



# Acciaierie Valbruna S.p.A.

35100 VICENZA (Italia) - Viale della scienza, 25 z.i.  
 Telefono 0444.868211 - Fax 0444.863836  
 Stab.: 35100 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. MEST754878 / 2021 /  
 Prüfung/Tests/Essai

Cliente / 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  
 Etal de livrare

Produttore:  
 Hersteller/Hersteller/producer

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

Ordine nr: 106008785 RELIANCE PROGRA  
 Bestell  
 Your order  
 Commande

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

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



Conferma ordine nr: EI21007232  
 Works/Our Order/Ref nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI21014702  
 Lieferanzeige/Packing list/...

Marca: APML  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Anzeichnungen / Notes / Notes
VSI 0. 316/316L A	
AISI 316/316L	
AMS 5648 M S31600 A	
AMS 5653 J S31603 A	
AMS-QQ-S-763 D 3*6/316L A	
ASME SA182 2019 S31600/03 A (0)	(0)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2019 B8M CLASS 1 (1)	(1)Section II Part A 2019 EDITION
ASME SA276 2019 S31600/03 A (2)	(2)Section II Part A 2019 EDITION
ASME SA320 2019 B8M CLASS 1 CLASS1 (3)	(3)Section II Part A 2019 EDITION
ASME SA479 2019 S31600/03 A (4)	(4)Section II Part A 2019 EDITION
ASTM A182 2020 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2020 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L	
ASTM A276 2017 S31600/03 A	
ASTM A314 2019 S31600/03	
ASTM A320 2018 B8M CLASS 1 CLASS1	
ASTM A370 2020	
ASTM A473 2019 S31600/03 (6)	(6)Chemical analysis only.
ASTM A479 2020 S31600/03 A	
M L-S-862 B/1 316/316L	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17845 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 A484-20B TABLE 3		Tolleranza/Allowance/Tolerance						
Pos. nr.	Oggetto	Dimensioni - In	Lunghezza - In	Colata	Pezzi	Peso - LB	Lotto nr.	
Pos. nr. Item nr. Nr. de pièce	Oggetto Product description Objet de pièce	Abmessungen Dimension Dimension	Länge Length Longueur	Schmelze Heat Caille	Zusticht Pieces Pièces	Gewicht Weight Poids	Lotus Lot nr Lettre	
0040	Round	13,0000	136/ 136	286115		5,260	111015290	

P.O.#: P123164  
 R#: R168707  
 ITEM#: 521534  
 HEAT#: 286115  
 BRANCH#: 875

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100C			
Vicenza, 09/06/2021 VCC052 - MEST754878	Direzione Qualità Quality Management/Quality Management/Qualité R.BERTELLI	Direzione Prodotto Product Management/Product Management/Direction Produ. P.MESSORI	Pagina 1 di 3

8/25/21  
 INS



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Via e della scienza, 25 z.i.  
 Telefono 0444.668211 - Fax 0444.663836  
 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. MEST754878 / 2021 /  
 Prüfung/Post/Essa.

Cliente / Basteller/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/Fabrik/Usine productrice

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

Ordine nr: 106008785 RELIANCE PROGRA  
 Bestell  
 Your order  
 Commande

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

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



Conferma ordine nr: EI21007232  
 Works/Our Order/Ref. nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI21014702  
 Lieferanzeige/Packing list/V.L.

Marca: APLM  
 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'etat de fourniture / Prueba sobre el material asi como entregado

TEST	Provetta/ Probe Specimen/Échantillon Leg. diam. Sp. / Bore Diam. Thickn. Weld Diam. Thickn. Leg. diam. spall mm	°F	Pass. Saggio Provenance Liquor Essai/essai	Snevamento Streckgrenze Yield Stress Limite élastique Rp 0,2%	Snevamento Zugspannung Tensile Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Résistance à traction Rm	Allungamento Bruchdehnung Elongation Allongement E 4d	%	Strizione Einschnürung Reduction of area Striction RA	%	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
	min			max	30	-	75		40		50	140
A	12,5	68	L	38	-	81	58	-	75	-	173	223

### TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material asi 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/Ceppo	min - max	0,030	1,00	1,25 2,00	16,50 16,00	2,00 3,00	10,00 14,00	-	0,040	0,020 0,030	0,100	-
	C %	SI %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
286115	0,010	0,43	1,73	16,64	2,05	0,46	10,10	0,161	0,031	0,027	0,079	

### 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  
 Material annealed 1976°F for 7,5h/water cooled.  
 Material is DFARS Compliant

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

Controllo antimescolanza con tecnica XRF/OES portatile : OK  
 Verwechslungsprüfung durch XRF/OES Gerät geloun.  
 Antimixing testing performed with XRF/OES portable : OK  
 Contrôle antimélange svr technique XRF/OES portable : OK

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

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 09/06/2021 VCC052 - MEST754878	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3
--	---	---	------------------



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
Telefono 0444.968211 - Fax 0444.963838  
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. MEST754878 / 2021 /

Nach/According to/Sein

Prüfung/Text/Essei

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/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 106008785 RELIANCE PROGRA  
Bestell  
Your order  
Commande

Tipo di Elaborazione: E+AOD  
Erschmelzungsart  
Melting process  
Méthode d'élaboration

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



Conferma ordine nr: EI21007232  
Werkst/Our Order/Ref nr.

Qualità: 316/316L  
Werkstoff/Grade/Nuance

Punzone del Collaudatore:  
Stempel des Werksschwerstäniger  
Inspector's stamp/Pointeur de l'essayeur

MR

Avviso di Spedizione: D-VI21014702  
Lieferanweisung/Packing list/B.L.

Marca: APML  
Markenbezeichnung  
Brand / Nuance

Punzonatura: 316/316L  
Kennzeichnung  
Marking  
Marquage

Melted, poured 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 by the portal system when it leaves the production plant.

The Quality Management System is also Certified according Pressure Equipment Directive 2014/68/EU Annex 1, chap. 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.

WSPR03376/AL00010514000/127000/0112

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 09/06/2021  
VQQ052 - MEST754878

Direzione Qualità  
Quality Management/Quality Management/Gestion Qualité  
R. BERTELLI

Direzione Prodotto  
Produktmanagement/Product Management/Direction Produit  
P. MESSORI

Pagina  
3 di 3