



# 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 / ISO 10474 (2013), 3.1**

Certificato nr. **MEST216410 / 2018 /**  
 Prüfung/Test/Essai:

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

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

Produttore:  
 Hersteller/Item/Usine productrice

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

Ordine nr. **802006872 STOCK REPLACEME**  
 Bestell- / Your order / Commande

Tipo di Elaborazione: **E+AOD**  
 Erhmelungsart  
 Milling process  
 Mode d'elaboration

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Trade marks  
 Sigles de fusine productrice



Conferma ordine nr. **E118002458**  
 Werkz./Our Order/Ref. nr.

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

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

**MR**

Avviso di Spedizione: **D-VI18007680**  
 Lieferanzeige/Packing label

Marca: **APML**  
 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 2015 S31600/03 A (0)	(0)SECTION II PT.A 2015 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2015 B8M CLASS 1 (1)	(1)SECTION II PT.A 2015 ED.TION
ASME SA276 2015 S31600/03 A (2)	(2)SECTION II PT.A 2015 ED.TION
ASME SA320 2015 B8M CLASS1 (3)	(3)SECTION II PT.A 2015 ED.TION
ASME SA479 2015 S31600/03 A (4)	(4)SECTION II PT.A 2015 ED.TION
ASTM A182 2016 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2016 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)	(6)Chemical analysis only.
ASTM A479 2017 S31600/03 A	
MIL-S-862 B/1 316/316L	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15155-3, third edition November 23,2015
QQ-S-763 F 316/316L A	

Tolleranza: ASTM A484-10 TABLE 3

Pcs. nr. Fas. nr. Parti nr. N. de poste	Oggetto Objet Product description Descr. de produit	Tolleranza/Allowance/Tolerance		Lunghezza - ln Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Lot-Nr. Lot No. Lot No.
		Dimensioni - ln Abmessungen Dimensions Dimension						
0110	Round	11,0000		140/ 146	275138		11.809	723607600

*ANS*



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 8724 HOLGATE CRESCENT  
 L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

Stato di fornitura: Forged - Annealed FORGED  
 Lieferzustand  
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 Etat de livraison

Produttore:  
 Hersteller/Item/Ligne productrice

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

Ordine nr: 802006872 STOCK REPLACEME

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

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



Basist.  
 Your order  
 Commande

Qualità: 316/316L  
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 Stempel des Werksachverständigen  
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MR

Conferma ordine nr: EI18002458

Werkst./Our Order/Ref. nr.

Avviso di Spedizione: D-VI1E007680  
 Lieferanzahl/Packing list/B.L.

Marca: APLM  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marquage

### TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem produkt / test à l'état de fourniture / Prueba sobre el material así como entregado

TEST	Provette/ Probe/échantillon Specimens/échantillons Leg diam. Steel Série Diam. Steel Weld diam. Thickness Leg diam. span mm	°F	Posiz. Seggo Prüfungszustand Position Orientation	Snervamento Streckgrenze Yield Stress Limite élastique Rp 0,2% k.s.l.	Snervamento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Résistance à traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement		Strizione Einschnürung Reduction of area Striction RA %	Resilienza Kerbschlagenergie Impact Value Resilience	Durezza Härte Hirteness Dureté HB	
							E 4d %	%				
Valid. richiesta Anforderung/Required values Valeur demandée		min max		30	-	75 115	-	40	-	50	-	140 223
A	12,5	68	L	38		82		63		76		170

### TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem produkt / Test à l'état de fourniture / Prueba sobre el material así 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

Colata / Heat Schmelze/Coulee	min - max	0,030	1,00	1,25 2,50	16,50 18,00	2,00 3,00	1,00	10,00 14,00	-	-	0,023 0,030	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
275138	0,019	0,32	,68	16,90	2,07	0,41	10,09	0,134	0,031	0,030	0,097				

### 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 : 1940° F for 4,5 h/water.  
 Material is DFARS Compliant

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

Controllo antimiscelanza: OK  
 Verwechslungsprüfung: spektralanalytisch durchgeführt  
 Antimixing testing performed: OK  
 Contrôle Antimélange fait: F.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

Vicenza, 12/03/18

VCG008 - MEST216410

(Mod. MCE2) FORMA MEST216410/0001/0001/0001/0001

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

M. RIZZOTTO *M. Rizzotto*

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 Sigles de l'usine productrice



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 Werks/Du - Order/Ref. nr.

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**MR**

**Avviso di Spedizione: D-VI18007680**  
 Lieferanzeige/Packing list/B.L.

**Marca: APML**  
 Markenbezeichnung  
 Brand / Nuance

**Punzonatura: 316/316L**  
 Kennzeichnung  
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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 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.

**Vicenza, 12/03/18**

VCC008 - MEST216410

(Mod. MCE2) 1.07.18/01.18/02.18/03.18/04.18/05.18/06.18/07.18/08.18/09.18/10.18/11.18/12.18

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

**M. RIZZOTTO**

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