

OUTOKUMPU KUMPU

Certificate of Test



* CERTIFICATION *

HEAT G11047

ORDER 0478219/001 SON 21442F BOL 0138180 TAG 1804108 07/24/06

SHIP TO:
A. M. CASTLE METALS
3400 NORTH WOLF ROAD

FRANKLIN PARK IL 60131

----- YOUR ORDER & DATE -----
01-13069 7/24/06 CUST# CASTLE01 CUST TAG# IAC# 31022

----- ITEM DESCRIPTION -----
GRADE 316L/316
Size 316L HRART RND BAR 11 STD Country of Melt: USA
Ship Condition A Country of Mfg.: USA
NAFTA Country of Origin is Country of Melt

Total Bundles 1 SON Weight 4230

----- SPECIFICATIONS -----
THE PRODUCTS LISTED ON THIS MILL TEST REPORT SATISFY PREFERENCE CRITERION B AS DEFINED IN ARTICLE 401 OF THE NORTH AMERICAN FREE TRADE AGREEMENT.
AMS 5648K, 5653F SAE-AMS QQ-S-763
AMS-S-7720 ASME SA182 E04 A05 CHEM. ONLY
ASME SA193 E04 A05 ASME SA479 E04 A05
ASTM A182-05A CHEMISTRY ASTM A262 02A PRACTICE A/E
ASTM A276 05A ASTM A479 06
ASTM E112 96 ASTM A 193 04B B8M (MCR)
DIN 50049/EN 10204 3.1B FEDERAL SPEC. QQ-S-763F
UNS S31600, AISI 316 UNS S31603, AISI 316L
AM CASTLE 3316-98 REV 23 SOLUTION ANNEALED CONDITION
FREE OF CONT. CARBIDE NETWORK NO WELD REPAIR
FREE OF MERCURY CONTAMINATION

----- MECHANICAL & OTHER TESTS -----
Test Condition A
Hardness as shipped (156 HBW)
Hardness as shipped 81 HRBS
Grain size 2.0 Tensile strength, KSI (MPa) 78.2 (539)
Micro OK 0.2% Yield Strngth, KSI (MPa) 37.0 (255)
Intergranular corrosion OK
Macro OK Elongation % in 4D 65.6
Reduction of area % 78.7

----- CHEMICAL COMPOSITION -----
Carbon (C) .016 Manganese (Mn) 1.480
Phosphorus (P) .026 Sulphur (S) .022
Silicon (Si) .470 Chromium (Cr) 17.160
Nickel (Ni) 10.210 Cobalt (Co) .120
Copper (Cu) .330 Moly (Mo) 2.060
Nitrogen (N) .066 Columbiun (Cb) .020
Tin (Sn) .007 Boron (B) .002
Vanadium (V) .060
Columbiun/
Tantalum (Cb+Ta) .020
Iron (Fe) Balance
Melt Practice EAF
Refining Practice AOD
De-long Ferrite

CASTLE METALS FP
DATE REC'D 7/26 IAC 31022
APPROVED BY: *[Signature]*

Knowingly & willfully falsifying or concealing a material act on this form, or making false, fictitious or fraudulent statements or representations herein could constitute a felony punishable under federal statutes.

We hereby certify that the test results shown in this report are correct and accurate as contained in the records of the company and are in compliance with the specifications, codes, and standards listed above.

M.F. Marcanio