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Management Systems  
Certified by  
**LRQA**  
ISO 9001 / SGI 6800360  
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  
NR KIDDERMINSTER - DY 14 9BD - 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°                |       | 308002   |      | Date - Datum - Fecha<br>30 - 03 - 2017     |                                       |   |                           |         |
| Our order N°<br>Werks - Nr<br>N° de Referencia   |                                 | 617243  |              | Heat<br>Schmelze<br>Colada                                |       | 428623   |      | 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  |                                 | ROUND 25,4 mm   |              | Tolerance - Toleranz<br>Tolerancia                        |       | k 12 /ISO 286-1 /10060   |      | Bundies<br>Bunde<br>Bultos                 | 2                                     | Bars<br>Stäbe<br>Barras   | Weight<br>Gewicht<br>Peso | 1226 Kg |
| Requirements - Anforderungen - Exigencias  |                                 |   |              |   |       |  |      |  |                                       |   |                           |         |
| EN 10.088-3.2014.<br>EN 10.272-2007.<br>ASTM A 182/A 182M-16.<br>ASTM A 479 / A 479M-15.<br>ASTM A 276/A 276M-16a.<br>ASME SA 479 / SA 479M-15<br>NORSOK M-630 and MDS S01.<br>SAE AMS 5653H-12.<br>NACE MR-0175/ISO 15156-3 2015.<br>NACE MR-0103/ISO 17945-2015. |                                 |   |              |   |       | 316S31AV-1.4404-1.4401-Type 316-Type 316L.<br>PED 2014/68/EU, Annex I, Parag.4.3/DGR 2014/68/EU<br>Anhang I Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC |      |  |                                       |   |                           |         |
| Melting process / Erschmelzungsart / Proceso de Fusión   |                                 |   |              | Heat treatment / Wärmebehandlung / Tratamiento térmico    |       |  |      |  |                                       |   |                           |         |
| E.A.F. / A.O.D.  |                                 |   |              | 1060C 4H/Std WATER/WASSER/AGUA                            |       |  |      |  |                                       |   |                           |         |
| Solution annealed/Abgeschreckt/Hipertemple-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     | Δ  | Z    | Hardness                                   | Impact test / Kerschlag / Resiliencia |   |                           |         |
| RD. 10,00 mm.  |                                 | N/mm2<br>MPA  | N/mm2<br>MPA | N/mm2<br>MPA  | %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   | 317          | 361   | 587   | 50   | 53   | 74   | 170                                   |   |                           |         |
|  |                                 |   |              |   |       |  |      |  |                                       |   |                           |         |
|  | 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                                  |   |                           |         |
|  | 0,015                           | 0,69  | 1,72         | 0,034   | 0,027 | 17,05  | 2,02 | 11,05                                      | 0,33                                  | 0,0215  | 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>Spektrsk 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. 15. OK  |                                 |   |              |   |       |  |      |  |                                       |   |                           |         |
| F13549<br>1" -12 RH M TYPE CAP 316L  |                                 |   |              |   |       |  |      |  |                                       |   |                           |         |
|  |                                 |   |              |   |       |  |      |  |                                       | EDV / EDP<br>Acc. EN 10.204<br>Marian Tejedo<br>Quality Mng.        |                           |         |
|  |                                 |   |              |   |       |  |      |  |                                       | Works Inspector<br>Der Werkssachverständige<br>Inspector de fábrica |                           |         |