

855952-1A.

Outokumpu Stainless Plate, Inc.

OUTOKUMPU

Certificate of Analysis and Tests

OUR ORDER 0283062 - 01

HEAT & PIECE 855952-1A 03/04/13

SOLD TO:

SHIP TO:

----- YOUR ORDER & DATE -----  
 S5120-I 1/21/13  
 ----- ITEM DESCRIPTION -----  
 HEAT & PIECE 855952 - 1A  
 WEIGHT 21531  
 FINISH 1  
 GRADE 304L / 304 UNS-S30403 / UNS-S30400  
 DIMENSIONS 5.500 X 72.000 X 187.000 EXACT

----- SPECIFICATIONS -----  
 \*\*\* MFG IN NEW CASTLE, IN, USA FROM SLABS IMPORTED FROM BRITAIN  
 AMS 5511H WITH EXCEPTIONS AMS 5511J WITH EXCEPTIONS  
 ASTM A240-12A ASMESA240-11ED ASTM A480-12 ASMESA480 11ED  
 ASTM A167-91 ASTM A262-02A PRACTICE E  
 ASTM A666-03 ANN COND ONLY ASTM A312-11 CHEM&MECH ONLY  
 MELTED ELECTRIC ARC METHOD REFINED A.O.D. PROCESS  
 ASTM A262-02A PRACTICE A NACE MR0175-2009/ISO 15156  
 NACE MR0103-2005 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 (HRAP)

----- MECHANICAL & OTHER TESTS -----  
 HARDNESS HRBW 74  
 GRAIN SIZE 3  
 YIELD STRENGTH (PSI) 44212  
 TENSILE STRENGTH (PSI) 85620  
 INTERGRANULAR CORROSION OK  
 ELONGATION % IN 2" 61.3  
 REDUCTION OF AREA % 54.4

----- CHEMICAL COMPOSITION -----  
 CARBON (C) .015  
 MANGANESE (MN) 1.77  
 PHOSPHORUS (P) .030  
 SULFUR (S) .001  
 SILICON (SI) .31  
 CHROMIUM (CR) 18.14  
 NICKEL (NI) 8.55  
 COBALT (CO) .07  
 COPPER (CU) .39  
 MOLY (MO) .15  
 NITROGEN (N) .07  
 COLUMBIUM (CB) .003  
 TITANIUM (TI) .005  
 ALUMINUM (AL) .005  
 TIN (SN) .009  
 TANTALUM (TA) .010

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*

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