


Larrondo LOIU (VIZCAYA) España  
P.O. Box 1.323/48080 Bilbao  
Tel 34-(4) 4 71 13 00  
Fax.34-(4) 4 53 16 36


Management Systems  
Certified by  
LRQA  
ISO 9001 / SGI 6000360  
ISO 14001 / SGI 1870678

ACEROS INOXIDABLES

**OLARRA**

OLARRA U.K. LTD.  
FOREST PARK - CLEOBURY MORTIMER  
NR KIDDERMINSTER - DY.149BD - ENGLAND

Trade Mark - Zeichen des Lieferwerkes  
Anagrama del suministrador 

Works Inspector Stamp - Werkssachverständiger  
Sello del Inspector 

|   |              |  |        |  |
|---|--------------|--|--------|--|
| Certificate type - APZ Nach<br>Certificado tipo | EN 10204/3.1 | Certificate n° - Prüf-Nr<br>Certificado n° | 239639 | Date - Datum - Fecha<br>08 - 07 - 2015 |
|---|--------------|--|--------|--|

|  |        |                            |        |  |        |
|--|--------|----------------------------|--------|--|--------|
| Our order N°<br>Werks - Nr<br>N° de Referencia | 582529 | Heat<br>Schmelze<br>Colada | 394247 | Your order N°<br>Bestell - Nr<br>Pedido N° | OL6902 |
|--|--------|----------------------------|--------|--|--------|

|                                     |             |   |                     |
|-------------------------------------|-------------|---|---------------------|
| Steel Grade<br>Werkstoff<br>Calidad | 316-S-11 AV | According to<br>Entsprechend<br>Corresponde | BS 970:PART 3:1991. |
|-------------------------------------|-------------|---|---------------------|

|  |  |                            |   |                         |                           |         |
|--|--|----------------------------|---|-------------------------|---------------------------|---------|
| Shape and Size - Gegenstand<br>Perfil y dimensión<br>ROUND 20 mm | Tolerance - Toleranz<br>Tolerancia<br>h 9 / DIN 671 / EN 10278 | Bundles<br>Bunde<br>Bultos | 6 | Bars<br>Stäbe<br>Barras | Weight<br>Gewicht<br>Peso | 3888 Kg |
|--|--|----------------------------|---|-------------------------|---------------------------|---------|

Requirements - Anforderungen - Exigencias

EN 10.088-3.2014.  
EN 10.272-2007.  
ASTM A 182 / A 182M-15.  
ASTM A 479 / A 479M-14.  
ASTM A 276-15.  
ASME SA 479 / SA 479M-13  
NACE MR-0175-2003/ISO 15156-3 2009.  
SAE AMS 5653H-12.  
316S31AV-1.4404-1.4401-Type 316-Type 316L.  
F ED 97/23/EC, Annex I, Paraq.4.3/DGR 97/23/EG

Anhang I Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC

|  |  |
|--|--|
| Melting process / Erschmelzungsart / Proceso de Fusión<br><b>E.A.F. / A.O.D.</b> | Heat treatment / Wärmebehandlung / Tratamiento térmico<br>1060C 4H/Std WATER/WASSER/AGUA |
|--|--|

Solution annealed/Abgeschreckt/Hipertemple-Cold drawn/Gezogen/Estirado-Polished/Poliert/Pulido-

Test results - Ergebnis der Prüfungen - Resultados de los ensayos

| Dimension of Specimen<br>Abmessungen des Probestabes<br>Medida de las probetas | Rp0.2%<br>N/mm2<br>MPA           | Rp 1%<br>N/mm2<br>MPA | Rm<br>N/mm2<br>MPA | A<br>%L 5D | Δ<br>%L 4D | Z<br>% | Hardness<br>Härte<br>HBw | Impact test / Kerschlag / Resiliencia<br>ISO V Jules |     |
|--|----------------------------------|-----------------------|--------------------|------------|------------|--------|--------------------------|--|-----|
| RD. 10,00 mm.  | Min.                             | 325                   | 375                | 550        | 20         |        |                          |  |     |
|  | Max.                             |                       |                    |            |            |        |                          |  |     |
| Temperature °C<br>20   | Spec. N°<br>Probe Nr.<br>Pro N°. | 1                     | 430                | 519        | 610        | 42     | 45                       | 74   | 192 |

|     | C     | Si   | Mn   | P     | S     | Cr    | Mo   | Ni    | Cu   | N      | Co   |
|-----|-------|------|------|-------|-------|-------|------|-------|------|--------|------|
| Min |       |      |      |       |       | 16,50 | 2,00 | 11,00 |      |        |      |
| Max | 0,030 | 1,00 | 2,00 | 0,045 | 0,030 | 18,50 | 2,50 | 14,00 | 0,70 |        |      |
|     | 0,022 | 0,40 | 1,77 | 0,036 | 0,029 | 17,15 | 2,01 | 11,00 | 0,37 | 0,0220 | 0,20 |

|  |      |   |      |  |      |  |
|--|------|---|------|--|------|--|
| Visual and dimensional inspection<br>Besichtigung und Ausmessung<br>Control visual y dimensional | O.K. | Radioactivity inspection<br>Radioaktivitätskontrolle<br>Control de Radioactividad | O.K. | Antimixing test<br>Spektroskop Verwechslungspr<br>Antimezcla | O.K. | Grain Size<br>Korngröße<br>Tamaño de grano |
|--|------|---|------|--|------|--|

Remarks - Bemerkungen - Observaciones

IC test acc./IK prüfung nach ASTM A 262 E.13. OK

**FLOW TECHNOLOGY LTD**  
TEST CERTIFICATE  
VERIFIED TRUE  
COPY OF ORIGINAL

F11755  
9/16" MEDIUM PRESSURE COLLAR 316L

EDV / EDP  
Acc. EN 10.204  
Alfredo Molina  
Certification  
Mng.

Works Inspector  
Der Werkssachverständige  
Inspector de fábrica