



Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
 Telefono 0444.968211 - Fax 0444.968386
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
 Telefono 0471.924111 - Fax 0471.924497

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 /

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

Stato di fornitura : Forged - Annealed Peeled
 Lieferzustand
 Delivery stato
 Etat de livraison

Produttore :
 Hersteller/Werks/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 812007266 STOCK
 Bestell
 Your order
 Commande

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

Marchi di Fabbrica:
 Zeichen des Lieferwerkes
 Trade marks
 Siglas de fusine productrice



Conferma ordine nr: EI18012153
 Werks/Our Order/Ref nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:
 Stempel des Werkssachverständigen
 Inspector's stamp/Poinçon de l'assoyeur

MR

Avviso di Spedizione: D-VI19003278
 Lieferanzelge/Packing list/B.L.

Marca: APM L
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
 Marking
 Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Auflzeichnungen / 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 A484-18 TABLE 3

Pos. nr. Pos. nr. Item nr. N° de poste	Oggetto Gegenstand Product description Descrip. de produit	Tolleranza/Allowance/Tolerance						Lotto nr. Lott. nr. Lot nr.
		Dimensioni - In Abmessungen Dimensionen Dimensions	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stücke/N Pieces Pièces	Peso - LB Gewicht Weight Poids		
0010	Round	13,0000	145/ 152	279037		17.395	831305110	

P119909
 R156028
 S21534
 Q79037
 Q75

ANS

Vicenza, 31/01/19 VCQ008 - MEST357271 (Mod. MCE2)	Il collaudatore di stabilimento / der Werkssachverständige / Works Inspector / L'agent d'usine M.RIZZOTTO <i>[Signature]</i>	Pagina - 1 di 3
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Certificato nr. MEST357271 / 2019 /

Nach/According to/Selon

Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
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Conferma ordine nr: EI18012153
 Werks/Our Order/Ref nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI19003278
 Lieferanzelge/Packing list/B.L.

Marca: APML
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
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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

TEST	Provetta/ Pretest Specimen/Eprouvette Larg diam. Spess. Stroh Diam. Dicke Width/Diam. Thickness Larg. diam. epais mm	°F	Posiz. Saggio Probelage Lageort Emplacement	1) L=lungitudinale/längs, T=transversale/quer, Q=Tangenziale/tangentiale		Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2%	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance a traction Rm	Allungamento Bruchdehnung Elongation Allongement E 4d	Strizione Einschnürung Reduction of area Striction RA	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Harte Hardness Durete HB		
				min	max								min	max
Valori richiesti Anforderungen/Required values Valeurs demandées						30	-	75	-	40	-	50	-	140
A	12,5	68	L		40			115		62		69		223
														166

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		3

Mechanical properties according to ASTM A370.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulee	min - max	0,030	1,00	1,25 2,00	16,50 18,00	2,00 3,00	10,00 14,00	1,00	14,00	0,040	0,030	0,100	-	-	-	-
279037	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %					
	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 lt. Anlage erfüllt
 The material has been furnished in accordance with the requirements
 Le matériel a été trouvé conforme aux exigences

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

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

Vicenza, 31/01/19

VCC008 - MEST357271

(Mod. MCE2) VCCFED92C79104024F423404FFA0809

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

M. RIZZOTTO *[Signature]*

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