



# Acciaierie Valbruna S.p.A.

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

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

Certificato nr. **MEST024712 / 2017 /**  
 Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Cliet  
**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

Ordine nr: **607050114 Manchester Stoc**  
 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: **E116007779**  
 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



Avviso di Spedizione: **D-VI17005020**  
 Lieferanzeige/Packing list/B.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 así como entregado

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

TEST	Provetta/ Probestab Specimen/Eprovette Larg.diam. Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probestage 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 Einziehung 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	464	512	685	45	49	68	68	178	184	187	229

### 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

**FLOW TECHNOLOGY LTD**  
**TEST CERTIFICATE**  
**VERIFIED TRUE**  
**COPY OF ORIGINAL**

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 %					
429295	0,016	0,48	1,46	16,82	2,01	0,43	10,06	0,030	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 = 30,6 : 1



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 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

**MR**

Avviso di Spedizione: **D-VI17005020**  
 Lieferanzeige/Packing list/B.L.

Marca: **MVAPML MAXIVAL**  
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 Brand / Nuance

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

Controllo antimiscelanza: **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, 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, **16/02/17**

VCC008 - MEST024712

(Mod. MCE2) WSP16A3BF2105497482P00EAAC6ACE

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

**M. RIZZOTTO**

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### SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

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)

(0)SEC.II PT.A 2015 EDITION For products machined directly from bar refer to ASME SA479.

ASME SA182 2015 S31603 A (1)

(1)SECTION II PT.A 2015 EDITION For products machined directly from bar refer to ASME SA479.

ASME SA276 2015 S31600 A,CF (2)

(2)SEC.II PT.A 2015 EDITION

ASME SA276 2015 S31603 A,CF (3)

(3)SECTION II PT.A 2015 EDITION

ASME SA479 2015 S31600 A (4)

(4)SECTION II PT.A 2015 EDITION

ASME SA479 2015 S31603 A (5)

(5)SECTION II PT.A 2015 EDITION

ASTM A182 2016 S31600 A (6)

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

ASTM A182 2016 S31603 (7)

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

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)

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

NACE MR0175 2009 S31603 A (9)

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

QQ-S-763 F 316 A,CF

QQ-S-763 F 316L A,CF

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 Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
		Abmessungen Dimension Dimension						
0010	Hexagon	34,930		3090/ 3090	429295		1099,0	620302730

Vicenza, 16/02/17

VCQ008 - MEST024712

(Mod. MCE2) WSPR14A3MFE21054597AR02FC0EAAE6C6ACE

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

M.RIZZOTTO

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