OUTOKUMPU

Certificate of Test

41654

ISO 9001:2000 Cert.# 011227

****
* CERTIFICATION *
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HEAT E42562 ORDER 0467669/022 SON 14611D BOL 0129911 TAG 1703057 02/09/05

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

GRADE 304L/304
Size 304L HRART RND BAR 6-1/4 STD
Ship Condition A

Country of Melt: BRI
Country of Mfg.: USA
NAFTA Country of Origin is Country of Melt

Total Bundles 1 SON Weight 2428

---------- SPECIFICATIONS ----------

MFG TO FINISHED BAR IN THE USA FROM BILLETS IMPORTED FROM BRITAIN
AMS 5639H, 5647H
ASME SA182 E01 A03 CHEMISTRY
ASME SA479 E01
ASTM A182-02 CHEMISTRY
ASTM A276 03
ASTM A479 03
ASTM E112 96
ASTM A193 01B B8 CLASS 1
SOLUTION ANNEALED CONDITION
SOL ANNEAL @ 1900F MIN/WQ
FED STD QQ-S-763F

SAE-AMS QQ-S-763
ASME SA320 B8 CL1 E01
ASME SA193 B8 CL1D E01 A02
ASTM A262 98 PRACTICE E
ASTM A314 97
ASTM A484 03A
ASTM A320 01 B8 CLASS 1
DIN 50049/EN 10204 3.1B
FREE OF CONT. CARBIDE NETWORK
TIME SUFF. TO SOLN CARBIDES
UNS S30400/S30403,AISI304/304L
NO WELD REPAIR

FREE OF MERCURY CONTAMINATION

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

Test Condition		A		
Hardness as shipped		147 HBW		
Hardness as shipped		(78 HRBS)		
Grain size		5.5	Tensile strength,KSI (MPa)	83.0 (572)
Micro		OK	0.2% Yield Strngth,KSI(MPa)	37.5 (259)
Intergranular corrosion		OK		
			Elongation % in 4D	60.0
			Reduction of area %	77.0

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

Carbon	(C)	.022	Manganese	(Mn)	1.630
Phosphorus	(P)	.027	Sulphur	(S)	.025
Silicon	(Si)	.376	Chromium	(Cr)	18.210
Nickel	(Ni)	8.370	Cobalt	(Co)	.142
Copper	(Cu)	.406	Moly	(Mo)	.440
Nitrogen	(N)	.070	Columbium	(Cb)	.005
Titanium	(Ti)	.004	Aluminum	(Al)	.005
Tin	(Sn)	.014	Vanadium	(V)	.080
Columbium/ Tantalum	(Cb+Ta)	.005			
Iron	(Fe)	Balance			
Melt Practice		EAF			
Refining Practice		AOD			
De-long Ferrite		5.9			

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.

Outokumpu Stainless Bar, Inc.
3043 Crenshaw Pkwy.
Richburg, SC 29729

M.F. Marcanio, Quality Manager M.F. Marcanio