



CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : **EN 10204 (2004) , 3.1**
 Nach/According to/Selon

Certificato nr. **MEST861555 / 2016 / 1**
 Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
VALBRUNA U.K. LTD.
OLDBURY ROAD
B70 9BH - WEST BROMWICH B70 9BH GB - GB

Stato di fornitura : **Hot rolled - Annealed Cold Drawn**
 Lieferzustand
 Delivery state
 Etat de livraison

Produttore :
 Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: **604049553 Sheffield**
 Bestell
 Your order
 Commande

Tipo di Elaborazione: **E+AOD**
 Erschmelzungsart
 Melting process
 Mode d'elaboration

Marchi di Fabbrica:
 Zeichen des Lieferwerkes
 Trade marks
 Sigles de l'usine productrice



Conferma ordine nr: **EI16004068**
 Werks/Our Order/Ref nr.

Qualità: **1.4401/1.4404/316/316L**
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:
 Stempel des Werkssachverständigen
 Inspector's stamp/Poinçon de l'assesseur

MR

Avviso di Spedizione: **D-VI16010993**
 Lieferanzeige/Packing list/B.L.

Marca: **MVAPML MAXIVAL**
 Markenbezeichnung
 Brand / Nuance

Punzonatura: **1.4401/4/316/L**
 Kennzeichnung
 Marking
 Marquage

SPECIFICHE :

Anforderungen / Requirements / Exigences

Note:

Aufzeichnungen / Notes / Notes

VAL STOCK 2010 1.4404/316L A,CF
 AISI 316
 AISI 316L
 AMS 5648 L S31600 A
 AMS 5653 H S31603 A,CF
 ASME SA182 2013 S31600 A (0)
 ASME SA182 2013 S31603 A (1)
 ASME SA276 2013 S31600 A,CF (2)
 ASME SA276 2013 S31603 A,CF (3)
 ASME SA479 2013 S31600 A (4)
 ASME SA479 2013 S31603 A (5)
 ASTM A182 2015 S31600 A (6)
 ASTM A182 2015 S31603 (7)
 ASTM A262 2013 PRACTICE E
 ASTM A276 2016 S31600 A,CF
 ASTM A276 2016 S31603 A,CF
 ASTM A314 2008 S31600
 ASTM A314 2008 S31603
 ASTM A370 2014 .
 ASTM A479 2015 S31600 A
 ASTM A479 2015 S31603 A
 EN 10088-3 2005 1.4401 A,CF
 EN 10088-3 2005 1.4404 A,CF
 EN 10272 2007 1.4401 A,CF
 EN 10272 2007 1.4404 A,CF
 ISO 6892-1 2009 .
 NACE MR0103 2010 S31600 A
 NACE MR0103 2010 S31603 A
 NACE MR0175 2009 S31600 A (8)
 NACE MR0175 2009 S31603 A (9)
 QQ-S-763 F 316 A,CF
 QQ-S-763 F 316L A,CF

(0)SEC.II PT.A 2013 EDITION For products machined directly from bar refer to ASME SA479.

(1)SECTION II PT.A 2013 EDITION For products machined directly from bar refer to ASME SA479.

(2)SEC.II PT.A 2013 EDITION

(3)SECTION II PT.A 2013 EDITION

(4)SECTION II PT.A 2013 EDITION

(5)SECTION II PT.A 2013 EDITION

(6)For products machined directly from bar refer also to ASTM A479.

(7)For products machined directly from bar refer also to ASTM A479.

(8)ANSI/NACE MR0175/ISO 15156-3, second edition 2009-10-15 Technical circular 1:2011 Published 2011-06-14

(9)ANSI/NACE MR0175/ISO 15156-3, second edition 2009-10-15 Technical circular 1:2011 Published 2011-06-14

FLOW TECHNOLOGY LTD
TEST CERTIFICATE
VERIFIED TRUE
COPY OF ORIGINAL

Tolleranza: h11 - DIN668/EN10278

Tolleranza/Allowance/Tolerance

| Pos. nr. Pos. nr. Item nr. Nr. de poste | Oggetto Gegenstand Product description Descrip. du produit | Dimensioni - mm | | Lunghezza - mm Länge Length Longueur | Colata Schmelze Heat Coulée | Pezzi Stückzahl Pieces Pieces | Peso - KG Gewicht Weight Poids | Lotto nr. Losnr. Lot nr. Lot nr. |
|--------------------------------------------------|---------------------------------------------------------------------|---------------------------------------|--|-----------------------------------------------|--------------------------------------|----------------------------------------|-----------------------------------------|-------------------------------------------|
| | | Abmessungen Dimension Dimension | | | | | | |
| 0010 | Hexagon | 32,000 | | 3170/ 3180 | 269210 | | 800,0 | 533405950 |

