

Larrondo LOIU (VIZCAYA) España  
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Quality Management System Approved CERT. Nº SGI 6000360

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°   |  | 135959   |      | Date - Datum - Fecha<br>13 - 12 - 2012     |  |        |      |
| Our order N°<br>Werks - Nr<br>N° de Referencia   |                                 | 500395   |   | Heat<br>Schmelze<br>Colada   |  | 343293   |      | Your order N°<br>Bestell - Nr<br>Pedido N° |  |        |      |
| 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 25,4 mm   |                                 | Tolerance - Toleranz<br>Tolerancia<br>k 12 / ISO 286-1 / 10060 |   | Bundles<br>Bunde<br>Bultos   |  | 1  |      | Bars<br>Stäbe<br>Barras                    |  |        |      |
|  |                                 |  |   |  |  |  |      | Weight<br>Gewicht<br>Peso<br>1175 Kg       |  |        |      |
| Requirements - Anforderungen - Exigencias  |                                 |  |   |  |  |  |      |  |  |        |      |
| EN 10.088-3.2005.<br>EN 10.272-2007.<br>ASTM A 182 / A 182M-11a.<br>ASTM A 479 / A 479M-11.<br>ASTM A 276-10.<br>ASME SA 479 / SA 479M-11a.<br>NACE MR-0175-2003/ISO 15156-3 2009.<br>SAE AMS 5653F-02.<br>316S31AV-1.4404-1.4401-TP.316L-TP.316.<br>PED 97/23/EC, Annex I, Parag.4.3/DGR 97/23/EG |                                 |  |   |  | Anhang I Bsatz 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/Hilfper temple-Turned/Drehen/Torneado-  |                                 |  |   |  |  |  |      |  |  |        |      |
| Test results - Ergebnis der Prüfungen - Resultados de los ensayos  |                                 |  |   |  |  |  |      |  |  |        |      |
| Dimension of Specimen<br>Abmessungen des Probestabes<br>Medida de las probetas   |                                 | Rp0,2%   | Rp 1%   | Rm   | A  | A  | Z    | Hardness                                   | Impact test / Kerschlag / Resiliencia                                  |        |      |
| RD. 10,00 mm.  |                                 | N/mm2  | N/mm2   | N/mm2  | %L 5D  | %L 4D  | %    | Härte<br>HBw                               | ISO V Jules  |        |      |
| Min.   |                                 | 190  | 225   | 490  | 40   |  |      |  |  |        |      |
| Max.   |                                 |  |   |  |  |  |      |  |  |        |      |
| Temperature °C<br>20   | Spec. N°<br>Probe Nr.<br>Pro N° | 1  | 346   | 394  | 618  | 47   | 72   | 179  |  |        |      |
|  |                                 |  |   |  |  |  |      |  |  |        |      |
|  | 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   |        |      |
|  | 0,024                           | 0,32   | 1,79  | 0,032  | 0,027  | 17,25  | 2,06 | 11,00                                      | 0,39   | 0,0270 | 0,19 |
| Visual and dimensional inspection<br>Besichtigung und Ausmessung<br>Control visual y dimensional   |                                 |  | Radioactivity inspection<br>Radioaktivitätskontrolle<br>Control de Radioactividad |  |  | Antimixing test<br>Spektroskopische Verwechslungspr<br>Antimezcla  |      |  | Grain Size<br>Korngröße<br>Tamaño de grano                             |        |      |
| O.K.   |                                 |  | O.K.  |  |  | O.K.   |      |  |  |        |      |
| Remarks - Bemerkungen - Observaciones  |                                 |  |   |  |  |  |      |  |  |        |      |
| IC test acc./IK prüfung nach ASTM A 262 E.02. OK   |                                 |  |   |  |  | <b>FLOW TECHNOLOGY LTD</b><br><b>TEST CERTIFICATE</b><br><b>VERIFIED TRUE</b><br><b>COPY OF ORIGINAL</b> |      |  | EDV / EDP<br>Acc. EN 10.204<br>Alfredo Molina<br>Certification<br>Mng. |        |      |
| F9661  |                                 |  |   |  |  |  |      |  |  |        |      |
| 9/16" JIC Swivel x Swivel 90° Elbow 10K 316L   |                                 |  |   |  |  |  |      |  | Works Inspector<br>Der Werkssachverständige<br>Inspector de fábrica    |        |      |