

**OUTOKUMPU**

848204-3AA

# Certificate of Analysis and Tests

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\* RE-CERTIFICATION \*  
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OUR ORDER 0270483 - 18

HEAT & PIECE 848204-3AA 11/01/10

SOLD TO: C.F.F. SPECIALTY STEELS INC.  
1840 BURLINGTON ST. E.

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

ONTARIO L8H 3L4

00000

ONTARIO

CN 00000

----- YOUR ORDER & DATE -----  
C71995 12/17/09

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

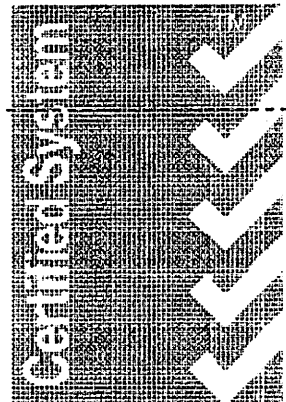
HEAT & PIECE 848204 - 3AA  
WEIGHT 10809  
FINISH 1  
GRADE 316L / 316  
DIMENSIONS 3.000 X 78.000 X 158.000 EXACT  
UNS-S31603 / UNS-S31600

----- SPECIFICATIONS -----  
\*\*\* MFG IN NEW CASTLE, IN, USA FROM SLABS IMPORTED FROM BRITAIN  
ASTM A240-10 ASME SA240 10ED ASTM A480-09A ASME SA480 10E  
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 RB 75  
GRAIN SIZE 4  
YIELD STRENGTH (PSI) 37503  
TENSILE STRENGTH (PSI) 84130  
INTERGRANULAR CORROSION OK  
ELONGATION % IN 2" 51.8  
REDUCTION OF AREA % 70.3



----- 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

ISO 9001-2008  
SAI Cert#CERT-0033834

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