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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**  
**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 <b>EN 10204/3.1</b>   |                                  | Certificate n° - Prüf-Nr<br>Certificado n° <b>291060</b>   |  | Date - Datum - Fecha<br><b>08 - 11 - 2016</b>            |                                    |  |        |                          |   |   |      |
| Our order N°<br>Werks - Nr <b>617559</b><br>N° de Referencia  |                                  | Heat<br>Schmelze <b>421933</b><br>Colada                   |  | Your order N°<br>Bestell - Nr <b>0L7533</b><br>Pedido N° |                                    |  |        |                          |   |   |      |
| Steel Grade<br>Werkstoff <b>316-S-11 AV</b><br>Calidad  |                                  |  | According to<br>Entsprechend <b>BS 970:PART 3:1991.</b><br>Corresponde   |  |                                    |  |        |                          |   |   |      |
| Shape and Size - Gegenstad<br>Perfil y dimensión<br><b>HEXAGON 27 mm</b>  |                                  | Tolerance - Toleranz<br>Tolerancia<br><b>h 11 /DIN 176</b> |  | Bundles<br>Bunde <b>6</b><br>Bultos                      | Bars<br>Stäbe <b>243</b><br>Barras |  |        |                          |   |   |      |
|   |                                  |  |  | Weight<br>Gewicht <b>3824 Kg</b><br>Peso                 |                                    |  |        |                          |   |   |      |
| 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>316S31AV-1.4404-1.4401-Type 316-Type 316L. |                                  |  | 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<br><b>E.A.F. / A.O.D.</b>  |                                  |  | Heat treatment / Wärmebehandlung / Tratamiento térmico<br><b>1060C 4H/Std WATER/WASSER/AGUA</b>                  |  |                                    |  |        |                          |   |   |      |
| <b>Solution annealed/Abgeschreckt/Hipertemple-Cold drawn/Gezogen/Estirado-</b>  |                                  |  |  |  |                                    |  |        |                          |   |   |      |
| 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  | 414  | 501  | 618                                | 42   | 45     | 72                       | 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  |   |      |
|   | 0,017                            | 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 <b>O.K.</b><br>Control visual y dimensional  |                                  |  | Radioactivity inspection<br>Radioaktivitätskontrolle <b>O.K.</b><br>Control de Radioactividad                    |  |                                    | Antimixing test<br>Spektrosk Verwechslungspr <b>O.K.</b><br>Antimezcla |        |                          | Grain Size<br>Korngröße<br>Tamaño de grano              |   |      |
| Remarks - Bemerkungen - Observaciones   |                                  |  |  |  |                                    |  |        |                          |   | EDV / EDP<br>Acc. EN 10.204<br>Marian Tejedo<br>Quality Mng.<br><br>Works Inspector<br>Der Werkssachverständige<br>Inspector de fábrica |      |
| IC test acc./IK prüfung nach ASTM A 262 E.15. OK<br>Crack control/Rissgeprüft acc. EN 10277-1 class 2. OK   |                                  |  |  |  |                                    |  |        |                          |   |   |      |
| F12342<br>9/16" Medium Pressure x 1/2" BSPP Cone Seat Male x Male Adaptor 20K   |                                  |  |  |  |                                    |  |        |                          |   |   |      |