA480 10ED
NACE MRO175-2003/ISO 15156 NO GRIPPER MARKS
NO WELD REPAIRS
ASTM A262-02A PRACTICE A ASTM A262-02A PRACTICE E

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 (HRAP)

----- MECHANICAL & OTHER TESTS -----
HARDNESS HRBW 77
GRAIN SIZE 4
YIELD STRENGTH (PSI) 40526
TENSILE STRENGTH (PSI) 79320
INTERGRANULAR CORROSION OK
ELONGATION % IN 2" 47.4
REDUCTION OF AREA % 56.9

----- CHEMICAL COMPOSITION -----
CARBON (C) .018
MANGANESE (MN) 1.67
PHOSPHORUS (P) .036
SULFUR (S) .001
SILICON (SI) .29
CHROMIUM (CR) 16.36
NICKEL (NI) 10.15
COBALT (CO) .30
COPPER (CU) .46
MOLY (MO) 2.06
NITROGEN (N) .05
COLUMBIUM (CB) .013
TITANIUM (TI) .009
ALUMINUM (AL) .006
TIN (SN) .008
TANTALUM (TA) .005

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 (signature)