



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

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

Certificato nr. **MEST578633 / 2020 /**  
 Prüfung/Tésti/Ekka:

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

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

Produttore:  
 Hersteller/fabrik/Usina productrice

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

Ordine nr: **002007893 P120534-75 EMJ**  
 Bestell  
 Your order  
 Commande

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

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



Conferma ordine nr: **EI20C01437**  
 Works/Our Order/Ref nr

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

Punzone del Collaudatore:  
 Stempel des Werkstoffprüfstandigen  
 Inspector's stamp/Pointeur de l'essayeur

**MR**

Avviso di Spedizione: **D-VI20014177**  
 Lieferanzge/Facings/usb/L

Marca: **APML**  
 Markenbezeichnung  
 Brand / Nuance

Punzatura: **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 J S31603 A	
AMS-QQ-S-763 D 316/316L A	
ASME SA182 2019 S31600/03 A (0)	(0)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2019 B8M CLASS 1 (1)	(1)Section II Part A 2019 EDITION
ASME SA276 2019 S31600/03 A (2)	(2)Section I Part A 2019 EDITION
ASME SA320 2019 B8M CLASS1 (3)	(3)Section I Part A 2019 EDITION
ASME SA479 2019 S31600/03 A (4)	(4)Section I Part A 2019 EDITION
ASTM A182 2020 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2019 B8M CLASS 1	
ASTM A262 2015 PRACTICE E	
ASTM A276 2017 S31600/03 A	
ASTM A314 2019 S31600/03	
ASTM A320 2018 B8M CLASS 1 CLASS1	
ASTM A370 2019 . (6)	(6)2015E1
ASTM A473 2001 S31600/03 (7)	(7)Chemical analysis only.
ASTM A479 2019 S31600/03 A	
MIL-S-862 B/1 316/316L	
NACE MR0103 2015 S31600/03 A (8)	(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (9)	(9)ANSI/NACE MR0175/ISO 15156-3, third edition November 23, 2015
QQ-S-763 F 316/316L A	

Tolleranza: ASTM A484-19 TABLE 3

Pcs. nr. Pcs. nr. Item nr. No. de pieces	Oggetto Gegenstand Product description Désigne. du produit	Tolleranza/Allowance/Tolerance		Lunghezza - In Länge Longueur	Coata Brennstoff Couleur	Pezzi Stücken Pièces	Peso - LB Gewicht Poids	Lotto nr. Losn. Lot nr.
		Dimensioni - In Abmessungen Dimensions Dimensions						
0010	Round	13,0000		148/ 148	283119		5.754	103006030

P.O.#: **R120534**  
 Ref.: **R161727**  
 ITEM#: **521534**  
 HEAT#: **283119**  
 BRANCH#: **875**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, <b>24/06/2020</b> VCCQ52 - MEST578633	Direzione Qualità Qualitätsmanagement/Quality Management/Direction Qualité <b>R.BERTELLI</b>	Direzione Prodotto Produktmanagement/Product Management/Direction Produits <b>P.MESSORI</b>	Pagina 1 di 3
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Provided by: ENCORE METALS DIVISION OF RMC

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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. MEST578633 / 2C20 /  
 Prüfung/Text/Essai

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

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

Produttore:  
 Hersteller/Usine/Usine productrice

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

Ordine nr. C02007893 P120534-75 EMJ  
 Bestell:  
 Your order:  
 Commande

Tipo di Elaborazione: E+AOD  
 Erzeugnisart:  
 Making process:  
 Mode d'élaboration:

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



Conferma ordine nr. E120001437  
 Works/Our Order/Ref.nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI20014177  
 Lieferanzeige/Packing label

Marca: APVL  
 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	Proveita/ Probeité	°F	Posiz. Saggio Package Loc. an. Endicamer	Snervamento	Snervamento	Resistenza	Alungamento	Strizione	Resilienza	Durezza
	Specimen/Eprouvette			Strickgrenze	Strickgrenze	Zugfestigkeit	Bruchdehnung	Erweichung	Kerbschlagarbeit	
	Large Diam. Steels Wide Diam. Tubes Large diam. pipes			Yield Stress Limite élastique	Yield Stress Limite élastique	Tensile strength Résistance à traction	Elongation Élongation	Reduction of area Striction	Impact Value Resilience	Hardness Dureté
Valori richiesti		min		30	-	75	-	40	50	140
Anforderungen/Required values		max				115				223
A	12,5	68	L	39		82	60	76		166

### 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		3

Mechanical properties according to ASTM A370.

### Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colla / Heat	min	max	1,25	1,60	2,00	2,00	10,00	0,040	0,020	0,000	0,000	0,000
Schmelze/Coûée	max	0,030	1,00	1,60	2,00	1,00	14,00	0,040	0,030	0,000	0,000	0,000
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
283119	0,018	0,36	1,77	16,72	2,07	0,43	10,06	0,164	0,031	0,026	0,092	

### 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	16	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.  
 Material annealed 1940°F for 5.5h/water cooled.  
 Reduction ratio = 4.7 : 1  
 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 trouvé conforme aux exigences

Controllo antimiscelanza: OK  
 Verwachsungsprüfung: spezialanalytisch durchgeführt  
 Antimixing testing performed: OK  
 Contrôle antimélange fait: O.K.

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

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 24/06/2020 VCQ052 - MEST578633	Direzione Qualità Quality Management/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Product Management/Product Management/Usine Product P.MESSORI	Pagina 2 di 3
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Certificato nr: MEST578633 / 2020 /

Nach/According to/Seon

Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Clien:

VALBRUNA CANADA LTD  
8724 HOLGATE CRESCENT  
L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

Stato di fornitura: Forged - Annealed Peeled

Lieferzustand  
Delivery state  
Etat de livraison

Produttore:

Hersteller/fabrikant/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 002007893 P120534-75 EMJ

Bestell  
Foil order  
Commande

Tipo di Elaborazione: E+AOD

Eisenherstellung  
Melting process  
Mode de fabrication

Marchi di Fabbrica:

Zeichen des Lieferanten  
Trade marks  
Sigles de l'usine productrice



Conferma ordine nr: EI20001437

Werk/Our Order/Ref. nr.

Qualità: 316/316L

Werkstoff/Grade/Alliance

Punzone di Collaudatore

Stempel des Werkstoffverwaltungen  
Inspector's stamp/Inspector of the factory

MR

Avviso di Spedizione: D-VI20014177

Lieferanzeige/Packing list/BL

Marca:

Markenbezeichnung  
Brand / Nuance

APML

Punzonatura: 316/316L

Kennzeichnung  
Marking  
Marquage

Melted, poured 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 by the portal system when it leaves the production plant.

The Quality Management System is also Certified according Pressure Equipment Directive 2014/68/EU Annex 1, chap. 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.

MS FORM 2018/001/EN - RICCI/2018/01/14

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, 24/06/2020

VCC052 - MEST578633

Direzione Qualità  
Quality Management/Quality Management/Qualité

R. BERTELLI

Direzione Prodotto  
Product Management/Product Management/Produit

P. MESSORI

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