



C307058

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

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

Certificato nr. **MEST717927 / 2021 /**  
 Prüfung/Test/Essai

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

Stato di fornitura: **Hot rolled Polished Annealed**  
 Lieferzustand: **Peeled**  
 Delivery state:  
 Etat de livraison:

Produttore:  
 Hersteller/Item/Usine productrice

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

Ordine nr: **102008506 Stock - Canada**

Tipo di Elaborazione: **E+AOD**

Marchi di Fabbrica:



Bestell  
 Your order  
 Commande

Erschmelzungsart  
 Melting process  
 Mode d'elaboration

Zeichen des Lieferwerkes  
 Trade marks  
 Sigles de l'usine productrice

Conferma ordine nr: **EI21001675**

Qualità: **316/316L**

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

**MR**

Avviso di Spedizione: **D-VI21008746**  
 Lieferanzeige/Packing list/B.L.

Marca: **MVAPML ( MAXIVAL )**  
 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 2020 S31600/03 A (5)  
 ASTM A193 2019 B8M CLASS 1  
 ASTM A262 PR. E 2015 316/316L  
 ASTM A276 2017 S31600/03 A  
 ASTM A314 2019 S31600/03  
 ASTM A320 2018 B8M CLASS 1 CLASS1  
 ASTM A370 2020 . (6)  
 ASTM A473 2019 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)2019E1  
 (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 7

Tolerances/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descript. du produit	Dimensioni - In Abmessungen Dimension Dimension	Lunghezza - In Länge Length Longueur	Coletta Schwabe Heat Coele	Pezzi Stückzahl Pieces Pieces	Peso - LB Gewicht Weight Poids	Lotto nr. Lose Lot nr. Lot nr.
0060	Round	3,7500	144/ 169	285081	6	3.038	104017490

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

Vicenza, **13/04/2021**  
 VQQ052 - MEST717927

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

*Bertelli*

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

*Messori*

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*ANS*



C307058

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Marchi di Fabbrica:  
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 Sigles de l'usine productrice



Bestell  
 Your order  
 Commande

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

Punzone del Collaudatore:  
 Stempel des Werkssachverständigen  
 Inspector's stamp/Pointon de l'assesseur

**MR**

Conferma ordine nr: **EI21001675**  
 Werks/Our Order/Ref nr.

Avviso di Spedizione: **D-VI21008746**  
 Lieferanzeige/Packing list/B.L.

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 Brand / Nuance

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 Marquage

### TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem produkt / test a l'etat de fourniture / Prueba sobre el material así como entregado

1) L=longitudinale/längs, T=transversale/quer, Q=Transversale/tangentiel

TEST	Provetta/ Probe Specimen/Eproben Larg./diam. Spess./ Stärke Diam. Dicke Width Diam. Thickness Larg. diam. épais mm	°F	Posiz. Saggio Positioning Location Direction	Snervamento Stress Yield Stress Limite elastico Rp 0,2% k.s.l.	Snervamento Stress Yield Stress Limite elastico	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
							min	max			
Valori richiesti Anforderungen/Required values Valeurs demandées				30	-	75 115	-	40	-	50	140 223
A	12,5	68	L	43		87		56		68	168

### TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado

TEST	min	max
A Grain size for ASTM E112		6

Mechanical properties according to ASTM A370.

### Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Coletta /Heat Schmelze/Couée	min - max	0,030	1,00	1,25 2,00	16,50 18,00	2,00 3,00	1,00	10,00 14,00	0,040	0,020 0,030	0,100	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
285081	0,014	0,57	1,55	16,69	2,06	0,58	10,04	0,159	0,032	0,026	0,059				

### 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	<b>SATISFACTORY</b>

Produced without class I-II Ozone depleting substances.  
 Solution heat treated free from continuous carbide network.  
 Micro and macro etch test: OK.  
 Reduction ratio = 4,1 : 1  
 Material annealed 1940°F for 2h/water cooled.  
 Material is DFARS Compliant

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

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

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

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

Vicenza, <b>13/04/2021</b> VCQ052 - MEST717927	Direzione Qualità Qualitätsmanagement/Quality Management/Qualité Qualité <b>R.BERTELLI</b>	Direzione Prodotto Produktmanagement/Product Management/Direction Produit <b>P.MESSORI</b>	Pagina 2 di 3
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