



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

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

Certificato nr. MEST383508 / 2019 /  
Prüfung/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  
Lieferzustand:  
Delivery state:  
Etat de livraison:

Produttore:  
Hersteller/Item/Usine production:

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr. 902007379 Stock - Canada  
Bestell-  
/our order  
/Commande

Tipo di Elaborazione: E+AOD  
Beschmelzungsart:  
Melting process:  
Mode of elaboration:

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



Conferma ordine nr.: EI19002059  
Werkst/Our Order/Ref.n:

Qualità: 316/316L  
Werkstoff/Grade/Nuance:

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

MR

Avviso di Spedizione: D-VI19003446  
Lieferanzge/Packing list/BL:

Marca: APML  
Markenbezeichnung:  
Brand / Nuance:

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

### SPECIFICHE :

### Note

Anforderungen / Requirements / Exigences

Auflösungen / 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 15945 November 23, 2015  
(8)ANSI/NACE MR0175/ISO 15156-3, Third edition November 23, 2015

Tolleranza: ASTM A484-18 TABLE 3

Tolleranz/Allowance/Tolerance

Pos. nr. Pos. nr. Item no. No. de poste	Oggetto Gegenstand Product description Description du produit	Dimensioni - In		Lunghezza - In Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Lose Lot no. Lote
		Abmessungen Dimension Dimension						
0040	Round	11,0000		142/ 143	278425		7.837	817607330

Vicenza, 19/03/19

VCQ008 - MEST383508

(Mod. MCEZ) - 2017/08/28 - 01/01/2018

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

M.RIZZOTTO

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

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Certificato nr. MEST383508 / 2019 /  
 Prüfung/Test/Essa

Cliente / Besteller/Purchaser/Client  
**VALBRUNA CANADA LTD**  
 8724 HOLTGATE 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. 902007379 Stock - Canada  
 Bestell-  
 Your order:  
 Commande

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

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



Conferma ordine nr. EI19002069  
 Werks/CU-Order/Ref nr

Qualità: 316/316L  
 Werkstoff/Grade/Qualité

Punzone del Collaudatore:  
 Stempel des Werkstoffverständigen  
 Inspector's stamp/Plaque de l'essayeur

MR

Avviso di Spedizione: D-VI19008446  
 Lieferanzüge/Packing list/B.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 asi como entregado

TEST	Provetta / Probe / Specimen / Provette Larg. diam. Spess. Bred. Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°F	Posiz. Saggio Position Location Empplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% k.s.i		Resistenza Zugfestigkeit Tensile strength Resistance a traction Rm k.s.	Allungamento Bruchdehnung Elongation Allongement E 4d	Strizione Einschnürung Reduction of area Striction %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
				min	max					
Valori richiesti Anforderungen/Required values Valeurs demandées				30	-	75 115	40	50	-	140 223
A	12,5	68	L	38		81	64	75		169

### 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		4

Mechanical properties according to ASTM A370.

### Analisi chimica

Chemische Zusammensetzung / Chemical Analysis / Analyse chimique

Element	Unit	Value
C	%	0,020
Si	%	0,37
Mn	%	1,73
Cr	%	16,68
Mo	%	2,05
Cu	%	0,35
Ni	%	10,06
Co	%	0,142
P	%	0,031
S	%	0,020
N	%	0,087

### 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.  
 Micro and macro etch test : OK  
 Reduction ratio = 4.6 : 1  
 Annealing temperature : 1976°F for 6.5 h /water.  
 Material is DFARS Compliant

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

Controllo antimescolanza: OK  
 Verwechslungsprüfung: spektralanalytisch durchgeführt  
 Antimixing testing performed: OK  
 Contrôle anti-mélange fait: O.K.

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

Vicenza, 19/03/19

VCC008 - MEST383508

(Mod. MCE2) www.valbruna.com

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

M. RIZZOTTO

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Certificato nr. **MEST383508 / 2019 /**

Nach/According to/Selon:

Prüfung/TEST/Éssa:

Cliente / Besteller/Purchaser/Client  
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**8724 HOLGATE CRESCENT**  
**L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA**

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

Produttore :  
 Hersteller/Item/Usine productrice

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

Ordine nr. **902007379 Stock - Canada**  
 Bestell  
 Your order  
 Commande

Tipo di Elaborazione: **E+AOD**  
 Erzeugungszustand  
 Melting process  
 Mode d'élaboration

Marchi di Fabbrica:  
 Zeichen des Werks/Werkmarken  
 Trade marks  
 Signes de l'usine productrice



Conferma ordine nr. **EI19002069**  
 Werks-/Order/Ref. nr.

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

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

**MR**

Avviso di Spedizione **D-VI19003446**  
 Referenze per/Packing list/R.L.

Marca **APML**  
 Markenbezeichnung  
 Brand / Nuance

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

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, chap.4.3 by TÜEV 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.