



Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.
 Telefono 0444.968211 - Fax 0444.968336
 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. **MEST319242 / 2018 /**
 Prüfung/Test/Essai

Ciente / Besteller/Purchaser/Client
VALBRUNA CANADA LTD
 8724 HOLLGATE 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. **809007124 STOCK**
 Bestell
 Your order/
 Commande

Tipo di Elaborazione: **E+AOD**
 Erhebungsart
 Milling process
 Mode d'elaboration

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



Conferma ordine nr. **E118008717**
 Werks/Our Order/Ref. Nr.

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

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

MR

Avviso di Spedizione: **D-VI18027870**
 Lieferanzeige/Packing list/V.L.

Marca: **APML**
 Markenbezeichnung
 Brand/ Nuance

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

SPECIFICHE:

Anforderungen / Requirements / Exigences

Note:

Anforderungen / 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 ASME 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 MR0103MSO 17945 November 23, 2015
- (8)ANSI/NACE MR0175/ISO 15156-3, 3rd edition November 23, 2015

Tolleranza: ASTM A484-18 TABLE 3

Pos. nr. Part. nr. Ser. nr. No. de piece	Oggetto Description Product description Description de produit	Tolleranza/Allowance/Tolerance		Lunghezza - in Length Longueur	Colata Schmelz Melt Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Lot Lot no. Lot. nr.
		Dimensioni - in Abmessung Dimension Dimension						
0060	Round	16,0000		161/ 161	278063		9,387	821501840

P.O.#: P119172
 R#: R153427
 ITEM#: 523266
 HEAT#: 278063
 BRANCH#: 875

INS

Provided by: ENCORE METALS DIVISION OF RMCL



Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.
 Telefono 0444.868211 - Fax 0444.863836
 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. MEST319242 / 2018 / 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/Werks/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr. 809007124 STOCK
 Bestell
 Your order
 Commande

Tipo di Elaborazione: E+AOD
 Erzeugnisart
 Making process
 Mode de fabrication

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



Conferma ordine nr. EI18008717
 Werk/Our Order/Ref. nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI18027870
 Lieferanfrage/Packing list/B.L.

Marca: APML
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
 Marking
 Marquage

TEST ALLO STATO DI FORNITURA										
Test on delivery condition / Prüfung auf lieferbarem Produkt / Test à l'état de fourniture / Prueba sobre el material así como entregado										
TEST	Provetta / Probe Lunghezza Spina Brake Disc, Deck Weld Bead, Thickness Larg. diam. spina	°F	Post. Saggio Prüfung Lüftung Equipment	II) Leungitudinale/Längs. Tétraversal/longue. Querschnitt/Querquerschnitt		Resistenza Zugfestigkeit Tensile strength Résistance à traction	Allungamento Bruchdehnung Elongation Allongement	Strizione Erweichung Reduction of area Écrou	Resilienza Kerbschlagenergie Impact Value Résilience	Durezza Härte Hardness Dureté HB
				Snervamento Stressgrenze Yield Stress Limite élastique Rp 0,2% k x L	Snervamento Stressgrenze Yield Stress Limite élastique					
Valori richiesti		min		30	-	75	-	40	-	140
Auforderungen/Requisits values Valeurs de référence		max				115		50		223
A	12,5	68	L	39		79		63	74	168

TEST ALLO STATO DI FORNITURA		
Test on delivery condition / Prüfung auf lieferbarem Produkt / Test à l'état 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												
Costa / Stahl	Mn -	1,25	16,50	2,00	12,00	10,00	0,040	0,020	-	-	-	-
Schmelze/Coil	max 0,030	1,00	18,00	3,00	14,00	1,00	0,040	0,030	0,100	-	-	-
	C %	SI %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
278063	0,017	0,35	1,77	16,75	2,01	0,39	10,06	0,134	0,034	0,023	0,095	

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 8 h/water.
 Micro and macro etch test : OK
 Reduction ratio = 4,3 : 1
 Material is DFARS Compliant

Sono state soddisfatte tutte le condizioni richieste Die gestellten Anforderungen sind z. Anlage erfüllt The material has been furnished in accordance with the requirements Le matériel a été fourni conforme aux exigences	Controllo antimiscelazione: OK Verwechslungsprüfung: spezialanalytisch durchgeführt Antimixing testing performed: OK Contrôle antimélange ISK: r.a.t.	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional check: satisfactory Contrôle visuel et dimensionnel: satisfaisant
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Provided by: ENCORE METALS DIVISION OF RMCL



Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.
 Telefono 0444.968211 - Fax 0444.963836
 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. MEST319242 / 2018 /
 Prüfung/Test/Éssai

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

Stato di fornitura : Forged - Annealed Peeled
 Lieferzustand
 Delivery state
 État de livraison

Produttore :
 Hersteller/Werksch/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 609007124 STOCK
 Bestell
 Your order
 Commande

Tipo di Elaborazione: E+AOD
 Erhebungsart
 Making process
 Mode d'élaboration

Marchi di Fabbrica:
 Zeichen des Werks/Werkes
 Trade marks
 Signes de l'usine productrice



Conferma ordine nr: EI18008717
 Werk/Our Order/Ref. nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI18027870
 Lieferanweisung/Packing Instr./B.L.

Marca: APML
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
 Marking
 Marquage

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 [97/23/EC] Annex 1, s. 4.3 and 2014/68/EU 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.

Provided by: ENCORE METALS DIVISION OF RMCL

Vicenza, 05/11/18 VCC005 - MEST319242 (Mod. MCE2)	Il collaudatore di stabilimento / der Werkssachverständige / Works Inspector / L'agent d'usine M.RIZZOTTO	Pagina - 3 di 3
---------------------------------------------------------	--------------------------------------------------------------------------------------------------------------	-----------------