



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

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

Certificato nr. MEST711895 / 2021 /  
 Prüfung/Test/Essai

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

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

Produttore:  
 Hersteller/Item/Usine productrice

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

Ordine nr: 103008599 Stock - Canada  
 Bestell  
 Your order  
 Commande

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

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



Conferma ordine nr: EI21003857  
 Werks/Our Order/Ref nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI21007934  
 Lieferanzelge/Packing list/V.L.

Marca: APLM  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marquage

| SPECIFICHE :   | Note:  |
|--|--|
| Anforderungen / Requirements / Exigences   | Aufzeichnungen / Notes / Notes   |
| VSI 0. 316/316L A<br>AISI 316/316L<br>AMS 5648 M S31600 A<br>AMS 5653 J S31603 A<br>AMS-QQ-S-763 D 316/316L A<br>ASME SA182 2019 S31600/03 A (0)<br>ASME SA193 2019 B8M CLASS 1 (1)<br>ASME SA276 2019 S31600/03 A (2)<br>ASME SA320 2019 B8M CLASS 1 CLASS1 (3)<br>ASME SA479 2019 S31600/03 A (4)<br>ASTM A182 2020 S31600/03 A (5)<br>ASTM A193 2019 B8M CLASS 1<br>ASTM A262 PR. E 2015 316/316L<br>ASTM A276 2017 S31600/03 A<br>ASTM A314 2019 S31600/03<br>ASTM A320 2018 B8M CLASS 1 CLASS1<br>ASTM A370 2020 (6)<br>ASTM A473 2019 S31600/03 (7)<br><b>ASTM A479 2020 S31600/03 A</b><br>MIL-S-862 B/1 316/316L<br>NACE MR0103 2015 S31600/03 A (8)<br><b>NACE MR0175 2015 S31600/03 A (9)</b><br>QQ-S-763 F 316/316L A | (0)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.<br>(1)Section II Part A 2019 EDITION<br>(2)Section II Part A 2019 EDITION<br>(3)Section II Part A 2019 EDITION<br>(4)Section II Part A 2019 EDITION<br>(5)For products machined directly from bar refer also to ASTM A479.<br>(6)2019E1<br>(7)Chemical analysis only.<br>(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015<br>(9)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015 |

P.O.#: P124380  
 R#: R172937  
 ITEM#: 509378  
 HEAT#: 285050  
 BRANCH#: 875

Tolleranza: ASTM A484-20B TABLE 3  
 Tolleranza/Allowance/Tolerance

| Pos. nr.<br>Pos. nr.<br>Item nr.<br>Nr. de poste | Oggetto<br>Gegenstand<br>Product description<br>Descr. du produit | Dimensioni - In<br>Abmessungen<br>Dimension<br>Dimension | Lunghezza - In<br>Länge<br>Length<br>Longueur | Colata<br>Schmelze<br>Heat<br>Coulée | Pezzi<br>Stückzahl<br>Pieces | Peso - LB<br>Gewicht<br>Weight<br>Poids | Lotto nr.<br>Lotnr.<br>Lot nr.<br>Lot nr. |
|--|---|--|---|--------------------------------------|------------------------------|---|---|
| 0070   | Round   | 8,5000   | 96/ 96  | 285050                               |                              | 1.612                                   | 101420810                                 |

|   |   |   |               |
|---|---|---|---------------|
| QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D |   |   |               |
| Vicenza, 02/04/2021<br>VCQ052 - MEST711895  | Direzione Qualità<br>Qualitätsmanagement/Quality Management/Gestion Qualité<br>R.BERTELLI | Direzione Prodotto<br>Produktmanagement/Product Management/Direction Produit<br>P.MESSORI | Pagina 1 di 3 |



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ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 103008599 Stock - Canada

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

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



Bestell  
 Your order  
 Commande

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:  
 Stempel des Werksachverständigen  
 Inspector's stamp/Plaque du Tessayeur

MR

Conferma ordine nr: EI21003857  
 Works/Our Order/Ref nr.

