



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

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. MEST535207 / 2020 /  
 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/Hersteller/Usine productrice

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

Ordine nr: 002007914 RELIANCE PROGRA  
 Bestell.  
 Your order  
 Commande

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

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



Conferma ordine nr: EI20001966  
 Works/Our Order/Refer.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:  
 Stempel des Werkstüchverständigen  
 Inspector's stamp/Emprison de l'assayeur

MR

Avviso di Spedizione: D-VI20006074  
 Lieferanzeige/Packing list/Al.

Marca: APML  
 Markenzeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marquage

### SPECIFICHE :

Anforderungen / Requirements / Exigences

Note:

Aufzeichnungen / Notes / Notes

VSI D. 316/316L A  
 AISI 316/316L  
 AMS 5648 M S31600 A  
 AMS 5653 J S31603 A  
 AMS-QQ-S-763 D 316/316L A  
 ASME SA182 2019 S31600/03 A (0)  
 ASME SA193 2019 B8M CLASS 1 (1)  
 ASME SA276 2019 S31600/03 A (2)  
 ASME SA320 2019 B8M CLASS1 (3)  
 ASME SA479 2019 S31600/03 A (4)  
 ASTM A182 2019 S31600/03 A (5)  
 ASTM A193 2019 B8M CLASS 1  
 ASTM A262 2015 PRACTICE E  
 ASTM A276 2017 S31600/03 A  
 ASTM A314 2019 S31600/03  
 ASTM A320 2018 B8M CLASS 1 CLASS1  
 ASTM A370 2019. (6)  
 ASTM A473 2001 S31600/03 (7)  
 ASTM A479 2018 S31600/03 A  
 MIL-S-862 B/1 316/316L  
 NACE MR0103 2015 S31600/03 A (8)  
 NACE MR0175 2015 S31600/03 A (9)  
 QQ-S-763 F 316/316L A

(0)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.

(1)Section II Part A 2019 EDITION

(2)Section II Part A 2019 EDITION

(3)Section II Part A 2019 EDITION

(4)Section II Part A 2019 EDITION

(5)For products machined directly from bar refer also to ASTM A479.

(6)2019E1

(7)Chemical analysis only.

(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

(9)ANSI/NACE MR0175/ISO 15158-3, third edition November 23,2015

R948973  
 509378  
 Load # 50175

Tolleranza: ASTM A484-19 TABLE 3

Tolerance/Allowance/Tolerance

Pos. nr. Pos. nr. la n. n. No. de poste	Oggetto Gegenstand Product description Description du produit	Dimensioni - In Abmessungen Dimension Dimension	Lunghezza - In Länge Length Langueur	Coista Schmelze Heat Coudes	Pezzi Eckstücke Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losnr. Lot no. Lot no.
0030	Round	8,5000	212/ 212	282078		3.534	932602480

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

Vicenza, 09/03/2020 VCQ052 - MEST535207	Direzione Qualità Qualitätsmanagement/Quality Management/Direction Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 3
--	---	---	------------------

ANS



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

In conformità a: EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1

Certificato nr. MEST535207 / 2020 /

Nach/According to/Belon

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 Peeled  
 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore:  
 Hersteller/Hersteller/Usine productrice

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

Ordine nr. 002007914 RELIANCE PROGRA

Bestell:  
 Your order:  
 Commande

Tipo di Elaborazione: E+AOD  
 Erzeugungsart  
 Making process  
 Mode d'elaboration

Marchi di Fabbrica:  
 Zeichen des Lieferanten/Markes  
 Trade marks  
 Sigles de fusine productrice



Conferma ordine nr. EI20001966

Werkz./Our Order/Ref.nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI20006074  
 Lieferfristige/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 a l'etat de fourniture / Prueba sobre el material así como entregado											
TEST	Provetta/ Probe/Tab	°F	Raz. Goglio	Sneramento	Sneramento	Resistenza	Allungamento	Strizione	Resilienza	Durezza	
	Specimen/Éprouvette			Scagliezza	Scagliezza	Zugtragkraft	Dehnung	Einziehung	Kerbschlagarbeit		
	Large Diam. Spec.			Yield Stress	Yield Stress	Tensile strength	Elongation	Reduction of area	Impact Value	Hardness	
	With Diam. Thickness			Limite elastique	Limite elastique	Rm	E 4d	RA		HB	
	Large diam. spec.			Rp 0,2%		ksi	%	%			
	mm										
Valori richiesti		min		30	-	75	40	-	50	140	
Arbeitswerte/Required values		max				115				223	
Values											
A	12,5	68	L	38		81	57	70		174	

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	Heat	min	-	1,25	16,53	2,00	-	10,00	-	0,020	-	-	-
Schmelze/Couée	Treatment	max	0,033	1,00	18,03	3,00	1,00	14,00	-	0,030	0,100	-	-
		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
282378		0,019	0,30	1,73	16,83	2,09	0,49	10,04	0,162	0,034	0,024	0,087	

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.  
 Material annealed 1940°F for 4h/water cooled.  
 Reduction ratio = 7,6 : 1  
 Material is DFARS Compliant

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

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, 09/03/2020 VCG52 - MEST535207	Direzione Qualità Qualitätsmanagement/Quality Management/Direction Qualité R. BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P. MESSORI	Pagina 2 di 3



# Acciaierie Valbruna S.p.A.

38100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
Telefono 0444.968211 - Fax 0444.968836  
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  
Nach/According to/Selon

Certificato nr. MEST535207 / 2020 /  
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Cliet  
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 production

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

Ordine nr: 002007914 RELIANCE PROGRA  
Bestell  
Your order  
Commande

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

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



Conferma ordine nr: EI20001966  
Werks/Our Order/Ref. nr.

Qualità: 316/316L  
Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI20006074  
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, chapt.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.

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

Vicenza, 09/03/2020

Direzione Qualità  
Customer Management/Quality Management/Gestion Qualité

Direzione Prodotto  
Product Management/Product Management/Direction Produit

VCC052 - MEST535207

R.BERTELLI

P.MESSORI

Pagina  
3 di 3