

# ROLDAN, S.A. - Stainless Steels

**FACTORY**

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



**HEAD OFFICE**

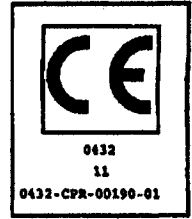
Santiago de Compostela, 100-3°  
28035 MADRID (ESPAÑA)  
TEL.: +34 913 98 52 57  
FAX: +34 913 98 51 93  
E-MAIL: roldan@acerinox.com

## INSPECTION CERTIFICATE

3.1  
EN 10204



TÜV Rheinland®  
**CERT**  
ISO 9001



EN 10.088:5

CERTIFICATE N°	2016/015198	DATE	29/06/2016	SHEET	1	DELIVERY NOTE N°	2016/002039
GRADE	ROLDANAX-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	EDITION	AD-2000 W2	AD-2000	W10		
ACCORDING TO	EN 10272						
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					

ORDER N°	WORKS N°	MARKS / BOX	HEAT NUMBER	SAMPLE	WEIGHT	PRODUCTION PROCESS	INSPECTOR STAMP
PL04376 1		16 / RB66918	LSWT	LSWT	1074	EAF + AOD +CC	<b>R3</b>
						TRADE MARK	QUALITY INSPECTOR
							JUAN JOSE ALVAREZ RODRIGUEZ
						MARKING	QUALITY CONTROL REPRESENTATIVE
						HEAT NUMBER	<i>JA</i>
						GRADE ( ACX-339 )	

CAST	SAMPLE	SAMPLE DIMENSIONS mm.	Observ. T°	Rm MPa	Rp 0,2% MPa	Rp 1% MPa	E %	A %		Agg %	IMPACT STRENGTH ISO-V (J)		HARDNESS HB	FATIGUE TEST	BEND TEST	CROSS SECTIONAL AREA cm²	R <sub>p</sub> / R <sub>m</sub>
								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				

CAST	CHEMICAL COMPOSITION %											
	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		

FLOW TECHNOLOGY LTD  
 TEST CERTIFICATE  
 VERIFIED TRUE  
 COPY OF ORIGINAL

**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)
--------------------	----------------	--------------------------	--------------	---