

# ROLDAN, S.A. - Stainless Steels

**FACTORY**

Santo Tomás de las Ollas, s/n  
 Apdo. de Correos 11  
 FORNERAADA ( LEÓN )  
 TEL.: +34 987 44 61 00  
 FAX: +34 987 44 61 01  
 E-MAIL: rdn\_fabrica@acerinox.com



**HEAD OFFICE**

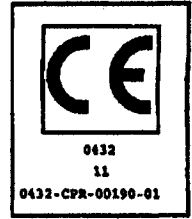
Santiago de Compostela, 100-3°  
 28035 MADRID (ESPAÑA)  
 TEL.: +34 913 98 52 57  
 FAX: +34 913 98 51 93  
 E-MAIL: roldan@acerinox.com

## INSPECTION CERTIFICATE


3.1  
 EN 10204



TÜV Rheinland®  
**CERT**  
 ISO 9001



CERTIFICATE N°	2016/015198	DATE	29/06/2016	SHEET	1	DELIVERY NOTE N°	2016/002039
GRADE	ROLDAMAX-339 EN10088:3 ( 1.4401/1.4404. )						
DIMENSIONS	25,00 mm.						
LENGTH	4.000 mm.	TOLERANCE	ISO h10				
PRODUCT	[31] Round bar, annealed, smooth turned, polished						
REQUIREMENTS	EN10088:3	CUSTOMER ORDER	56438/June16				
TENSILE TEST	EN ISO 6892-1	ACCORDING TO	EN 10272	EDITION	AD-2000 W2	AD-2000 W10	
INTERGRANULAR CORROSION	EN ISO 3651-2 method A: SATISFACTORY	WITHOUT OBJECTIONS					
SURFACE AND DIMENSIONS CONTROL	WITHOUT OBJECTIONS	Spekrometrical Identity Test: O.K.					
IMPACT TEST, SAMPLE DIMENSIONS	EN ISO 148-1	MATERIAL FREE FROM RADIOACTIVITY					EN 10.088:5

ORDER N°	WORKS N°	MARKS / BOX	HEAT NUMBER	SAMPLE	WEIGHT	PRODUCTION PROCESS	INSPECTOR STAMP
PL04376 1		16 / RB66918	LSWT	LSWT	1074	EAF + AOD +CC	
<div style="border: 2px solid red; padding: 5px; text-align: center; color: red;">                     FLOW TECHNOLOGY LTD                      TEST CERTIFICATE                      VERIFIED TRUE                      COPY OF ORIGINAL                 </div>						TRADE MARK	QUALITY INSPECTOR
						 MARKING HEAT NUMBER GRADE ( ACX-339 )	

MECHANICAL PROPERTIES																	
CAST	SAMPLE	SAMPLE DIMENSIONS mm.	Observ. T°.	Rm MPa	Rp 0,2% MPa	Rp 1% MPa	E %	A %		Agt %	IMPACT STRENGTH ISO-V (J)		HARDNESS HB	FATIGUE TEST	BEND TEST	CROSS SECTIONAL AREA cm²	E <sub>u</sub> / m
								L <sub>50</sub>	L <sub>100</sub>		20°C	-196°C					
LSWT	LSWT	25,00	20°C	608	351	401	70	53	55				162				
REQUIREMENTS	EN ISO 377			500	200	235		40			100		215				

CHEMICAL COMPOSITION %														
CAST	C	P	S	Si	Mn	Cr	Ni	Mo	Ti	N	Cu	Co		
LSWT	0,0160	0,0300	0,0270	0,3230	1,3400	16,7500	10,4000	2,0730	0,0050	0,0470	0,4440	0,1640		
REQUIREMENTS	0,0300	0,0450	0,0300	1,0000	2,0000	16,5000	10,0000	2,0000		0,1000				

**OBSERVATIONS**  
 EN10088:3 - 1.4401/1.4404. AISI 316/316L. UNS S31600/S31603.  
 ASTM A-182 grade F316L. ASTM A-193 class 1 grade 30M. ASTM A-276 condition A. ASTM A-479 condition A.  
 ASME SA-182. ASME SA-193. ASME SA-276. ASME SA-479. ASME BVPC section II part A.  
 NACE MR0175 & MR0103. ASTM A-262 practice E: OK.

OTHER TEST RESULTS	HEAT TREATMENT	1.050 °C AND WATERCOOLED	REQUIREMENTS	TRD100 TRD100, AD-2000-W2-W10, DGR197/23/EC(PE)
--------------------	----------------	--------------------------	--------------	---