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 Via Industriale, 1 - 25021 BAGNOLO NELLA (BS) ITALY

CERTIFICATE OF QUALITY AND MATERIAL TESTING

INSPECTION CERTIFICATE N. **AC/ 0009** DATE : **19/12/13**
 according to EN 10204.3.1

FIRM : **MAGELLAN CORPORATION - CHICAGO (US)**
 ORDER : **209160** ORDER CONFIRMATION : **201340**

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
54883	3	FORGED ROUND PEELED BARS Ø13"	UNS S31603 MIC 1701 12/06/2013 ASTM A276-13 ASTM A314-13a ASTM A473-13 ASTM A479-13b ASTM A484-13a ASME Sec.II Part A SA478-12 AISI 316/316L AMS 5948H AMS 5953J AMS QQ8 763B NACE MR0103-2012 NACE MR0175/ISO 15156-2009
		6609,464 lb x 13,983 feet 6609,464 lb x 13,983 feet 6600,646 lb x 13,976 feet	

H.T. CONDITION: Solution annealed 1922 °F + water quenched (Condition A)

HEAT ANALYSIS

C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Sn
0,016	1,75	0,51	0,026	0,0245	16,77	10,35	2,11	0,299	
Ca	Al	V	Ti	W	Ta	As	Co	Nb	Pb
	0,006	0,041	0,003	0,045			0,084	0,022	
B	N	Zr	Sb	Fe	PRE	Ferite (%)	Grain size ASTM E112-12		
	0,077						4		

TEST RESULTS ON ACTUAL BAR PROLONGATION

Temp. [°C]	Direction	R _{max} [ksi]	R _m [ksi]	A [%]	Z [%]	KV (10 X 10 mm) [ft-lbs]
RT	L	49,5	84,3	57,8	74,8	311,4 -314,8 -316,3
RT	T					80,2 -81,4 -89,4
		HB				
RT	Ext.	183				
RT	Mid Radius	152				

Steelmaking process E.A.F. + A.O.D./ingot cast/Bottom pouring
 No welding performed on material
 Material free from Mercury contamination
 Material inspected with a gamma spectrometer and with no radioactive contamination beyond the limits provided for by the EU-Radiation Protection 122-part 1, when relevant
 Mechanical tests performed according to ASTM A370-12a (Ø12,5mm-50mm length) + ASTM E10-12 + ASTM E23-12
 Chemical analysis according to ASME SA193-10 Sec. II Part. A Grade B8M, ASME SA320-10 Class1 B8M, ASTM A183-12b Grade B8M and ASTM A320-11a Class1 B8M
 Chemical composition tested in accordance with ASTM A751-11
 Chemical analysis and mechanical properties according to ASME Sec.II Part A SA182-10 and ASTM A182-13 F316/F316L
 Corrosion test according to ASTM A262 Pr.E satisfactory performed
 Italfond is in compliance with DFARS Regulation 252.225-7014
 Macrostructure: Satisfactory
 Forging ratio 4,2:1
 Country of mill and manufacture : ITALY

SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. Quality Assurance ITALFOND STAINLESS STEEL AND SUPERALLOYS GARANZIA QUALITA'
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From: TK Materials CA, Ltd.
 Cust. ATLANTIS INDUSTRIES
 CstAr
 Wgt.: 739 LB

Del.: 2404277057
 CstOr Bozo
 Date 12/24/2015

Thomas Sanchez



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 Via Industriale, 1 - 25021 BAGNOLO MELLA (BS) ITALY

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ULTRASONIC TEST

INSPECTION CERTIFICATE N. **UT/ 0009** DATE : **19/12/13**
 according to EN 10204.3.1

FIRM : **MAGELLAN CORPORATION - CHICAGO (US)**
 ORDER : **209160** ORDER CONFIRMATION **201340**

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54883	3	FORGED ROUND PEELED BARS Ø13" 6609,464 lb x 13,983 feet 6609,464 lb x 13,983 feet 6600,646 lb x 13,976 feet	UNS S31603 MIC 1701 12/06/2013 ASTM A276-13 ASTM A314-13a ASTM A473-13 ASTM A479-13b ASTM A484-13a ASME Sec.II Part A SA479-12 AISI 316/316L AMS 5648H AMS 5653J AMS QQS 763B NACE MR0103-2012 NACE MR0175/ISO 15156-2009

H.T. CONDITION : Solution annealed 1922 °F + water quenched (Condition A)

ULTRASONIC TEST REPORT

EQUIPMENT	:	KRAUTKRAMER USN 58L
PROBE	:	B2S
COUPLANT	:	Gel
SURFACE CONDITION	:	Peeled
CALIBRATION METHOD	:	Backwall echo
TESTING PROCEDURE	:	ASTM A388-11
ACCEPTANCE CRITERIA	:	ASME VIII Div.2 Par. 3.3.4
CALIBRATION METHOD	:	Backwall echo-AVG Method
TESTING PROCEDURE	:	SEP1921 Class 3
ACCEPTANCE CRITERIA	:	C/c
RESULT	:	No recordable indications found

SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. NDE Inspector
		SNP TC - 1A LEVEL II GRUNO BROCCA

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Tommaso Sanchez



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DEGREE OF IMPURITIES

INSPECTION CERTIFICATE N. IN/ 0009 DATE : 19/12/13
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 ORDER : 209160 ORDER CONFIRMATION : 201340

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
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H.T. CONDITION : Solution annealed 1922 °F + water quenched (Condition A)

INCLUSION CONTENT ASSESSEMENT

Reference standard ASTM E45-A-13

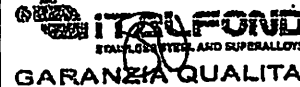
MID RADIUS

FIELD	A		B		C		D	
	T	H	T	H	T	H	T	H
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	1	0
3	0	0	0	0	0	0	0	1
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	1	1
6	0	0	0	0	0	0	0	0
AVERAGE	0,00	0,00	0,00	0,00	0,00	0,00	0,33	0,33

SURVEYORS

CUSTOMER INSPECTION

ITALFOND S.p.A.
Quality Assurance



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