



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

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

Certificato nr. **MEST840346 / 2021 /**

Nachi/According to/Seien

Prüfung/Test/Essa:

Cliente / Besteller/Purchaser/Client  
**VALBRUNA CANADA LTD**  
 8724 HOLTGATE 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: **110009039 Stock - Canada**

Tipo di Elaborazione: **E+AOD**  
 Erschmelzungsart:  
 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 Werkesachverständigen  
 Inspector's stamp/Poinçon de l'assesseur

**MR**

Conferma ordine nr: **EI21012768**

Werkz/Our Order/Ref. nr.

Avviso di Spedizione: **D-VI21028533**

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 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 7

Toleranz/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. N. de poste	Oggetto Gegenstand Product description Descr. du produit	Dimensioni - In Abmessungen Dimension Dimension	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces	Peso - LB Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0050	Round	3,7500	144/ 165	287037	6	3.089	124421090

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

Vicenza, <b>18/11/2021</b> VCQ052 - MEST840346	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité <b>R.BERTELLI</b>	Direzione Prodotto Produktmanagement/Product Management/Direction Produit <b>P.MESSORI</b>	Pagina 1 di 3
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 1/3



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**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=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probe/é Specimen/Eprouvette Larg diam Spess, Breta Diam, Dicke Weld Diam, Thickness Larg. diam. épais mm	°F	Posiz. Saggio Passage Lorenz Schnittwert %	Snervamento Streckgrenze Yield Stress Limite élastique Rp 0,2% k.s.l.	Snervamento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement E 4d %	Strizione Einschränkung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
	Valori richiesti Anforderungen/Required values Valeurs demandées			30	-	75 115	- 40	- 50	-	140 223
A	12,5	68	L	43		86	55	67		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

Colata / Heat Schmelz/Coules	min	max	1,25	1,60	2,00	2,50	3,15	4,00	5,00	6,30	8,00	10,00	12,50	16,00	20,00	25,00	31,50	40,00	50,00	63,00	80,00	100,00
C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %												
287037	0,021	0,56	1,57	16,68	2,04	0,52	10,11	0,153	0,028	0,027	0,064											

**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 2 h/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 matériels à 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 svr 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 dimensions: satisfaisant

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1308519 7/3



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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, 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.  
 Maxival 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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C308519 3/3