



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

In conformità a : **EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1**  
 Nach/According to/Selon

Certificato nr. **MEST179290 / 2018 /**  
 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 PROCESSED**  
 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore :  
 Hersteller/Item/Usine productrice

Ordine nr: **705052028 Sheffield**  
 Bestell  
 Your order  
 Commande

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

**ACCIAIERIE VALBRUNA S.P.A.**  
 Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Trade marks  
 Sigles de l'usine productrice

Conferma ordine nr: **EI17005633**  
 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'essayeur

Avviso di Spedizione: **D-VI18000358**  
 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 M 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 2016 S31600 A (6)  
 ASTM A182 2016 S31603 (7)  
 ASTM A262 2015 PRACTICE E  
 ASTM A276 2017 S31600 A,CF  
 ASTM A276 2017 S31603 A,CF  
 ASTM A314 2015 S31600  
 ASTM A314 2015 S31603  
 ASTM A370 2017  
 ASTM A479 2017 S31600 A  
 ASTM A479 2017 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 2015 S31600 A (8)  
 NACE MR0103 2015 S31603 A (9)  
 NACE MR0175 2015 S31600 A (A)  
 NACE MR0175 2015 S31603 A (B)  
 QQ-S-763 F 316 A,CF  
 QQ-S-763 F 316L A,CF

- (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 MR0103/ISO 17945 November 23, 2015
- (9)ANSI/NACE MR0103/ISO 17945 November 23, 2015
- (A)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
- (B)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

**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 Abmessungen Dimension Dimension	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.
0010	Hexagon	31,750	3060/ 3060	429779		1158,0	713510320

**Vicenza, 05/01/18**

VQ0012 - MEST179290

(Mod. MCE2) WSPFD48F4C56814D42638C2186CF6CD907

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

**M.RIZZOTTO** *[Signature]*

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MR

Avviso di Spedizione: D-VI18000358  
 Lieferanzeiger/Packing list/V.L.

Marca: MVAPML MAXIVAL  
 Markenbezeichnung: Brand / Nuance

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

### TEST ALLO STATO DI FORNITURA

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

TEST	Provetta/ Probostab Specimen/Eprouvette Larg. diam. Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Procentage Location Embowment 1)	1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential			Allungamento Bruchdehnung Elongation Allongement		Strizione Einachnührung Reduction of area Striction		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB	
				Sneramento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Sneramento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	A5 %	E 4d %	Z %	RA %	KV J			HB	
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		207	235	517	20	30	-	50	100			140	
A	10	20	L	538	481	689	37	40	68	68	178	180	185	229	235

### TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material asi 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	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 %				
429779	0,017	0,52	1,49	17,00	2,03	0,46	10,11	0,026	0,030	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	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 = 37,5 : 1  
 Material solution annealed 1080° C for 1h/water cooled.

Vicenza, 05/01/18

VCCQ012 - MEST179290

(Mod. MCE2) WSPFD48BF4C5881404298C2184CF82D907

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

M. RIZZOTTO

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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 à été trouvé conforme aux exigences

Controllo antimescolanza: OK  
Verwechslungsprüfung: spectralanalytisch durchgeführt  
Antimixing testing performed: OK  
Contrôle antimélange 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, IATF 16949 : 2016, 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, 05/01/18

VCQ012 - MEST179290

(Mod. MCE2) WSPFD48MFC56814042936C218MCFR2D007

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