



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
 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. MEST475844 / 2019 /  
Prüfung/Éssai

**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 state  
 Etai de livraón

**Produttore:**  
 Hersteller/Fabrik/Usine productrice

**ACCIAIERIE VALBRUNA S.P.A.**

**Ordine nr:** 908007641 P119933-875 ENC  
 Bestell  
 Your order  
 Commande

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

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



**Conferma ordine nr:** EI19006872  
 Werkst/Our Orderref. n.

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

**Punzone del Collaudatore:**  
 Stempel des Werkstachausweisenden  
 Inspector's stamp/Plaqueon de l'assesseur

MR

**Avviso di Spedizione:** D-VI19027752  
 Lieferanzelge/Packing instr.L.

**Marca:** APLM  
 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 2019 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 2019 S31600/03	
ASTM A320 2018 B8M CLASS1	
ASTM A370 2019. (6)	(6)2019E1
ASTM A473 2001 S31600/03 (7)	(7)Chemical analysis only.
ASTM A479 2018 S31600/03 A	
MIL-S-862 B/1 316/316L	
NACE MR0103 2015 S31600/03 A (8)	(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (9)	(9)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. n. St. n. No. de posic.	Oggetto Objekt Produit de livraison Conten. du produit	Tolleranza/Allowance/Tolerance		Lunghezza - In Länge Longeur	Colata Schmelze Huet Craie	Pezzi Stueck Pieces Pièces	Peso - LB Gewicht Wegun Poids	Lotto nr. Lose Lots Lots
		Dimensioni - In Abmessungen Dimensione Contour						
0010	Round	15,0000		136/ 136	281346		6.971	912709460

P.O.#: P119933  
 R#: R158027  
 ITEM#: 527249  
 HEAT#: 281346  
 BRANCH#: 875

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D			
Vicenza, 21/10/19 VCQ052 - MEST475844	Direzione Qualità Qualitätsmanagement/Quality Management/Direction Qualité R. BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produits P. MESSORI	Pagina 1 di 3

IWS

Provided by: ENCORE METALS DIVISION OF RMCI



# 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. MEST475844 / 2019 / Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client <b>VALBRUNA CANADA LTD</b> 8724 HOLLGATE CRESCENT L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA	Stato di fornitura: Forged - Annealed Peeled Lieferzustand Delivery state Etat de livraison	Produttore: Hersteller/Werks/Usine producteur  <b>ACCIAIERIE VALBRUNA S.P.A.</b>
Ordine nr. 808007541 P119933-875 ENC Bestell Your order Commande	Tipo di Elaborazione: E+AOD Erzeugnisart Making process Mode d'élaboration	Marchi di Fabbrica: Zeichen des Lieferwerkes Trade marks Signos de fábrica productora
Conferma ordine nr. EI19006872 Verkau/Oder/Ref. nr.	Qualità: 316/316L Werkstoff/Grade/Nuance	Punzone del Collaudatore: Stempel des Werksprüfverständigen Inspector's stamp/Plombon de l'essayeur
Avviso di Spedizione: D-VI19027752 Lieferanzahl/Packing list/B.L.	Marca: APM L Markenbezeichnung Brand / Nuance	Punzonatura: 316/316L Kennzeichnung Marking Marquage



TEST ALLO STATO DI FORNITURA												
Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'état de fourniture / Prueba sobre el material así como entregado												
TEST	Provetta/ Probe Spécimen/Specimen Luz dim. Spec. Ech. Dim. Ech. Werk Dim. Werkst. Luz. Dim. Luz.	°F	Posiz. Soglia Höhegrenze Liniere Empfangen	Snervamento Streckgrenze Yield Stress Urbé elastique Rp 0,2% k.s.f.	Snervamento Streckgrenze Yield Stress Urbé elastique	Resistenza Zugfestigkeit Tensile Strength Résistance à traction Rm k.s.f.	Allungamento Drehdehnung Elongation Allongement E 4d %	Strizione Zugdehnung Reduction of area Striction RA %	Resilienza Kerbschlagenergie Impact Value Resilience	Durezza Brinell Härte Dübel HB		
Valori richiesti		min		30	-	75	-	40	-	50	-	140
Anforderung an/Required values Valeurs demandées		max				115						223
A	12,5	68	L	38		82		61		75		169

TEST ALLO STATO DI FORNITURA			
Test on delivery condition / Prüfung auf lieferbarem produkt / Test a 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												
Element	Heat	min	1,00	1,25	15,50	2,03	1,00	10,00	0,040	0,030	-	-
Schmelze/Coulee	max	0,030	1,00	2,00	16,00	3,00	1,00	14,00	0,040	0,030	0,100	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
281346	0,014	0,34	1,83	16,95	2,03	0,57	10,08	0,125	0,031	0,030	0,091	

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 = 9,8 : 1  
 Material annealed 1940°F for 7h/water cooled.  
 Material is DFARS Compliant

Sono state soddisfatte tutte le condizioni richieste. Die gestellten Anforderungen sind in Anlehnung erfüllt. The material has been furnished in accordance with the requirements. Le matériel a été traité conforme aux exigences.	Controllo antimiscelanza: OK Verwachsungsprüfung: spezialanalytisch durchgeführt Antimixing testing performed: OK Contrôle antimélange fait r.o.n.	Controllo visivo e dimensionale: soddisfa le esigenze Bruchflächig und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks satisfactory Contrôle visuel et dimensionnel satisfaisant
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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

Vicenza, 21/10/19 VCO052 - MEST475844	Direzione Qualità Qualitätsmanagement/Quality Management/Direction Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3
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Provided by: ENCORE METALS DIVISION OF RMCL



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 In conformità a: EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1  
 Nach/According to/à/En Conformité à: EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1  
 Certificato nr. MEST475844 / 2019 /  
 Prüfung/Test/Essai:

**Cliente / Besteller/Purchaser/Cliant:**  
 VALBRUNA CANADA LTD  
 8724 HOGGATE CRESCENT  
 EST 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:** 908007641 P119933-875 ENC  
 Bestell:  
 Your order:  
 Commande:

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

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



**Conferma ordine nr:** EI19006872  
 Works/Our Order/Ref. nr.:

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

**Punzone del Collaudatore:**  
 Stempel des Werkstoffverständigen:  
 Inspector's stamp/Pôlican de l'assesseur:



**Avviso di Spedizione:** D-VI19027752  
 Lieferanzeige/Packing list/B.L.:

**Marca:** APML  
 Markenbezeichnung:  
 Brand / Nuance:

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

The Quality Management System is also Certified according Pressure Equipment Directive 2014/68/EU Annex 1, chapl.4.3 by TÜV 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 RMCI

P.O. # 5479

Part # 12-FOE-40

Des. 12" CPA 50E S-40 316 S/S

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D			
Vicenza, 21/10/19 VCQ052 - MEST475844	Direzione Qualità Quality Management/Quality Management/Direction Qualité R.BERTELLI	Direzione Prodotto Product Management/Product Management/Direction Produit P.MESSORI	Pagina 3 di 3