



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
 Telefono 0444.968211 - Fax 0444.968836  
 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. MEST249606 / 2018 /
Nach/According to/Selon		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 FORGED Lieferzustand Delivery state Etat de livraison	Produttore: Hersteller/Item/Usine productrice <b>ACCIAIERIE VALBRUNA S.P.A.</b>
Ordine nr: 802006870 Replacement sto Bestel / 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: EI18002298 Works/Our Order/Ref. nr.	Qualità: 316/316L Werkstoff/Grade/Nuance	Punzone del Collaudatore: Stempel des Werkstoffverständigen Inspector's stamp/Paraphe de l'assesseur <b>MR</b>
Avviso di Spedizione: D-VI18014535 Lieferanzeige/Packing list/B.L.	Marca: APLM Markenbezeichnung Brand / Nuance	Punzonatura: 316/316L Kennzeichnung Marking Marque

SPECIFICHE:	Nota:
Anforderungen / Requirements / Exigences	Anzeichnungen / Notes / Notes
VSI 0 316/316L A	
AIISI 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)	(0)Section II Part A 2017 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2017 B8M CLASS 1 (1)	(1)Section II Part A 2017 EDITION
ASME SA276 2017 S31600/03 A (2)	(2)Section II Part A 2017 EDITION
ASME SA320 2017 B8M CLASS1 (3)	(3)Section II Part A 2017 EDITION
ASME SA479 2017 S31600/03 A (4)	(4)Section II Part A 2017 EDITION
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 2018 S31600/03 A	
MIL-S-862 B/1 316/316L	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 15945 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23, 2015
QQ-S-763 F 316/316L A	

Tolleranza: ASTM A484-18 TABLE 3  
 Tollerance/Allowance/Tolerancia

Pos. nr. Pos. nr. Item nr. Nr. de piece	Oggetto Gegenstand Product description Description de 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. Lohn Lot no. Lettre
0070	Round	8,5000	233/ 233	277051	1	3,867	802510710

P.O.#: P119789  
 R#: R155648  
 ITEM#: 509378  
 HEAT#: 277051  
 BRANCH#: 875

Scanned 7/25/2019 *MS*

Provided by: ENCORE METALS DIVISION OF RMCI



# Acciaierie Valbruna S.p.A.

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 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. MEST249606 / 2018 /  
 Prüfung/Fesselsst

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

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

Produttore:  
 Hersteller/Hersteller/Usine productrice

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

Ordine nr: 802006870 Replacement sto  
 Bestell: 802006870  
 Your order: 802006870  
 Commando: 802006870

Tipo di Elaborazione: E+AOO  
 Erhitzungsart: E+AOO  
 Mating process: E+AOO  
 Mode d'elaboration: E+AOO

Marchi di Fabbrica:  
 Zeichen des Lieferanten:  
 Trade marks:  
 Signes de l'usine productrice



Conferma ordine nr: EI18002298  
 Works/Our Order/Ref nr.

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

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

MR

Avviso di Spedizione: D-VI18014535  
 Lieferanzelge/Packing tsUVB.L.

Marca: APML  
 Markenbezeichnung: APML  
 Brand / Nuance: APML

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

### 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	Prova/ Probe Specimen/Éprouvette Leg. diam. Spess. Bore Diam. Dicke Widh Diam. Thickness Leg. diam. spess. mm	°F	Posiz. Saggio Position Lieu Endreueum tr	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2%	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Résistance à traction Rm K.s.t.	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschränkung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
							min	max			
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		30	-	75 115	-	40	-	50	140 223
A	12,5	68 L		39		83		58		73	165

### 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

Colla Heat Schmelz/Coulee	min - max	1,25 2,00	16,50 18,50	2,00 3,00	1,00	10,00 14,00	0,020 0,030	0,100				
	C %	Si %	Mn %	C %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
277051	0,012	0,27	1,75	16,87	2,08	0,48	0,02	0,124	0,032	0,023	0,076	

### 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 = 7,6 : 1  
 Annealing temperature : 1940° F for 4 h/water.  
 Material is DFARS Compliant

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: spektralanalytisch durchgeführt  
 Antimixing testing performed: OK  
 Contrôle antimélange fait: S.O.S.

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

Vicenza, 18/05/18  
 VCC008 - MEST249606  
 (Mod. MCE2)

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

M. RIZZOTTO *M. Rizzotto*

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Certificato nr. MEST249606 / 2018 /

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Prüfung/Test/Essai

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

Stato di fornitura: Forged - Annealed FORGED  
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Produttore:  
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ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 802006870 Replacement sto  
 Bestell  
 Your order  
 Commande

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

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



Conferma ordine nr: E118002298  
 Works/Our Order/Ref nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:  
 Stempel des Werksachverständigen  
 Inspector's stamp/Pointon de l'essayeur

MR

Avviso di Spedizione: D-VI18014535  
 Lieferanzeige/Packing list/B.L.

Marca: APLM  
 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 [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.  
 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.

Provided by: ENCORE METALS DIVISION OF RMCL

Vicenza, 18/05/18

VCC008 - MEST249606

(Mod. MGE2) WSP/21/2012/1/10/01/0001/01/2013/02/01

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

M. RIZZOTTO

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