



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

In conformità a : **EN 10204 (2004) , 3.1**

Certificato nr. **MEST919001 / 2016 / 1**

Nach/According to/Selon

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: **607050130 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: **EI16007827**  
 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-VI16021569**  
 Lieferanzeige/Packing list/B.L.

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

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

### SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

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 2015 S31600 A (0)  
 ASME SA182 2015 S31603 A (1)  
 ASME SA276 2015 S31600 A,CF (2)  
 ASME SA276 2015 S31603 A,CF (3)  
 ASME SA479 2015 S31600 A (4)  
 ASME SA479 2015 S31603 A (5)  
 ASTM A182 2015 S31600 A (6)  
 ASTM A182 2015 S31603 (7)  
 ASTM A262 2015 PRACTICE E  
 ASTM A276 2016 S31600 A,CF  
 ASTM A276 2016 S31603 A,CF  
 ASTM A314 2015 S31600  
 ASTM A314 2015 S31603  
 ASTM A370 2015 .  
 ASTM A479 2016 S31600 A  
 ASTM A479 2016 S31603 A  
 EN 10088-3 2014 1.4401 A,CF  
 EN 10088-3 2014 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  
 MDS S01 5 316 A (A)  
 ASTM A479 2016 S31600 A

(0)SEC.II PT.A 2015 EDITION For products machined directly from bar refer to ASME SA479.  
 (1)SECTION II PT.A 2015 EDITION For products machined directly from bar refer to ASME SA479.  
 (2)SEC.II PT.A 2015 EDITION  
 (3)SECTION II PT.A 2015 EDITION  
 (4)SECTION II PT.A 2015 EDITION  
 (5)SECTION II PT.A 2015 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  
 (A)Norsok-standard M-630 Edition 6, October 2013

**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	Colata	Pezzi	Peso - KG	Lotto nr.
		Abmessungen Dimension Dimension	Länge Length Longueur	Schmelze Heat Coulée	Stückzahl Pieces Pieces	Gewicht Weight Poids	Losnr. Lot nr. Lot nr.
0010	Hexagon	32,000	3190/ 3190	269994		935,0	601808310

**F12816 - 3/8" NPT HEX FULL COUPLING 10K 316L**

**Vicenza, 21/10/16**

VCC005 - MEST944031

(Mod. MCE2) WSPFA0E209B33FD42889005689CECBA8D6B

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

**M.Rizzotto**

Pagina - 1 di 3



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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/ Probestab Specimen/Eprouvette Larg.diam. Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento		Resistenza	Allungamento		Strizione		Resilienza		Durezza	
				Streckgrenze Yield Stress Limite elastique <b>Rp 0,2%</b> N/mm2	Streckgrenze Yield Stress Limite elastique <b>Rp 1%</b> N/mm2	Zugfestigkeit Tensile strength Resistance à traction <b>Rm</b> N/mm2	Bruchdehnung Elongation Allongement <b>A5</b> %	<b>E 4d</b> %	Einschnürung Reduction of area Striction <b>Z</b> %	<b>RA</b> %	Kerbschlagarbeit Impact Value Resilience <b>KV</b> J	<b>HB</b>		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		207	235	517 900	20	35	-	50	100	140 235		
A	10	20	L	492	586	659	43	45	68	68	200	197	176	232

### 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		5

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	0,030	1,00	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 %					
269994	0,015	0,55	1,52	16,67	2,05	0,43	10,09	0,029	0,025	0,061					

### 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	<b>SATISFACTORY</b>

### 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	<b>SATISFACTORY</b>

Reduction ratio = 34,7 : 1  
 Solution annealed 1070°C for 1 h / water

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Pagina - 2 di 3



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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 materiel a 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 and 2014/68/EU 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.

**Vicenza, 21/10/16**

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Pagina - 3 di 3