



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.  
 Telefono 0444.968211 - Fax 0444.963836  
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
 Telefono 0471.924111 - Fax 0471.924497

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

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. MEST390512 / 2019 /  
 Prufung/Test/Essai

Cliente / Besteller/Purchaser/Client  
 VALBRUNA CANADA LTD  
 8724 HOLTGATE CRESCENT  
 L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

Stato di fornitura : Forged - Annealed Peeled  
 Lieforzustand  
 Delivery state  
 Etat de livraison

Produttore :  
 Hersteller/Usine productrice

**ACCIAIERIE VALBRUNA S.P.A.**

Ordine nr: 902007335 STOCK  
 Bestell  
 Your order  
 Commande

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

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



Conferma ordine nr: EI19001217  
 Werks/Our Order/Ret nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI19010091  
 Lieferanzelge/Packing list/B.L.

Marca: APLM  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marquage

### SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Aufzeichnungen / Notes / Notes

VSI 0 316/316L A  
 AISI 316/316L  
 AMS 5648 M S31600 A  
 AMS 5653 H S31603 A  
 AMS-QQ-S-763 D 316/316L A  
 ASME SA182 2017 S31600/03 A (0)  
 ASME SA193 2017 B8M CLASS 1 (1)  
 ASME SA276 2017 S31600/03 A (2)  
 ASME SA320 2017 B8M CLASS1 (3)  
 ASME SA479 2017 S31600/03 A (4)  
 ASTM A182 2018 S31600/03 A (5)  
 ASTM A193 2017 B8M CLASS 1  
 ASTM A262 2015 PRACTICE E  
 ASTM A276 2017 S31600/03 A  
 ASTM A314 2015 S31600/03  
 ASTM A320 2017A B8M CLASS1  
 ASTM A370 2017  
 ASTM A473 2001 S31600/03 (6)  
 ASTM A479 2018 S31600/03 A  
 MIL-S-862 B/1 316/316L  
 NACE MR0103 2015 S31600/03 A (7)  
 NACE MR0175 2015 S31600/03 A (8)  
 QQ-S-763 F 316/316L A

(0)Section II Part A 2017 EDITION For products machined directly from bar refer to ASME SA479.

(1)Section II Part A 2017 EDITION

(2)Section II Part A 2017 EDITION

(3)Section II Part A 2017 EDITION

(4)Section II Part A 2017 EDITION

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

(6)Chemical analysis only.

(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015

(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

Tolleranza: ASTM A484-18A TABLE 3

Tolleranza/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de pozitie	Oggetto Gegenstand Product description Design. du produit	Dimensioni - In Abmessungen Dimension Dimension	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losn. Lot nr. Lot nr.
0010	Round	16,0000	149/ 149	279583		8.702	833203900

P.O.#: P121041  
 R#: R160843  
 ITEM#: 52.3266  
 HEAT#: 279583  
 BRANCH#: 875

Vicenza, 03/04/19

VCC008 - MEST390512

(Mod. MCE2) 001/002/003/004/005/006/007/008/009/010/011

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

M.RIZZOTTO *M. Rizzotto*

Pagina - 1 di 3

MS



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.  
 Telefono 0444.968211 - Fax 0444.963836  
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
 Telefono 0471.924111 - Fax 0471.924497

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

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. MEST390512 / 2019 /  
 Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client  
 VALBRUNA CANADA LTD  
 8724 HOLLGATE CRESCENT  
 L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

Stato di fornitura: Forged - Annealed Peeled  
 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore:  
 Hersteller/Item/Usine productrice

**ACCIAIERIE VALBRUNA S.P.A.**

Ordine nr: 902007335 STOCK  
 Bestell  
 Your order  
 Commande

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

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Trade marks  
 Siglos de fusina productrice



Conferma ordine nr: E119001217  
 Werks/Our Order/Ref nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI19010091  
 Lieferanzeige/Packing list/V.L.

Marca: APML  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 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												
TEST	Provetta/ Probe Specimen/Éprouvette Larg. diam. Spess. Bread. Diam. Dicke Width Diam. Thickness Larg. diam. épais. mm	°F	Posiz. Saggio Prüfung Location Endnummer 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% k.s.l.	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement		Strizione Einschnürung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB	
							E 4d %	%				
Valori richiesti Anforderungen/Required values Valeurs demandées		min		30	-	75	-	40	-	50	-	140
		max				115						223
A	12,5	68	L	39		81		64		75		164

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		1

Mechanical properties according to ASTM A370.

Analisi chimica												
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique												
Colata /Heat Schmelze/Coulee	min - max	1,25 2,00	16,50 18,00	2,00 3,00	10,00 14,00	0,040	0,020 0,030	0,100	-	-	-	-
279583	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	-
	0,019	0,37	1,73	16,80	2,05	0,54	10,07	0,136	0,031	0,026	0,090	-

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

Produced without class I-II Ozone depleting substances.  
 Solution heat treated free from continuous carbide network.  
 Annealing temperature : 1976° F for 9 h/water.  
 Micro and macro etch test : OK  
 Reduction ratio = 4,3 : 1  
 Material is DFARS Compliant

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

Controllo antimiscelazione: OK  
 Verwechslungsprüfung: spektroanalytisch durchgeführt  
 Antimixing testing performed: OK  
 Contrôle antimélange fait: r.o.s.

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

Vicenza, 03/04/19  
 VCA008 - MEST390512

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

M. RIZZOTTO

Pagina - 2 di 3



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.  
 Telefono 0444.968211 - Fax 0444.963836  
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
 Telefono 0471.924111 - Fax 0471.924497

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

In conformità a: EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1

Certificato nr. MEST390512 / 2019 /  
 Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client  
 VALBRUNA CANADA LTD  
 8724 HOLLGATE CRESCENT  
 L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

Stato di fornitura: Forged - Annealed Peeled  
 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore:  
 Hersteller/Werk/Usine productrice

**ACCIAIERIE VALBRUNA S.P.A.**

Ordine nr: 902007335 STOCK  
 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: EI19001217  
 Werks/Our Order/Ref nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:  
 Stempel des Werksachverständigen  
 Inspector's stamp/Plaque de l'assesseur

MR

Avviso di Spedizione: D-VI19010091  
 Lieferanzahl/Packing list/B.L.

Marca: APML  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marque

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 : 2015, IATF 16949 : 2016, AS 9100D

The Quality Management System is Certified acc. Pressure Equipment Directive 2014/68/EU Annex 1, chapt. 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.

Maximal 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, 03/04/19

VCQ008 - MEST390512

(Mod. MCE2) MEST390512/1902445344188/048730211

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

M. RIZZOTTO

Pagina - 3 di 3