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

CERTIFICATE OF QUALITY AND MATERIAL TESTING

INSPECTION CERTIFICATE N. **ACI 1413** DATE : **28/03/19**
 according to EN 10204.3.1

FIRM :
 ORDER : **PO5536** ORDER CONFIRMATION : **207348**

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
64038	1	FORGED ROUND PEELED BARS Ø24" Lbs 18276,336 x 11,51247 feet	316/316L UNS S31600 /S31603 SS1 Rev.5.4 ASTM A276-17 ASTM A479-18 ASTM A484-18 ASME Code Sec.II Part. A SA479-17 AMS 5653J AMS QQS 763D Cond.A AMS 5648M AMS S-7720 316 NACE MR 0103-2015 NACE MR 0175/ISO 15156-2015

H.T. CONDITION: Solution annealed 1050°C (11h) + water quenched

HEAT ANALYSIS

C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Sn (ppm)
0,014	1,75	0,31	0,027	0,0006	16,95	10,20	2,07	0,416	93
Ca	Al	V	Ti	W	Ta	As (ppm)	Co	Nb	Pb (ppm)
0,0079	0,009	0,049	0,002	0,050	0,0077	56	0,103	0,035	<20
B	N	Zr	Sb	Fe	PRE	Ferrite (%) ASTM E562	Grain size ASTM E112		
0,0004	0,059						5		

TEST RESULTS ON ACTUAL BAR PROLONGATION

Temp. [°C]	Direction	Rp _{0.2} [KSI]	Rm [KSI]	A [%]	Z [%]	KV (10 X 10 mm) [J]	Hardness
RT	L	37	80	61,2	76,2		HBw 147 HRc <22

Steelmaking process E.A.F. + A.O.D. refining
 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 A370-18 (Ø12,5mm-50mm length) + ASTM E10-18 + ASTM E18-19
 Corrosion test according to ASTM A262 Pr.E satisfactory performed
 Chemical analysis and mechanical properties according to ASTM A182-19-ASME SA182-17 (F316-F316L) - ASTM A193-17 - ASME SA193-17 (Grade 3B8 Class 1)
 Country of melt and country of manufacture: Italy
 Italfond is in compliance with DFARS regulation 252.225-7017
 Forging ratio 3,5:1
 PMI performed

SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. Quality Assurance

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CERTIFICATE OF QUALITY AND MATERIAL TESTING
MICROGRAPHIC EXAMINATION

INSPECTION CERTIFICATE N. ME/ 1413 **DATE :** 28/03/19
 according to EN 10204.3.1

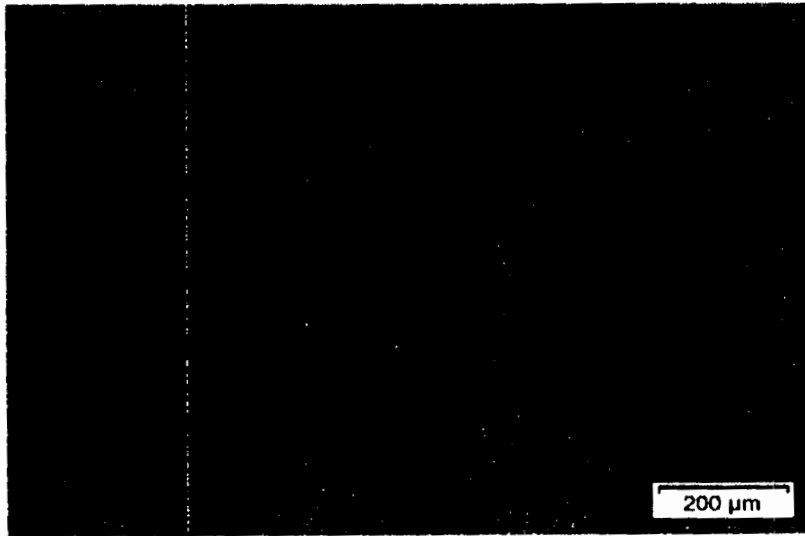
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H.T. CONDITION : Solution annealed 1050°C (11h) + water quenched

MICROGRAPHIC EXAMINATION - MID RADIUS

Magnification: 100 x
Etching: electrolytic, Oxalic Acid 3v 90s according to ASTM E407



RESULT: Omogeneous structure free from detrimental phases and precipitates

SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. Quality Assurance GARANZIA QUALITÀ
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CERTIFICATE OF QUALITY AND MATERIAL TESTING
MACROGRAPHIC EXAMINATION

INSPECTION CERTIFICATE N. **ME2/ 1413** DATE : **28/03/19**
 according to EN 10204.3.1

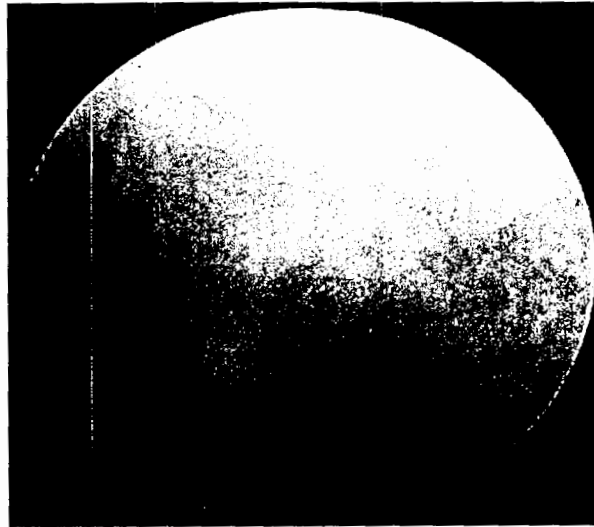
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MACROGRAPHIC EXAMINATION

Etching: Aquaregia



SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. Quality Assurance
		 GARANZIA QUALITÀ

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