



ITALFOND

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

CERTIFICATE OF QUALITY AND MATERIAL TESTING

INSPECTION CERTIFICATE N. ACI 2352 **DATE :** 02/10/06
according to EN 10204.3.1

FIRM : EMJ METALS - SCHAUMBURG (ILLINOIS)
ORDER : P886353 423 **509378** ORDER CONFIRMATION : 060217

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
42122	4	FORGED ROUND PEELED BAR 8,1/2" DIA	316/316L

H.T. CONDITION: Solution annealed 1050°C + water quenched

HEAT ANALYSIS

C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Sn
0,018	1,85	0,31	0,028	0,024	16,80	10,10	2,07	0,314	
Ca	Al	V	Ti	W	Ta	As	Co	Nb	Pb
B	N	Zr	Sb	Fe	PRE	Ferrite (%)	Grain size ASTM E112		
	0,084						5/6		

TEST RESULTS ON ACTUAL BAR PROLONGATION

Temp. [°C]	Direction	Rp0.2 [KSI]	Rm [KSI]	A [%]	Z [%]	KV (10 X 10 mm) [J]	HB
RT	T.	45,3	86,7	48,6	57,0		195

Steelmaking process E.A.F. + AOD refining
No welding performed on material
Material free from Mercury contamination
Mechanical tests performed according to ASTM A370 (tensile 0.5" x 2" gage specimen) + ASTM E10
Corrosion test according to ASTM A262 Pr.B satisfactory performed
Material according to: ASTM A276 - A479 - ASME SA479 - AMS 5648K - AMS 5653F - AMS QQS 763A

SURVEYORS

CUSTOMER INSPECTION

ITALFOND S.p.A.

[Signature]
Garanzia Qualità



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MACROGRAPHIC EXAMINATION

INSPECTION CERTIFICATE N.

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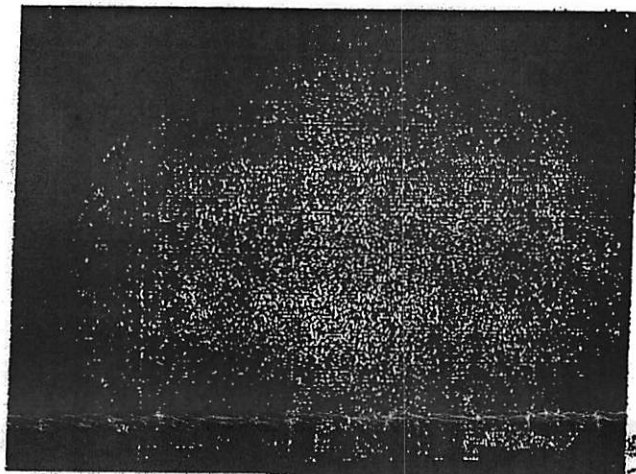
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MACROGRAPHIC EXAMINATION

Etching: boiling mixture 50% HCl - Water



Garanzia Qualita
titanium steel and superalloy bar

RESULT: Free from macroscopic defects

SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. The metallurgist
		ITALFOND S.p.A. titanium steel and superalloy bar Garanzia Qualita