

HT# 843946-1A

Outokumpu Stainless Plate, Inc.

OUTOKUMPU

Certificate of Analysis and Tests

OUR ORDER 0262192 - 01

HEAT & PIECE 843946-1A 03/03/08

SOLD TO:

SHIP TO:

YOUR ORDER & DATE J12085 12/17/07 TAG# 3903-5499-02-1

HEAT & PIECE 843946 - 1A
WEIGHT 10404
FINISH 1
GRADE 2205+2 / 2205
DIMENSIONS 4.000 X 84.000 X 106.000 EXACT
UNS-S32205 / UNS-S31803



*** MFG IN NEW CASTLE, IN, USA
ASTM A240-07 ASME SA240 07ED
ASTM A 923-06 METH A,B,& C
MELTED ELECTRIC ARC METHOD
UHA 51 CHARPY @ -40F (-40C)
CONTAINS 40% TO 60% FERRITE
NAFTA CTRY ORIGIN = SLB CTRY
LIST HEAT/PC/SIZE ON INVCE

SPECIFICATIONS FROM SLABS IMPORTED FROM BRITAIN
ASTM A480-06B ASME SA480 07E
REFINED A.O.D. PROCESS
NACE MRO175-2003
ROLLED ALLOYS SPEC 2205+2
E562 POINT CT FERRITE 40-50%
MEETS EU ELECTRICAL ROHS

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

MECHANICAL & OTHER TESTS
HARDNESS RC 16
YIELD STRENGTH (PSI) 79489
TENSILE STRENGTH (PSI) 108590
ASTM A923 METHOD A OK
ELONGATION % IN 2" 35.9
REDUCTION OF AREA % 58.4
A923 METHOD C CORROSION TEST M.D.D. = 0.00 @ 25 DEGREES C 24HRS.
CHARPY TEST AT -40F (TRANS) 160 232, 177 FT-LBS. FULL SAMPLE SIZE
PERCENT SHEAR = 100%, 100%, 100%
LATERAL EXPANSION = 79, 94, 91 (MILS)
ASTM E-562 POINT COUNT FERRITE = 45.6%

CHEMICAL COMPOSITION
CARBON (C) .018
MANGANESE (MN) 1.52
PHOSPHORUS (P) .021
SULFUR (S) .001
SILICON (SI) .48
CHROMIUM (CR) 22.41
NICKEL (NI) 5.68
COBALT (CO) .09
COPPER (CU) .17
MOLY (MO) 3.13
NITROGEN (N) .19
COLUMBIUM (CB) .010
TITANIUM (TI) .002
ALUMINUM (AL) .021
TIN (SN) .012
TANTALUM (TA) .004

QMI QUALITY ASSURANCE
APPROVED Jose Araya
DATE 12-2-08

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 Douman

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

JAMES DOUBMAN, QUALITY ASSURANCE MANAGER

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

Mat - UNS-S31803 E16172
Gr 2205