



**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 nº - Prüf-Nr<br>Certificado nº <b>340438</b> | Date - Datum - Fecha<br><b>31 - 01 - 2018</b> |
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| Our order Nº<br>Werks - Nr <b>647445</b><br>Nº de Referencia | Heat<br>Schmelze <b>449181</b><br>Colada | Your order Nº<br>Bestell - Nr <b>OL8094</b><br>Pedido Nº |
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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 |
|--|--|

|   |  |                                     |                                   |  |
|---|--|-------------------------------------|-----------------------------------|--|
| Shape and Size - Gegenstad<br>Perfil y dimensión<br><b>HEXAGON 41,28 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>98</b><br>Barras | Weight<br>Gewicht <b>3512 Kg</b><br>Peso |
|---|--|-------------------------------------|-----------------------------------|--|

**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-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>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 |
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**FLOW TECHNOLOGY LTD**

**TEST CERTIFICATE**

**VERIFIED TRUE**

**COPY OF ORIGINAL**

|  |   |
|--|---|
| 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%                           | Rp 1% | Rm    | A     | A     | Z  | Hardness | Impact test / Kersbschlag / Resiliencia |     |
|--|----------------------------------|-------|-------|-------|-------|----|----------|---|-----|
|  | N/mm2                            | N/mm2 | N/mm2 | %L 5D | %L 4D | %  | Härte    | ISO V Jules                             |     |
|  | MPA                              | MPA   | MPA   |       |       |    | HBw      |   |     |
| RD. 10,00 mm.  | Min.                             | 325   | 375   | 550   | 20    |    |          |   |     |
|  | Max.                             |       |       |       |       |    |          |   |     |
| Temperature °C<br>20   | Spec. Nº<br>Probe Nr.<br>Pro Nº. | 1     | 401   | 481   | 594   | 44 | 47       | 73                                      | 187 |

|      | 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 |        |      |
|      | 0,019 | 0,61 | 1,57 | 0,032 | 0,028 | 17,15 | 2,07 | 11,00 | 0,32 | 0,0150 | 0,15 |

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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 Verwechlungspr <b>O.K.</b><br>Antimezcla | Grain Size<br>Korngröße <b>5-6 ASTM E-112-13</b><br>Tamaño de grano |
|--|---|--|---|

|  |   |
|--|---|
| <p style="text-align: center;"><b>Remarks - Bemerkungen - Observaciones</b></p> IC test acc./IK prüfung nach ASTM A 262 E.15. OK<br>Crack control/Rissgeprüft acc. EN 10277-1 class 2. OK<br><br><b>F14368</b><br><b>1" X 1/4" BSPP C/S M/M RED ADAPTOR 10K 316L</b> | <b>EDV / EDP</b><br><b>Acc. EN 10.204</b><br><b>Marian Tejado</b><br><b>Quality Mng.</b><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.