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

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° |            | 291060   |        | Date - Datum - Fecha                        |   | 08 - 11 - 2016          |      |                     |  |                           |  |         |  |
| Our order N°<br>Werks - Nr<br>N° de Referencia  |                                  | 617559                 |   | Heat<br>Schmelze<br>Colada                 |            | 421933   |        | Your order N°<br>Bestell - Nr<br>Pedido N°  |   | 0L7533                  |      |                     |  |                           |  |         |  |
| Steel Grade<br>Werkstoff<br>Calidad   |                                  |                        |   | 316-S-11 AV                                |            |  |        | According to<br>Entsprechend<br>Corresponde |   |                         |      | BS 970:PART 3:1991. |  |                           |  |         |  |
| Shape and Size - Gegenstad<br>Perfil y dimensión<br>HEXAGON 27 mm   |                                  |                        | Tolerance - Toleranz<br>Tolerancia<br>h 11 /DIN 176                               |  |            | Bundles<br>Bunde<br>Bultos   |        | 6   |   | Bars<br>Stäbe<br>Barras |      | 243                 |  | Weight<br>Gewicht<br>Peso |  | 3824 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>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  |                                  |                        |   |  |            | 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                      | 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<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.15. OK<br>Crack control/Rissgeprüft acc. EN 10277-1 class 2. OK   |                                  |                        |   |  |            |  |        |   |   |                         |      |                     |  |                           |  |         |  |
| F12452<br>7/8" JIC Cap - Nut  |                                  |                        |   |  |            |  |        |   |   |                         |      |                     |  |                           |  |         |  |
| EDV / EDP<br>Acc. EN 10.204<br>Marian Tejedo<br>Quality Mng.<br><br>Works Inspector<br>Der Werkssachverständige<br>Inspector de fábrica   |                                  |                        |   |  |            |  |        |   |   |                         |      |                     |  |                           |  |         |  |