



# Certificate of Test

HEAT E121160 ORDER 636120/ 01 BOL 0220222 \* CERTIFICATION \* 12/07/12

SHIP TO:  
ALRO METALS - BR  
6200 PARK OF COMMERCE BLVD

BOCA RATON 334870000

----- YOUR ORDER & DATE -----  
8730232 12/07/12 CUST# 0154001 CUST TAG#EDP# 13901865

----- ITEM DESCRIPTION -----  
GRADE 316L/316 Ship Condition CONDA  
Size 316L RND HRART CONDA 3.7500 x 144.000 RL  
Country of Melt: UNITED KINGDOM Country of Mfg.: SWEDEN  
NAFTA Country of Origin is Country of Melt

No weld repair  
Free of mercury contamination, Free of radiation contamination  
No WEEE relevant substances; Meets EU electrical ROHS

Total Bundles 1 Total Weight 982

WO 2035864 Bundles: 1A

----- SPECIFICATIONS -----  
AMS 5648L, 5653G SAE AMS-QQ-S-763B  
ASME SA182 E07-E10, Add. 11a ASME SA479 E07-E10 All  
ASTM A182 12 ASTM A262 98 Practice E  
ASTM A276 10 ASTM A479/A479M 11  
ASTM A484 11 DIN 50049/EN 10204 Type 3.1  
Solution Annealed Condition Federal Spec QQ-S-763F  
Prodec Quality

----- MECHANICAL & OTHER TESTS -----  
Hardness as shipped (161 HB )  
Hardness as shipped 82 HRB  
Grain size 6.5 Tensile strength, KSI (MPa) 89.3 ( 616)  
Micro OK 0.2% Yield Strngth, KSI (MPa) 41.5 ( 286)  
Intergranular corrosion OK  
Elongation % in 4D 51.0  
Reduction of area % 74.0

----- CHEMICAL COMPOSITION -----  
Carbon (C) .021 Manganese (Mn) 1.610  
Phosphorus (P) .036 Sulphur (S) .027  
Silicon (Si) .290 Chromium (Cr) 17.390  
Nickel (Ni) 10.100 Cobalt (Co) .267  
Copper (Cu) .480 Moly (Mo) 2.060  
Nitrogen (N) .087 Columbium (Cb) .020  
Titanium (Ti) .002 Aluminum (Al) .005  
Tin (Sn) .009 Tantalum (Ta) .001  
Vanadium (V) .070 Tungstem (W) .090  
Columbium/  
Tantalum (Cb+Ta) .021  
Iron (Fe) Balance  
Melt Practice EAF  
Refining Practice AOD  
De-long Ferrite



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. Marcano, Quality Manager