



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

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

Certificato nr. **MEST259583 / 2018 /**
 Prüfung/Test/Essai

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

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

Produttore:
 Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr. **805006980 STOCK**
 Bestell
 Year order
 Commande

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

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



Conferma ordine nr. **E118005885**
 Works/Our Order/Ref. nr.

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

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

MR

Avviso di Spedizione: **D-VI18016188**
 Ueberanzelge/Packing list/B.L.

Marca: **APML**
 Markenbezeichnung
 Brand / Nuance

Punzonatura: **316/316L**
 Kennzeichnung
 Marking
 Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Anmerkungen / 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 2016 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2016 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 A484-18 TABLE 3							
Tolleranza/Allowance/Tolerance							
Pos. nr.	Oggetto	Dimensioni - In	Lunghezza - In	Colata	Pezzi	Peso - LB	Lotto nr.
Pos. nr. Item nr. Nr. de partie	Gegenstand Product description Description de produit	Abmessungen Dimension Dimension	Länge Length Longueur	Schmelze Heat Coulée	Stückzahl Pieces Pièces	Gewicht Weight Poids	Losnr. Lot nr. Lot nr.
0090	Round	15,0000	147/ 147	276452		7.509	803112660

P.O.#: **P118577**

REF: **R151431**

ITEM#: **527249**

HEAT#: **276452**

FINCH#: **875**

Nov 16/18

HT# 276452



Acciaierie Valbruna S.p.A.

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 Zeichen des Lieferwerkes
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 Sigles de l'usine productrice



Conferma ordine nr: EI18005885
 Werkstatt/Order/Ref nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

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

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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) Längs- und Querschnitte, Torsionsversuche, Charpy- und Ballpenetrationstests										
TEST	Provetta/ Probe Spekimen/Éprouvette Lap Joint Specimen Brazo Diam. Doble Weld Diam. Thickness Lap. diam. Spalte mm	Temp. °F	Fess. Saggio Prova Essai Essai	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% k.s.l.	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm k.s.l.	Allungamento Dehnung Elongation Allongement E 4d %	Strizione Erweichung Reduction of area Striction RA %	Resilienza Kerbschlagenergie Impact Value Resilience	Durezza Härte Hardness Dureté HB
	Valori richiesti	min		30	-	75	-	40	-	140
	Anforderungen/Required values Valeurs énoncées	max				115		50		223
A	12,5	68	L	38		81	62	74		170

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			4

Mechanical properties according to ASTM A370.

Analisi chimica														
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique														
Colata / Metall Schmelze/Casta	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 %			
276452	0,015	0,40	1,75	17,02	2,04	0,38	10,04	0,150	0,030	0,024	0,098			

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 7 h/water.
 Micro and macro etch test : OK
 Reduction ratio = 6,5 : 1
 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 matériel a été fourni conforme aux exigences

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

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

Vicenza, 08/06/18 VCC008 - MEST259583 (Mod. MCE2)	Il collaudatore di stabilimento / der Werkstoffverständige / Works inspector / L'agent d'usine M. RIZZOTTO	Pagina - 2 di 3
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