



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

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

Certificato nr. **MEST831890 / 2021 /**  
 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 Peeled**  
 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore:  
 Hersteller/Usine productrice

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

Ordine nr: **109008975 RELIANCE PROGRA**  
 Bestell  
 Your order  
 Commande

Tipo di Elaborazione: **E+AOD**  
 Erzeugnisart  
 Molding process  
 Mode d'elaboration

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



Conferma ordine nr: **EI21011652**  
 Werks/Our Order/Ref. nr.

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

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

**MR**

Avviso di Spedizione: **D-VI21027016**  
 Lieferanzelge/Packing list/B.L.

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 J S31603 A  
 AMS-QQ-S-763 D 316/316L A  
 ASME SA182 2019 S31600/03 A (0)  
 ASME SA193 2019 B8M CLASS 1 (1)  
 ASME SA276 2019 S31600/03 A (2)  
 ASME SA320 2019 B8M CLASS 1 CLASS1 (3)  
 ASME SA479 2019 S31600/03 A (4)  
 ASTM A182 2021 S31600/03 A (5)  
 ASTM A193 2020 B8M CLASS 1  
 ASTM A262 PR. E 2015 316/316L (6)  
 ASTM A276 2017 S31600/03 A  
 ASTM A314 2019 S31600/03  
 ASTM A320 2018 B8M CLASS 1 CLASS1  
 ASTM A370 2020  
 ASTM A473 2021 S31600/03 (7)  
**ASTM A479 2020 S31600/03 A**  
 MIL-S-862 B/1 316/316L  
 NACE MR0103 2015 S31600/03 A (8)  
**NACE MR0175 2015 S31600/03 A (9)**  
 QQ-S-763 F 316/316L A

(0)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.  
 (1)Section II Part A 2019 EDITION  
 (2)Section II Part A 2019 EDITION  
 (3)Section II Part A 2019 EDITION  
 (4)Section II Part A 2019 EDITION  
 (5)For products machined directly from bar refer also to ASTM A479.  
 (6)Reapproved 2021  
 (7)Chemical analysis only.  
 (8)ANSI/NACE MR0103/ISO 17945 November 23, 2015  
 (9)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

Tolleranza: ASTM A484-20B TABLE 3

Tolleranza/Allowance/Tolerance

Pos. nr. Pos. nr. Item no. Nr. de poste	Oggetto Gegenstand Product description Description de produit	Dimensioni - In Abmessungen Dimension Dimension	Lunghezza, - In Länge Length Longueur	Colata Schmelze Heat Coutée	Pezzi Stückzahl Pieces	Peso - LB Gewicht Weight Poids	Lotto nr. Losnr. Lot no. Lot no.
0040	Round	<b>11,0000</b>	144/ 144	<b>286973</b>		7.915	116712630

P.O.#:	<b>P123924</b>
R#:	<b>R171254</b>
ITEM#:	<b>509382</b>
HEAT#:	<b>286973</b>
BRANCH#:	<b>875</b>

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

Vicenza, <b>04/11/2021</b> VCC052 - MEST831890	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité <b>Bertelli</b>	Direzione Prodotto Produktmanagement/Product Management/Direction Produit <b>Messori</b>	Pagina 1 di 3
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In conformità a: EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1

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 Prüfung/Tos/Essai

Cliente / Besteller/Kunde/Klient  
**VALBRUNA CANADA LTD**  
 8724 HOGGATE CRESCENT  
 L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

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

Produttore:  
 Hersteller/Hersteller/Usine productrice

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

Ordine nr: 109008975 RELIANCE PROGRA  
 Bestell  
 Your order  
 Commande

Tipo di Elaborazione: E+AOD  
 Beschmelzungsart  
 Melting process  
 Mode d'alaboretion

Marchi di Fabbrica:  
 Zeichen des Lieferanten  
 Trade marks  
 Siglas do fusine productiva

Conferma ordine nr: EI21011652

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

Avviso di Spedizione: D-VI21027016  
 Lieferanzeige/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 Lieferbareitem produkt / Test à l'état de fourniture / Prueba sobre el material así como entregado

TEST	Provatta/ Provență Specimen/Éprouvette Larg. diam. Epave, Brut. Diam. Dicks Weld Diam. Thicknes Larg. diam. épave mm	Poz. Saggio Position Lage Eprouvette II	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 E Ad %	Strizione Einknickung Rupture el. area Écricion RA %		Resilienza Kerpenwert Impact Value Resilience	Durezza Härte Hardness Dureté HB
							min	max		
Valori richiesti			30	-	75	-	40	-	50	140
Anforderung/Requisit/wishes Valeurs demandées					115					223
A	12,5	68	L	37	81	62	71			169

### TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf Lieferbareitem 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/Couée	min - max	0,030	1,00	1,25 2,00	16,50 16,00	2,00 3,00	1,00	10,00 14,00	-	0,020 0,030	-	-	-	-
	C %	SI %	Mn %	Cr %	Mo %	Cu %	NI %	Co %	P %	S %	N %			
286973	0,018	0,58	1,89	16,58	2,06	0,68	10,00	0,152	0,029	0,028	0,091			

### 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 = 4,2 : 1  
 Material annealed 1976°F for 6,5h/water cooled.  
 Material is DFARS Compliant

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

Controllo antimiscelazione con tecnica XRF/OES portatile : OK  
 Vorwachsangprüfung: durch XRF/OES Gerät geführt.  
 Antiskinning testing performed with XRF/OES portable : OK  
 Contrôle antimélange svr technique XRF/OES portable : OK

Controllo visivo a dimensionale: soddisfa le esigenze  
 Beschligung und Ausmessung: ohne Beanstandung  
 Visual inspection and dimensional checks:satisfactory  
 Contrôle visuel et dimensionnel: satisfisant

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

Vicenza, 04/11/2021 VCQ052 - MEST831890	Direzione Qualità Qualitätsmanagement/Quality Management/Direction Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3
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# Acciaierie Valbruna S.p.A.

36100 VIGENZA (Italia) - Viale della scienza, 25 z.l.  
Telefono 0444.968211 - Fax 0444.963836  
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
Telefono 0471.924111 - Fax 0471.924497

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L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

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

Produttore:  
Hersteller/Werks  
Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr. 109008976 RELIANCE PROGRA  
Bestell  
Your order  
Commande

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

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



Conferma ordine nr. EI21011652  
Werkst/Our Order/Ref nr.

Qualità: 316/316L  
Werkstoff/Grade/Usance

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



Avviso di Spedizione: D-VI21027016  
Lieferanweisung/Packing list/B.L.

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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.  
Maxivel 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.

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

Vicenza, 04/11/2021  
VCC052 - MEST831890

Direzione Qualità  
Qualitätsmanagement/Quality Management/Direction Qualité  
R.BERTELLI

Direzione Prodotto  
Produktmanagement/Product Management/Direction Produit  
P.MESSORI

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