F11693 - 3/8"BSP P FIXED FEMALE X 1/2"NPT MALE 10K ADAPTOR 316L

Vicenza, 27/05/16

VCQ008

(Mod. MCE2) WSP721465CECF354A81B3778D13EB101558

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M.Rizzotto

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TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüfung auf lieferbarem produkt test a l'etat de fourniture Prueba sobre el material así como entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

| TEST | Provetta/ Probetab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm | °C | Posiz. Saggio Probetage Location Emplacement 1) | Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2 | Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2 | Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2 | Allungamento Bruchdehnung Elongation Allongement | | Strizione Einschnürung Reduction of area Striction | | Resilienza Kerbschlagarbeit Impact Value Resilience KV J | | Durezza Haerte Hardness Durete HB | |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------|-------------------------------------------------------------|----------------|--------------------------------------------------------------------------------|-----|------------------------------------------------------|-----|
| | | | | | | | A5 % | E 4d % | Z % | RA % | | | | |
| Valori richiesti Anforderungen/Required values Valeurs demandées | | min max | | 207 | 235 | 517 900 | 20 | 30 | - | 50 | 100 | | 140 235 | |
| A | 10 | 20 | L | 428 | 515 | 636 | 47 | 49 | 66 | 66 | 193 | 178 | 193 | 221 |

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado

| TEST | min | max |
|----------------------------|-----|-----|
| A Grain size for ASTM E112 | | 6 |

Mechanical properties according to ASTM A370.
 Tensile testing according to EN ISO 6892-1

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

| Colata /Heat Schmelze/Coulée | min - max | - | 1,25 2,00 | 16,50 18,00 | 2,00 2,50 | - 1,00 | 10,00 13,00 | - 0,040 | - 0,030 | - 0,100 | - | - | - | - | - |
|---------------------------------|--------------|------|--------------|----------------|--------------|-----------|----------------|------------|------------|------------|---|---|---|---|---|
| | C % | Si % | Mn % | Cr % | Mo % | Cu % | Ni % | P % | S % | N % | | | | | |
| 269210 | 0,019 | 0,58 | 1,49 | 16,97 | 2,04 | 0,49 | 10,20 | 0,030 | 0,025 | 0,057 | | | | | |

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: **ASTM A262-Practice E**

| Test | Heat treatment before test | Length of Period (h) | Test temp (°C) | Bend Angle (°) | Ø spindle (mm) | Result of visual inspection at 20 x magnification after bend test | Result |
|-------------------------|----------------------------|----------------------|----------------|----------------|----------------|-------------------------------------------------------------------|---------------------|
| Intergranular corrosion | Sensitization | 15 | boil | 180 | 5 | Absence of cracks | SATISFACTORY |

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: **UNI EN ISO 3651-2 Method A**

| Test | Heat treatment before test | Length of Period (h) | Test temp (°C) | Bend Angle (°) | Ø spindle (mm) | Result of visual inspection at 20 x magnification after bend test | Result |
|-------------------------|----------------------------|----------------------|----------------|----------------|----------------|-------------------------------------------------------------------|---------------------|
| Intergranular corrosion | Sensitized T1 | 20 | boil | 90 | 5 | Absence of cracks | SATISFACTORY |

Reduction ratio = **36,8 : 1**
 Solution annealed **1070°C** for 1 h / water

Vicenza, 27/05/16

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Sono state soddisfatte tutte le condizioni richieste
 Die gestellten Anforderungen sind it. Anlage erfüllt
 The material has been furnished in accordance with the requirements
 Le matériel à été trouvé conforme aux exigences

Controllo antimescolanza: **OK**
 Verwechslungsprüfung: spectralanalytisch durchgeführt
 Antimixing testing performed: **OK**
 Contrôle antimelange fait: r.a.s.

Controllo visivo e dimensionale: **soddisfa le esigenze**
 Besichtigung und Ausmessung: ohne Beanstandung
 Visual inspection and dimensional checks: **satisfactory**
 Contrôle visuel et dimensions: **satisfaisant**

Melted and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination through Portal System when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2008, ISO/TS16949 : 2009, AS 9100C

The Quality Management System is Certified acc. Pressure Equipment Directive '97/23/EC' Annex 1,s.,4.3 by TUEV and LLOYD'S
 Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
 Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
 The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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