



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

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

Certificato nr. **MEST357271 / 2019 /**
 Prüfung/Test/Essai

Cliente / Besteller/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/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: **812007266 STOCK**
 Bestell
 Your order
 Commande

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

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



Conferma ordine nr: **EI18012153**
 Werks/Cul Order/Ret nr

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

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

MR

Avviso di Spedizione: **D-VI19003278**
 Referenzial/Packing label

Marca: **APML**
 Markenbezeichnung
 Brand / Marque

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 H S31603 A
 AMS-QQ-S-763 D 316/316L A
 ASME SA182 2017 S31600/03 A (0)
 ASME SA193 2017 B8M CLASS 1 (1)
 ASME SA276 2017 S31600/03 A (2)
 ASME SA320 2017 B8M CLASS1 (3)
 ASME SA479 2017 S31600/03 A (4)
 ASTM A182 2018 S31600/03 A (5)
 ASTM A193 2017 B8M CLASS 1
 ASTM A262 2015 PRACTICE E
 ASTM A276 2017 S31600/03 A
 ASTM A314 2015 S31600/03
 ASTM A320 2017A B8M CLASS1
 ASTM A370 2017
 ASTM A473 2001 S31600/03 (6)
 ASTM A479 2018 S31600/03 A
 MIL-S-862 B/1 316/316L
 NACE MR0103 2015 S31600/03 A (7)
 NACE MR0175 2015 S31600/03 A (8)
 QQ-S-763 F 316/316L A

(0)Section II Part A 2017 EDITION For products machined directly from bar refer to ASMF SA479.
 (1)Section II Part A 2017 EDITION
 (2)Section II Part A 2017 EDITION
 (3)Section II Part A 2017 EDITION
 (4)Section II Part A 2017 EDITION
 (5)For products machined directly from bar refer also to ASTM A479.
 (6)Chemical analysis only.
 (7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
 (8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23, 2015

Tolleranza ASTM A484-18 TABLE 3

Tolleranza/Difference/Tolerance

Pos. nr. Pos. n. Item nr. Tit. 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 Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Lose Lot nr. Lote
0010	Round	13 0000	145/ 152	279037		17.395	831305110

Vicenza, **31/01/19**

VCQ008 - MEST357271

Mod. MCE2 - 001/19/01 - 001/19/01 - 001/19/01

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M.RIZZOTTO

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Referenze get/Packing list/B...

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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 asi como entregado

TEST	Provetta/ Probe Specimen-Eprovette Large diam Specs Bore Diam O.D. Width Diam O.D. Large diam Specs Large diam Specs mm	°F	Posiz. Saggi Orientation Tut. Enduse	1) Longitudinale/long. 2) Trasversale/quer. 3) Tangenziale/tangential		Resistenza Zugfestigkeit Tensile strength Resistance a traction	Allungamento Bruchdehnung Elongation Allongement	Strizione Erschwingung Reduction of area Striction	Resilienza Kerbschlagarbeit Impact value Resilience	Durezza Härte Rockwell Dünn HB
				Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% k.s.	Snervamento Streckgrenze Yield Stress Limite elastique					
Valori richiesti		min		30	-	75	40	-	50	140
Anforderungen/Requisit-values Voraussetzungen		max				115	62			223
A	12,5	68	L	40		84	62	69		166

TEST ALLO STATO DI FORNITURA

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

Element	min	max	1.25	16.50	2.00	0.00	0.00	0.00	0.00	0.00	0.00
Element	min	max	0.030	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %
279037	0.016	0.47	1.67	16.51	2.02	0.60	10.13	0.112	0.029	0.028	0.081

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.
Annealing temperature : 1940° F for 5,5 h/water.
Micro and macro etch test : OK
Reduction ratio = 4,7 : 1
Material is DFARS Compliant

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

Controllo antimiscelanza: OK
Verwechslungsprüfung: Substralanalyse durchgeführt
Anti mixing testing performed: OK
Controle antimélange satisfaisant

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

Vicenza, 31/01/19

VCO008 - MEST357271

(Mod. MCE2) Rev. 4/20 27/02/2019 13:58 (2013) 1/0

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Melted 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 through Portal System when it leaves the production plant.

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

The Quality Management System is Certified acc. Pressure Equipment Directive 2014/68/EU Annex 1, chapt.4.3 by TÜEV 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.