Larrondo LOIU (VIZCAYA) España
P.O. Box 1.323/48080 Bilbao
Tel. 34-(4) 4 71 13 00
Fax.34-(4) 4 53 16 36

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 3

| Certificate type - APZ Nach / Certificado tipo | Certificate nº - Prüf-Nr / Certificado nº | Date - Datum - Fecha |
|---|---|---|
| EN 10204/3.1 | 328000 | 11 - 10 - 2017 |

| Our order Nº / Werks - Nr / Nº de Referencia | Heat / Schmelze / Colada | Your order Nº / Bestell - Nr / Pedido Nº |
|---|---|---|
| 647461 | 440131 | OL8092 |

| Steel Grade / Werkstoff / Calidad | According to / Entsprechend / Corresponde |
|---|---|
| 316-S-11 AV | BS 970:PART 3:1991. |

| Shape and Size - Gegenstad / Perfil y dimensión | Tolerance - Toleranz / Tolerancia | Bundles / Bunde / Bultos | Bars / Stäbe / Barras | Weight / Gewitcht / Peso |
|---|---|---|---|---|
| HEXAGON 56,39 mm | h 11 /DIN 176 | 6 | 52 | 3467 Kg |

Requirements - Anforderungen - Exigencias

EN 10.088-3.2014.
EN 10.272-2007.
ASTM A 182/A 182M-16.
ASTM A 479 / A 479M-17.
ASTM A 276/A 276M-17.
ASME SA 479 / SA 479M-15
SAE AMS 5653H-12.
NACE MR-0175/ISO 15156-3 2015.
NACE MR-0103/ISO 17945-2015.
NORSOK M-630 and MDS S01.

316S31AV-1.4404-1.4401-Type 316-Type 316L.
PED 2014/68/EU, Annex I, Parag.4.3/DGR 2014/68/EU
Anhang I Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC

| Melting process / Erschmelzungsart / Proceso de Fusión | Heat treatment / Wärmebehandlung / Tratamiento térmico |
|---|---|
| **E.A.F. / A.O.D.** | 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 / Abmessungen des Probestabes / Medida de las probetas | | Rp0,2% N/mm2 MPA | Rp 1% N/mm2 MPA | Rm N/mm2 MPA | A %L 5D | A %L 4D | Z % | Hardness Härte HBw | Impact test / Kersbschlag / Resiliencia ISO V Jules |
|---|---|---|---|---|---|---|---|---|---|
| RD. 10,00 mm. | Min. | 325 | 375 | 550 | 20 | | | | |
| | Max. | | | | | | | | |
| Temperature ºC: 20 | Spec. Nº. / Probe Nr. / Pro Nº.: 1 | 478 | 565 | 666 | 38 | 41 | 71 | 212 | |
| | | | | | | | | | |

| | 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 | 0,56 | 1,60 | 0,035 | 0,027 | 17,15 | 2,00 | 11,00 | 0,39 | 0,0225 | 0,16 |

| Visual and dimensional inspection / Besichtigung und Ausmessung / Control visual y dimensional | Radioactivity inspection / Radioaktivitätskontrolle / Control de Radioactividad | Antimixing test / Spektrosk Verwechslungspr / Antimezcla | Grain Size / Korngrösse / Tamaño de grano |
|---|---|---|---|
| O.K. | O.K. | O.K. | 5-6 ASTM E-112-13 |

Remarks - Bemerkungen - Observaciones

IC test acc./IK prüfung nach ASTM A 262 E.15. OK
Crack control/Rissgeprüft acc. EN 10277-1 class 2. OK

F14169
9/16" MP MALE X 1" NPT FEMALE ADAPTOR 10K 316L

EDV / EDP
Acc. EN 10.204
Marian Tejedo
Quality Mng.

Works Inspector
Der Werkssachverständige
Inspector de fábrica

We hereby certify that material described herein complies with the requirements agreed on the order.

Firmado digitalmente por / Signed digitally by:
ACEROS INOXIDABLES OLARRA SA - CIF A48663546
Fecha / Date:11-10-2017 16:27