



**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>370925</b> | Date - Datum - Fecha<br><b>26 - 11 - 2018</b> |
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| Our order N°<br>Werks - Nr <b>667791</b><br>N° de Referencia | Heat<br>Schmelze <b>463828</b><br>Colada | Your order N°<br>Bestell - Nr <b>OL8592</b><br>Pedido N° |
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| 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 |
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|---|--|-------------------------------------|-----------------------------------|--|
| Shape and Size - Gegenstad<br>Perfil y dimensión<br><b>HEXAGON 56,39 mm</b> | Tolerance - Toleranz<br>Tolerancia<br><b>h 11 /DIN 176</b> | Bundles<br>Bunde <b>3</b><br>Bultos | Bars<br>Stäbe <b>25</b><br>Barras | Weight<br>Gewicht <b>1664 Kg</b><br>Peso |
|---|--|-------------------------------------|-----------------------------------|--|

Requirements - Anforderungen - Exigencias

|   |   |
|---|---|
| EN 10.088-3.2014.<br>EN 10.272-2016.<br>ASTM A 182/A 182M-16.<br>ASTM A 479 / A 479M-17.<br>ASTM A 276/A 276M-17.<br>ASME SA 479 / SA 479M-15<br>SAE AMS 5653H-12.<br>NACE MR-0175/ISO 15156-3 2015.<br>NACE MR-0103/ISO 17945-2015.<br>NORSOK M-630 and MDS S01. | <b>316S31AV-1.4404-1.4401-Type 316-Type 316L.</b><br><b>PED 2014/68/EU, Annex I, Parag.4.3/DGR 2014/68/EU</b><br><b>Anhang I Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC</b> |
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| 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> |
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**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 / Kersbschlag / 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                     | 395                | 442        | 588        | 45     | 48                       | 73   | 179 |

|      | 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 | 0,62 | 1,57 | 0,033 | 0,021 | 17,18 | 2,05 | 11,08 | 0,44 | 0,0190 | 0,29 |

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| 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>Spektrsk Verwechslungspr <b>O.K.</b><br>Antimezcla | Grain Size<br>Korngröße <b>5-6 ASTM E-112-13</b><br>Tamaño de grano |
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| Remarks - Bemerkungen - Observaciones<br>IC test acc./IK prüfung nach ASTM A 262 E.15. OK<br>Crack control/Rissgeprüft acc. EN 10277-1 class 2. OK<br>No welding or weld repair.<br>Free from mercury or radio-activity contamination.<br><br><b>F15076</b><br><b>1" NPT FEM X 1/2" NPT RT MALE HEX ADAPTOR 10K 316L</b> | <b>FLOW TECHNOLOGY LTD</b><br><b>TEST CERTIFICATE</b><br><b>VERIFIED TRUE</b><br><b>COPY OF ORIGINAL</b> | EDV / EDP<br>Acc. EN 10.204<br>Marian Tejedo<br>Quality Mng.<br><br>Works Inspector<br>Der Werkssachverständige<br>Inspector de fábrica |
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We hereby certify that material described herein complies with the requirements agreed on the order.