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

ACEROS INOXIDABLES

**OLARRA**

**FLOW TECHNOLOGY LTD**

**TEST CERTIFICATE  
VERIFIED TRUE  
COPY OF ORIGINAL**

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°  |            | 291478   |        | Date - Datum - Fecha<br>11 - 11 - 2016     |   |         |      |
| Our order N°<br>Werks - Nr<br>N° de Referencia   |                                 | 616080                 |   | Heat<br>Schmelze<br>Colada                  |            | 421933   |        | Your order N°<br>Bestell - Nr<br>Pedido N° |   | OL7509  |      |
| 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  |                                 | HEXAGON 27 mm          |   | Tolerance - Toleranz<br>Tolerancia          |            | h 11 /DIN 176  |        | Bundles<br>Bunde<br>Bultos                 |   | 5       |      |
|  |                                 |                        |   |   |            |  |        | Bars<br>Stäbe<br>Barras                    |   | 165     |      |
|  |                                 |                        |   |   |            |  |        | Weight<br>Gewicht<br>Peso                  |   | 2543 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>NACE MR-0103-12/ISO 17945-2015.<br>NORSOK M-630 and MDS S01. |                                 |                        |   |   |            | 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   Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC |        |  |   |         |      |
| Melting process / Erschmelzungsart / Proceso de Fusión   |                                 |                        |   |   |            | Heat treatment / Wärmebehandlung / Tratamiento térmico   |        |  |   |         |      |
| <b>E.A.F. / A.O.D.</b>   |                                 |                        |   |   |            | 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 / Kerschschlag / 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                      | 428   | 518   | 640        | 40   | 43     | 71   | 197   |         |      |
| 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  |         |      |
|  | 0,017                           | 0,63                   | 1,65  | 0,034                                       | 0,026      | 17,25  | 2,00   | 11,00                                      | 0,31  | 0,0210  | 0,17 |
| Visual and dimensional inspection<br>Besichtigung und Ausmessung<br>Control visual y dimensional   |                                 |                        | Radioactivity inspection<br>Radioaktivitätskontrolle<br>Control de Radioactividad |   |            | Antimixing test<br>Spektrosk 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  |                                 |                        |   |   |            |  |        |  |   |         |      |
| F13027<br>9/16" Medium Pressure x 1/2" BSPP Cone Seat Male x Male Adaptor 20K  |                                 |                        |   |   |            |  |        |  |   |         |      |
| EDV / EDP<br>Acc. EN 10.204<br>Marian Tejado<br>Quality Mng.<br><br>Works Inspector<br>Der Werkssachverständige<br>Inspector de fábrica  |                                 |                        |   |   |            |  |        |  |   |         |      |