



**ITALFOND**

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

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**CERTIFICATE OF QUALITY AND MATERIAL TESTING**

INSPECTION CERTIFICATE N. **ACI 2710** DATE : **18/10/06**  
 according to EN 10204.3.1

FIRM : **ASA ALLOYS INC. - ONTARIO (CANADA)**  
 ORDER : **057916-CV** ORDER CONFIRMATION : **060288**

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
41872	2	FORGED ROUND PEELED BAR 16" DIA	316/316L

H.T. CONDITION: **Solution annealed + water quenched**

**HEAT ANALYSIS**

C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Sn
0,026	1,80	0,20	0,028	0,029	17,08	10,18	2,03	0,268	
Ca	Al	V	Ti	W	Ta	As	Co	Nb	Pb
B	N	Zr	Sb	Fe	PRE	Ferrite (%)	Grain size ASTM E112		
	0,072						3		

**TEST RESULTS ON ACTUAL BAR PROLUNGATION**

Temp. [°C]	Direction	Rp <sub>0,2</sub> [KSI]	Rm [KSI]	A [%]	Z [%]	KV (10 x 10 mm) [J]	Hardness
RT	T	43,6	84,9	51,2	61,1		HB 174 HRc < 0

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 Practice E satisfactory performed  
 Material according to: ASTM A276 - A182 - A479 - AMS-QQS-763A - AMS-5648J - AMS 5653E  
 ASME SA479 - SA182 - NACE MR0175-2003 - MR0103 - 2005  
 Chemical analysis according to: ASTM A193 - ASME SA193

SURVEYORS

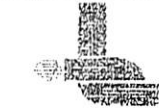
CUSTOMER INSPECTION

ITALFOND S.p.A.

**IFE QUALITY ASSURANCE S.p.A.**

stainless steel and superalloy bars

**GARANZIA QUALITA'**



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**MACROGRAPHIC EXAMINATION**

INSPECTION CERTIFICATE N. **MA/ 2710** DATE : **18/10/06**  
 according to EN 10204.3.1

FIRM : **ASA ALLOYS INC. - ONTARIO (CANADA)**  
 ORDER : **057916-CV** ORDER CONFIRMATION: **060288**

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**MACROGRAPHIC EXAMINATION**

Etching: boiling mixture 50% HCl - Water



**ITALFOND S.p.A.**  
 stainless steel and superalloy bars  
**GARANZIA QUALITA'**

RESULT: Free from macroscopic defects

SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. <b>ITALFOND S.p.A.</b> stainless steel and superalloy bars <b>GARANZIA QUALITA'</b>
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