



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza 25 r.l.  
 Telefono 0444.963211 - Fax 0444.963935  
 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. MEST475846 / 2019 /  
 Prüfung/Text/Etrial

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

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

Produttore:  
 Hersteller/Usine producer

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

Ordine nr. 909007688  
 Bestell  
 Yeil order  
 Commande

Tipo di Elaborazione: E+AOD  
 Bearbeitungsart  
 Making process  
 Mode d'elaboration

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



Conferma ordine nr. EI19007813  
 Werk/Dat. Order/Rechn.

Qualità 316/316L  
 Werkstoff/Grade/Qualität

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

MR

Aviso di Spedizione: D-VI19027754  
 Lieferanweisung/Shipping Instruk.

Marca: APLM  
 Markenbezeichnung  
 Brand / Marque

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marquage

**SPECIFICHE :**

Anforderungen / Requirements / Exigences

Note:

Anforderungen / 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 2019 S31600/03 A (5)
- ASTM A193 2017 B8M CLASS 1
- ASTM A262 2015 PRACTICE E
- ASTM A276 2017 S31600/03 A
- ASTM A314 2019 S31600/03
- ASTM A320 2018 B8M CLASS1
- ASTM A370 2019 (E)
- ASTM A473 2001 S31600/03 (7)
- ASTM A479 2018 S31600/03 A
- MIL-S-882 B/1 316/316L
- NACE MR0103 2015 S31600/03 A (8)
- NACE MRC175 2015 S31600/03 A (8)
- QQ-S-763 F 316/316L A

- (0)Section I 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)2015E1
- (7)Chemical analysis only
- (8)ANSI/NACE MR0103/ISO 17815 November 23, 2015
- (9)ANSI/NACE MR0175/ISO 15156-3, third edition November 23, 2015

Tolleranza: STM A484-12A TABLE 3

Pos. nr. Part. nr. Lot. de pose	Oggetto Description Product description Design. de produit	Tolleranze / Allowances / Tolerances		Lunghezza - In Length Longueur	Dolata Shoulder Haute Cote H	PEZZ. Pieces Pièces	Peso - LB Weight Poids	Coto nr. Lot Lot n.
		Dimensioni - In Dimensions Dimensions	Dimensioni - In Dimensions Dimensions					
0010	Round	11,0000		144/ 144	281223		4,008	9127-0250

P.O.#: P120458  
 R#: R158470  
 ITEM#: 509382  
 HEAT#: 281223  
 275

Provided by: ENCORE METALS DIVISION OF RMCI

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# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 26 z.  
 Telefono 0444.988211 - Fax 0444.983835  
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
 Telefono 0471.924111 - Fax 0471.924497

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

In conformità a: EN 10204 (2004) 3.1 / ISO 10474 (2013), 3.1  
 Certificate nr. MEST475846 / 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: State of delivery

**Prodotto:**  
 Hersteller/Item/Usine production

**Acciaierie Valbruna S.p.A.**

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

**Ordine nr. 909007688**  
 Bestell-/Purchase/Order Confirmation

**Conferma ordine nr. EI19007813**  
 Warenauftrag/Order/Refrim.

**Avviso di Spedizione: D-VI19027754**  
 Lieferanweisung/Packing Instruk.

**Marca:** APML  
 Markenbezeichnung/Brand/Numero

**Punzone del Collaudatore:**  
 Stempel des Werkstoffversuchsdienstes/  
 Inspector's stamp/Pointage de l'essai

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



### TEST ALLO STATO DI FORNITURA

TEST	PROVDELA / Provenienz	Poste Segge	Snervamento	Snervamento	Resistenza	Allungamento	Strizione	Resilienza	Durezza
	3 per prova/3 per prova	mm	mm	mm	MPa	%	%	J	HB
Valori richiesti	min		30	-	75	40	50	-	140
	max				115				223
A	12.5	68 L	39		82	63	75		169

### TEST ALLO STATO DI FORNITURA

TEST	min	max
A Grain size for ASTM E112		4

Mechanical properties according to ASTM A370.

### Analisi chimica

Colore / Moist	min	max	1.25	10.50	2.00	10.00	0.220	0.220	0.120			
Struttura/Grains	max	1.02	2.00	18.02	3.00	1.00	4.00	0.040	0.220	0.120		
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
281223	0,020	0,47	1,79	13,55	2,04	0,47	10,11	0,114	0,029	0,022	0,095	

### Corrosion test in 16% sulfuric acid and copper sulfate solutions

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 = 4,2 : 1  
 Material annealed 1940°F for 5h/water cooled.  
 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 materiali è stato conforme alle esigenze

Controllo antimiscelanza: OK  
 Verwechslungsprüfung: zufrieden/positiv durchgeführt  
 Antimixing testing performed: OK  
 Control and mixing test: OK

Controllo visivo e dimensionale: soddisfa le esigenze  
 Bestätigung und Ausmessung: ohne Beanstandung  
 Visual inspection and dimensional check satisfactory  
 Control visual and dimensions: satisfactory

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

Vicenza, 21/10/19 Direzione Qualità  
 VCC052 - MEST475846 Qualitätsmanagement/Quality Management/Qualitätsmanagement

R.BERTELLI

Direzione Prodotto  
 Produktionsmanagement/Product Management/Produktion

P.MESSORI

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Provided by: ENCORE METALS DIVISION OF RMCI



# Acciaierie Valbruna S.p.A.

39100 VICENZA (Italia) - Viale della Scienza, 25 z.  
 Telefono 0444.968211 - Fax 0444.953836  
 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  
 Nach/According to/Encl

Certificato nr. MEST475846 / 2019 /  
 PrüfungsZert/Essai

Cliente / Besteller/Purchaser/Cliant  
**VALBRUNA CANADA LTD**  
 5724 HOLTGATE CRESCENT  
 L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

Stato di fornitura: Forged - Annealed Peeled  
 Lieferzustand  
 Delivery state  
 Estado de entrega

Produttore:  
 Hersteller/Hersteller producer

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

Ordine nr. 909007688  
 Bestell-/Vorder/Commande

Tipo di Elaborazione: E-ACD  
 Endbearbeitung  
 Working process  
 Mode d'elaboration

Marchi di Fabbrica:  
 Zeichen des Werks/Markens  
 Trade marks  
 Signes de l'usine producer



Conferma ordine nr. EI19007813  
 Works/Our Order/Rechn.

Qualità: 316/316L  
 Werkstoff/Grade/Vueuse

Punzione del Collaudatore:  
 Signatures/Werkstuechverlaenger  
 Inspector's stamp/Pointon de l'essayeur



Avviso di Spedizione: D-VI19027754  
 Lieferenzettel/Packing list/BL

Marca: APML  
 Markenbezeichnung  
 Brand/Vueuse

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marqueage

The Quality Management System is also Certified according Pressure Equipment Directive 2014/68/EU Annex 1, chapl.4.3 by TÜV 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

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001:2015, IATF 16949:2016, AS 9100D			
Vicenza, 21/10/19 VQC052 - MEST475848	Direzione Qualità Quality Management/Qualitätsmanagement/Quality Management/Qualitäts R.BERTELLI	Direzione Prodotto Product Management/Produktmanagement/Produktmanagement/Produkt P.MESSORI	Pagina 3 di 3