Marca: APML  
 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  | Provetta / Probe<br>Spezimen/Échantillon<br>Spigolo Spig. /<br>Wedge Diam. Thickness<br>Larg. diam. épais<br>mm | °F  | Posiz.<br>Saggio<br>Position<br>Section<br>Evidenciar<br>ti | Snervamento<br>Bieckgrenze<br>Yield Stress<br>Limite élastique<br>Rp 0,2%<br>k.s.l. | Snervamento<br>Bieckgrenze<br>Yield Stress<br>Limite élastique | Resistenza<br>Zugfestigkeit<br>Tensile strength<br>Résistance à traction<br>Rm<br>k.s.l. | Allungamento<br>Bieckdehnung<br>Elongation<br>Allongement<br>E 4d<br>% | Strizione<br>Bieckdehnung<br>Reduction of area<br>Striction<br>RA<br>% | Resilienza<br>Kerbschlagarbeit<br>Impact Value<br>Resilience | Durezza<br>Härte<br>Hardness<br>Dureté<br>HB |  |
| Valori richiesti<br>Anforderungen/Requisitos/valores<br>Value demanded  |   | min |   | 30  |  | 75<br>115  | 40   | 50   |  | 140<br>223                                   |  |
| A   | 12,5  | 68  | L   | 38  |  | 80   | 56   | 71   |  | 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 |     | 4 |

Mechanical properties according to ASTM A370.

| Analisi chimica  |              |       |      |              |                |              |       |       |       |       |                |       |
|--|--------------|-------|------|--------------|----------------|--------------|-------|-------|-------|-------|----------------|-------|
| Chemische Zusammensetzung / Chemical Analysis / Analyse chimique |              |       |      |              |                |              |       |       |       |       |                |       |
| Colore / Aspect<br>Schmelze/Gußgeg.                              | min -<br>max | 0,030 | 1,00 | 1,25<br>2,00 | 16,50<br>18,00 | 2,00<br>3,00 | 1,00  | 10,00 | 14,00 | 0,040 | 0,020<br>0,030 | 0,100 |
|  | C %          | SI %  | Mn % | Cr %         | Mo %           | Cu %         | Ni %  | Co %  | P %   | S %   | N %            |       |
| 285050   | 0,018        | 0,43  | 1,73 | 16,67        | 2,02           | 0,50         | 10,00 | 0,142 | 0,032 | 0,023 | 0,089          |       |

| 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  
 Material annealed 1940°F for 4h/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 traité conformément aux exigences

Controllo antimiscelanza con tecnica XRF/OES portatile : OK  
 Verwachsungsprüfung: durch XRF/OES Gerät geführt.  
 Antimixing testing performed with XRF/OES portable : OK  
 Contrôle antimélange svr technique XRF/OES portable : OK

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

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|---|--|---|------------------|
| Vicenza, 02/04/2021<br>VCC052 - MEST711895  | Direzione Qualità<br>Qualitätsmanagement/Quality Management/ Gestion Qualité<br>R.BERTELLI | Direzione Prodotto<br>Produktmanagement/Product Management/Direction Produit<br>P.MESSORI | Pagina<br>2 di 3 |



# Acciaierie Valbruna S.p.A.

38100 VICENZA (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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Erschmelzungsart  
Melting process  
Mode d'elaboration

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



Conferma ordine nr: EI21003857  
Werkz/Our Order/Ref nr.

Qualità: 316/316L  
Werkstoff/Grade/Nuance

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Avviso di Spedizione: D-VI21007934  
Lieferanzüge/Packing list/B.L.

Marca: APLM  
Markenbezeichnung  
Brand / Nuance

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, chapt.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.

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

Vicenza, 02/04/2021

Direzione Qualità  
Qualitätsmanagement/Quality Management/Gestion Qualité

Direzione Prodotto  
Produktmanagement/Product Management/Direction Produit

VCC052 - MEST711895

R.BERTELLI

P.MESSORI

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