

Certificate of Test

E140514 - 4.0

C111320

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HEAT E140514 ORDER 653208/ 06 BOL 0228576 * CERTIFICATION * 08/07/14

SHIP TO:
ASA ALLOYS EDMONTON
20 CHALLENGER CRESCENT
SHERWOOD PARK
ALBERTA T8H 2R1 000000000

----- YOUR ORDER & DATE -----
PO33755 8/07/14 CUST# 1550000 CUST TAG#

----- ITEM DESCRIPTION -----
GRADE 316L Ship Condition CONDA
Size 316L RND HRART CONDA 4.0000 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 1070

WO 2050357 Bundles: 2B

AMS 5648L, 5653H	SAE AMS-QQ-S-763C
ASME SA182 2007-2013 Ed	ASME SA193 B8M CL1, 2013 Ed.
ASME SA479 2007-2013 Ed.	ASME SA320 B8M CL1, 2013 Ed.
ASTM A182 13a	ASTM A193 12b B8M Class 1D
ASTM A262 98 Practice E	ASTM A276 13a
ASTM A479/A479M 14	ASTM A320 11 B8M Class 1
ASTM A 182-82-97C	DIN 50049/EN 10204 Type 3.1
Federal Spec QQ-S-763F	Federal Spec QQ-S-763E AM 1
Prodec Quality	NACE MR0175-09, ISO 15156:09

----- MECHANICAL & OTHER TESTS -----

Hardness as shipped (158 HB)	
Hardness as shipped 82 HRB	
Grain size 6.0	Tensile strength, KSI (MPa) 87.2 (601)
Micro OK	0.2% Yield Strngth, KSI (MPa) 39.7 (274)
Intergranular corrosion OK	
	Elongation % in 4D 55.0
	Reduction of area % 75.0

----- CHEMICAL COMPOSITION -----

Carbon (C) .022	Manganese (Mn) 1.590
Phosphorus (P) .033	Sulphur (S) .025
Silicon (Si) .390	Chromium (Cr) 17.160
Nickel (Ni) 10.080	Cobalt (Co) .255
Copper (Cu) .410	Moly (Mo) 2.140
Nitrogen (N) .078	Columbium (Cb) .010
Titanium (Ti) .003	Aluminum (Al) .005
Tin (Sn) .011	Boron (B) .001
Tantalum (Ta) .002	Vanadium (V) .050
Tungsten (W) .090	
Columbium/ Tantalum (Cb+Ta) .012	
Iron (Fe) Balance	
Melt Practice EAF	
Refining Practice AOD	
De-long Ferrite 2.9	

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, Quality Manager

