

OUTOKUMPU**Outokumpu Stainless Plate, Inc.****Certificate of Analysis and Tests*******
* RE-CERTIFICATION *

OUR ORDER 0263768 - 01

HEAT & PIECE 844431-2A 09/04/08

SOLD TO: A. M. CASTLE & COMPANY

SHIP TO: A. M. CASTLE METALS

3400 NORTH WOLF ROAD
FRANKLIN PARK IL 601313400 NORTH WOLF ROAD
847-455-7111
FRANKLIN PARK IL 60131

YOUR ORDER & DATE

01-48506

4/03/08

844431-2A

TAG# IAC 20584

ITEM DESCRIPTION

HEAT & PIECE 844431 - 2A
WEIGHT 10778
FINISH 1
GRADE 316L / 316 UNS-S31603 / UNS-S31600
DIMENSIONS 3.000 X 96.000 X 128.000 EXACT

SPECIFICATIONS

*** MFG IN NEW CASTLE, IN, USA
AMS 5507F WITH EXCEPTIONS
ASTM A240-08 ASME SA240 07ED
ASTM A479-06A CHEM&MECH ONLY
ASTM A480/A480M-08
ASTM A312-08 CHEM&MECH ONLY
ASTM A262-02A PRACTICE E
GL&V 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 WITH EXCEPTIONS
ASME SA312 07 ED CHEM ONLY
- NACE MRO175-2003
ASTM A276-08 COND A CHEM ONLY
A M CASTLE S31603-65 REV 3
97/23/EC PED #224/2004/MUC
CASTLE S31603-65 R2 W/EXCEPT
NO GRIPPER MARKSPLATES & 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 73
GRAIN SIZE 3
YIELD STRENGTH (PSI) 33522
TENSILE STRENGTH (PSI) 80050
INTERGRANULAR CORROSION OK
ELONGATION % IN 2" 59.9
REDUCTION OF AREA % 70.4

CHEMICAL COMPOSITION

CARBON (C) .015
MANGANESE (MN) 1.64
PHOSPHORUS (P) .036
SULFUR (S) .001
SILICON (SI) .38
CHROMIUM (CR) 16.24
NICKEL (NI) 10.08
COBALT (CO) .20
COPPER (CU) .49
MOLY (MO) 2.04
NITROGEN (N) .04
COLUMBIUM (CB) .010
TITANIUM (TI) .004
ALUMINUM (AL) .008
TIN (SN) .009
TANTALUM (TA) .002

CASTLE METALS EDMONTON

DATE RCVD

IAC

APPROVED BY

7420-51 Ave Edmonton AB T6B 3C1

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

Outokumpu Stainless Plate, Inc.
P.O. Box 370
New Castle, Indiana 47362

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