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

FLOW TECHNOLOGY LTD

TEST CERTIFICATE  
VERIFIED TRUE  
COPY OF ORIGINAL

ACEROS INOXIDABLES

OLARRA

OLARRA U.K. LTD.  
FOREST PARK - CLEOBURY MORTIMER  
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Trade Mark - Zeichen des Lieferwerkes  
Anagrama del suministrador



Works Inspector Stamp - Werkssachverständiger  
Sello del Inspector

3

|   |                                 |   |   |  |   |  |        |  |  |        |      |
|---|---------------------------------|---|---|--|---|--|--------|--|--|--------|------|
| Certificate type - APZ Nach<br>Certificado tipo   |                                 | EN 10204/3.1  |   | Certificate n° - Prüf-Nr<br>Certificado n°   |   | 281065   |        | Date - Datum - Fecha<br>15 - 07 - 2016     |  |        |      |
| Our order N°<br>Werks - Nr<br>N° de Referencia  |                                 | 602774  |   | Heat<br>Schmelze<br>Colada   |   | 415794   |        | 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>HEXAGON 19,05 mm   |                                 | Tolerance - Toleranz<br>Tolerancia<br>h 11 /DIN 176 |   | Bundles<br>Bunde<br>Bultos   |   | 2  |        | Bars<br>Stäbe<br>Barras                    |  |        |      |
|   |                                 |   |   |  |   | 159  |        | Weight<br>Gewicht<br>Peso<br>1212 Kg       |  |        |      |
| Requirements - Anforderungen - Exigencias   |                                 |   |   |  |   |  |        |  |  |        |      |
| EN 10.088-3.2014.<br>EN 10.272-2007.<br>ASTM A 182 / A 182M-15.<br>ASTM A 479 / A 479M-15.<br>ASTM A 276-16a.<br>ASME SA 479 / SA 479M-15<br>SAE AMS 5653H-12.<br>NACE MR-0175/ISO 15156-3 2009.<br>316S31AV-1.4404-1.4401-Type 316-Type 316L.<br>PED 97/23/EC, Annex I, Parag.4.3/DGR 97/23/EG |                                 |   |   |  | Anhang I Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC |  |        |  |  |        |      |
| Melting process / Erschmelzungsart / Proceso de Fusión<br>E.A.F. / A.O.D.   |                                 |   |   | Heat treatment / Wärmebehandlung / Tratamiento térmico<br>1060C 4H/Std WATER/WASSER/AGUA |   |  |        |  |  |        |      |
| Solution annealed/Abgeschreckt/Hipertemple-Cold drawn/Gezogen/Estirado-   |                                 |   |   |  |   |  |        |  |  |        |      |
| 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  | A<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   | 457   | 549  | 633   | 38   | 41     | 73   | 207  |        |      |
|   | 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   |        |      |
|   | 0,018                           | 0,41  | 1,68  | 0,035  | 0,027   | 17,00  | 2,01   | 11,10                                      | 0,35   | 0,0280 | 0,21 |
| Visual and dimensional inspection<br>Besichtigung und Ausmessung<br>Control visual y dimensional  |                                 |   | Radioactivity inspection<br>Radioaktivitätskontrolle<br>Control de Radioactividad |  |   | Antimixing test<br>Spektroskop 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.14. OK<br>Crack control/Rissgeprüft acc. EN 10277-1 class 2. OK   |                                 |   |   |  |   |  |        |  |  |        |      |
| F12849<br>3/8" NPT HEX NIPPLES 10K 316L   |                                 |   |   |  |   |  |        |  |  |        |      |
| EDV / EDP<br>Acc. EN 10.204<br>Marian Tejedo<br>Quality Mng.<br><br>Works Inspector<br>Der Werkssachverständige<br>Inspector de fábrica   |                                 |   |   |  |   |  |        |  |  |        |      |