



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

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

Certificato nr. **MEST416061 / 2019 /**
 Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
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/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: **903007423**
 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 l'usine productrice



Conferma ordine nr: **EI19002789**
 Werks/Our Order/Ref. nr.

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

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

MR

Avviso di Spedizione: **D-VI19015576**
 Lieferanzeige/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 H S31603 A	
AMS-QQ-S-763 D 316/316L A	
ASME SA182 2017 S31600/03 A (0)	(0)Section II Part A 2017 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2017 B8M CLASS 1 (1)	(1)Section II Part A 2017 EDITION
ASME SA276 2017 S31600/03 A (2)	(2)Section II Part A 2017 EDITION
ASME SA320 2017 B8M CLASS1 (3)	(3)Section II Part A 2017 EDITION
ASME SA479 2017 S31600/03 A (4)	(4)Section II Part A 2017 EDITION
ASTM A182 2018 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
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)	(6)Chemical analysis only.
ASTM A479 2018 S31600/03 A	
MIL-S-862 B/1 316/316L	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316/316L A	

Tolleranza: ASTM A484-18A TABLE 3

Pos. nr. Pos. nr. Item nr. nr. de piece	Oggetto Gegenstand Product de soumission Design. du produit	Tolleranza/Allowance/Tolerance						Lotto nr. Lot Lot nr. Lot nr.
		Dimensioni - In Abmessungen Dimension Dimension	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coutée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids		
0010	Round	13,0000	142/ 142	279662		5.540	835403640	

Vicenza, 29/05/19 VCQ008 - MEST416061	Il collaudatore di stabilimento der Werkstoffverständige / Works inspector / L'agent d'usine M. RIZZOTTO	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R. BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P. MESSORI	Pagina 1 di 3
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 Zeichen des Lieferwerkes
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 Sigles de l'usine productrice



Conferma ordine nr: **E119002789**

Werkst/Our Order/Ref nr

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

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

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Avviso di Spedizione: **D-VI19015576**

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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										
TEST	Provetta/ Probe/étab Specimen/Eprovetu Larg diam/ Speis Eisendiam/ Stöße Weich diam/ Thickness Larg diam/ épais (mm)	Posiz. Saggio Position Lieu de Essai	°F	Snervamento Streckgrenze Yield Stress Limite élastique Rp 0,2%	Snervamento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Résistance à traction Rm	Allungamento Bruchdehnung Elongation Allongement E 4d	Strizione Einziehung Reduction of area Sulcion	Resilienza Kerbschlagwert Impact Value Resilience	Durezza Härte Hardness Dureté HB
Valori richiesti				30	-	75	40	-	50	140
Anforderungen/Required values						115				223
Values demanded										
A	12,5	68	L	40		81	57		73	169

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		1

Mechanical properties according to ASTM A370.

Analisi chimica												
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique												
Colata / Heat Schmelze/Coulée	min	max	1,25	2,00	16,50	2,00	1,00	10,00	0,040	0,020	0,030	0,100
C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %		
279662	0,016	0,38	1,75	16,77	2,02	0,51	10,00	0,102	0,029	0,025	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 = 4,7 : 1
 Annealing temperature : 1940° F for 6 h/water.
 Material is DFARS Compliant

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

Controllo antimiscelanza: OK
 Verwechslungsprüfung: spektralanalytisch durchgeführt
 Antimixing testing performed. OK
 Contrôle antimélange fait: r a s

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

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.

Vicenza, 29/05/19 VCC008 - MEST416061	Il collaudatore di stabilimento der Werkssachverständige / Works inspector / L'agent d'usine M. RIZZOTTO	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion 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.

Ordine nr: 903007423
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Marchi di Fabbrica:
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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.

Vicenza, 29/05/19

VCQC.08 - MEST416061

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

M.RIZZOTTO

Direzione Qualità
 Qualitätsmanagement/Quality Management/Gestion Qualité

R.BERTELLI

Direzione Prodotto
 Produktmanagement/Product Management/Direction Produit

P.MESSORI

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