

Outokumpu Stainless Plate, Inc.

OUTOKUMPU**Certificate of Analysis and Tests** 838226-1A

OUR ORDER 0254898 - 01

HEAT & PIECE 838226-1A 11/27/06

SOLD TO: A. M. CASTLE & COMPANY
3400 NORTH WOLF ROAD
FRANKLIN PARK IL 60131SHIP TO: A. M. CASTLE METALS
3400 NORTH WOLF ROAD
647-455-7111
FRANKLIN PARK IL 60131

----- YOUR ORDER & DATE -----

01-22557

8/15/06

TAG# IAC 20581

----- ITEM DESCRIPTION -----

HEAT & PIECE 838226 - 1A
WEIGHT 9250
FINISH 1
GRADE 316L / 316 UNS-S31603 / UNS-S31600
DIMENSIONS 2.500 X 96.000 X 132.000 EXACT

----- SPECIFICATIONS -----

*** MFG IN NEW CASTLE, IN, USA
AMS 5507F EXCEPT LINE MARK
ASTM A240-06
ASTM A479-05A CHEM ONLY
ASTM A480/A480M-05
ASTM A312-05A CHEMISTRY ONLY
ASTM A262-02A PRACTICE E
GLEV S1363-1 R F W/EXCEPTION
97/23/EC ANNEX 1 PARA 4.3
NO WELD REPAIRS
ASTM A262-02A PRACTICE AFROM SLABS IMPORTED FROM BRITAIN
AMS 5524K EXCEPT LINE MARK
ASMESA312 04ED05AD CHEM ONLY
ASME SA312-04 EDITION 05 ADD
ASME A276-05A CON A CHEM ONLY
A.M. CASTLE S31603-65 REV 1
97/23/EC ANNEX 1 PARA 4.3
CASTLE S31603-65 R2 W/EXCEPT
NO GRIPPER MARKSPLATES & TEST PCS SOLUTION ANNEALED @ 1850 DEGREES FAHRENHEIT MINIMUM.
THEN WATER COOLED OR RAPIDLY COOLED BY AIR.
FREE FROM MERCURY CONTAMINATION AT CURRENT DETECTION LIMITS
HOT ROLLED, ANNEALED & PICKLED (HRAP) 137 2007-2008

----- MECHANICAL & OTHER TESTS -----

HARDNESS RB 78
GRAIN SIZE 5
YIELD STRENGTH (PSI) 41516
TENSILE STRENGTH (PSI) 79610
INTERGRANULAR CORROSION OK
ELONGATION % IN 2" 55.7
REDUCTION OF AREA % 74.1

----- CHEMICAL COMPOSITION -----

CARBON (C) .016
MANGANESE (MN) 1.70
PHOSPHORUS (P) .031
SULFUR (S) .001
SILICON (SI) .32
CHROMIUM (CR) 16.28
NICKEL (NI) 10.09
COBALT (CO) .29
COPPER (CU) .50
MOLY (MO) 2.07
NITROGEN (N) .04
COLUMBIUM (CB) .025
TITANIUM (TI) .005
ALUMINUM (AL) .007
TIN (SN) .009
TANTALUM (TA) .004CASTLE METALS FP
REC'D 1/07 IAC 20581
RECEIVED BY: *[Signature]*WE HEREBY CERTIFY THAT THE MATERIAL HEREBIN HAS BEEN MADE AND TESTED IN
ACCORDANCE WITH THE LISTED SPECIFICATION(S) AND THAT THE RESULTS OF ALL
TESTS ARE ACCEPTABLE.*[Signature]* JAMES DOUBMAN, QUALITY ASSURANCE MANAGEROutokumpu Stainless Plate, Inc.
P.O. Box 370
New Castle, Indiana 47362

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