



**ITALFOND**

Tel. (+39).(030).6829911

Fax. (39).(030).6820616

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

57020 *2/18*

**CERTIFICATE OF QUALITY AND MATERIAL TESTING**

**INSPECTION CERTIFICATE N.**

**AC/ 0257**

**DATE : 06/02/07**

according to EN 10204.3.1

**FIRM : ASA ALLOYS INC. - ONTARIO (CANADA)**

**ORDER : 060150-CV**

**ORDER CONFIRMATION : 060532**

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
42492	1	FORGED ROUND PEELED BAR 13",DIA	316/316L

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

**HEAT ANALYSIS**

C	Mn	Si	P	S	Cr	Ni	Mo	Cu	Sn
0,020	1,81	0,27	0,025	0,022	16,86	10,16	2,02	0,190	
Ca	Al	V	Ti	W	Ta	As	Co	Nb	Pb
B	N	Zr	Sb	Fe	PRE	Ferrite (%)		Grain size ASTM E112	
	0,080								6

**TEST RESULTS ON ACTUAL BAR PROLONGATION**

Temp. [°C]	Direction	Rp0,2 [KSI]	Rm [KSI]	A [%]	Z [%]	KV (10 X 10 mm) [J]	Hardness
RT	T	54,2	86,6	42,6	60,1		HB 204
							HRc 3

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 - W.1.4404 DIN EN 10088-3

SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. Quality Assurance
		 stainless steel separator bar <b>GARANZIA QUALITÀ</b>



**ITAFOND**

Tel. (39).(030).6829911

Fax. (39).(030).6820616

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

**CERTIFICATE OF QUALITY AND MATERIAL TESTING**

**MACROGRAPHIC EXAMINATION**

**INSPECTION CERTIFICATE N.**

**MA/ 0257**

**DATE : 06/02/07**

according to EN 10204.3.1

**FIRM : ASA ALLOYS INC. - ONTARIO (CANADA)**

**ORDER : 060150-CV**

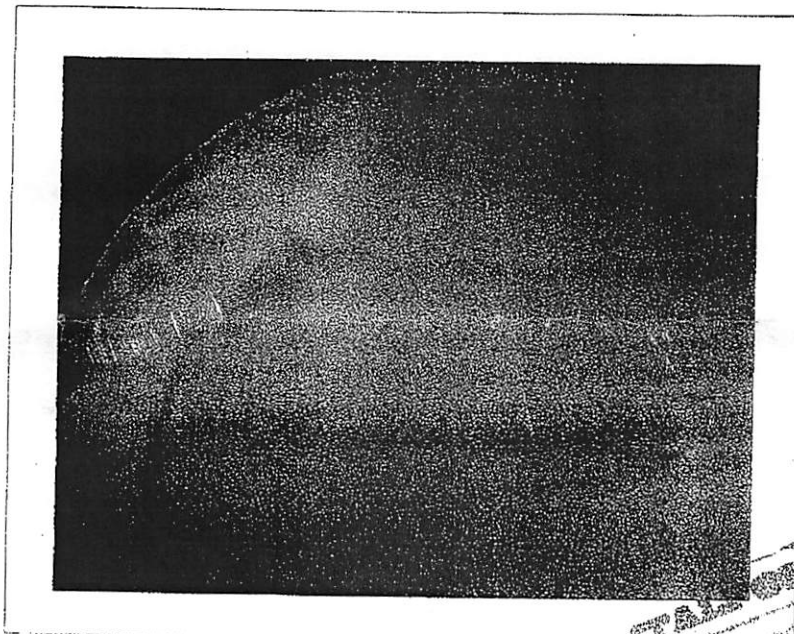
**ORDER CONFIRMATION: 060532**

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
42492	1	FORGED ROUND PEELED BAR 13" DIA	316/316L

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

**MACROGRAPHIC EXAMINATION**

**Etching: boiling mixture 50% HCl - Water**



**RESULT: Free from macroscopic defects**

ITAFOND S.p.A.  
Metallurgist  
alloy base  
GARANZIA QUALITA

SURVEYORS	CUSTOMER INSPECTION	ITAFOND S.p.A.
		ITAFOND S.p.A. Metallurgist stainless steel and superalloy base GARANZIA QUALITA