



# 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**  
 Nach/According to/Selon

Certificato nr. MEST868523 / 2022 /  
 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/Item/Usine productrice

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

Ordine nr: 111009149 RELIANCE PROGRA  
 Bestell  
 Your order  
 Commande

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

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



Conferma ordine nr: EI21015024  
 Werks/Our Order/Ref nr.

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

Punzone del Collaudatore:  
 Stempel des Werkssachverständigen  
 Inspector's stamp/Polinçon de l'assesseur

MR

Avviso di Spedizione: D-VI22001450  
 Lieferanzeige/Packing list/B.L.

Marca: APML  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marquage

### SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Aufzeichnungen / 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 316/316L 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 2021 B8M CLASS 1 (1)

(1)Section II Part A 2021 EDITION

ASME SA276 2021 S31600/03 A (2)

(2)Section II Part A 2021 EDITION

ASME SA320 2021 B8M CLASS 1 CLASS1 (3)

(3)Section II Part A 2021 EDITION

ASME SA479 2021 S31600/03 A (4)

(4)Section II Part A 2021 EDITION

ASTM A182 2021 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 (6)

(6)Reapproved 2021

ASTM A276 2017 S31600/03 A

ASTM A314 2019 S31600/03

ASTM A320 2018 B8M CLASS 1 CLASS1

ASTM A370 2021 .

ASTM A473 2021 S31600/03 (7)

(7)Chemical analysis only.

ASTM A479 2021 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

P.O.#: P123988  
 R#: R172312  
 ITEM#: 521534  
 HEAT#: 287123  
 BRANCH#: 875

Tolleranza: ASTM A484-20B TABLE 3

Tolerance/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Ni. de poste	Oggetto Gegenstand Product description Descrpt. du produit	Dimensioni - In		Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stücke Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
		Abmessungen Dimensions Dimension	Dimensionen					
0040	Round	13,0000		147/ 147	287123		5.677	129116300

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

Vicenza, 18/01/2022 VCQ052 - MEST868523	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 3
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3/17/22



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 Mode d'elaboration

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



Conferma ordine nr: EI21015024  
 Works/Our Order/Ref nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI22001450  
 Lieferanweisung/Packing Instruk.

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/é Specimens/Probes/é Long. diam. Spass. Bore Dia. Dia.é Width Dia. Thickness Long. diam. Spass. Dia.	°F	Posiz. Soglia Position Location Emplacement U	Snervamento Stress/é Yield Stress Limite élastique Rp 0,2% k.s.l.	Snervamento Stress/é Yield Stress Limite élastique	Resistenza Zugfestigk. Tensile strength Résistance à traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement E 4d %	Strizione Einschränkung Reduction of area Ectation RA %	Resilienza Kerbschlagenerk. Impact Value Resilience	Durezza Stärke Hardness Dureté HB	
											min
Valori richiesti Anforderungen/Required values Valeurs demandées				30	-	75	-	40	-	50	140
A	12,5	68	L	39		115		59		77	166

### 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		4

Mechanical properties according to ASTM A370.

### Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelz/Coulée	min - max	1,26 2,00	16,60 18,00	2,00 3,00	10,00 14,00	0,020 0,030	0,020 0,030	0,100					
287123	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %		
	0,016	0,39	1,74	16,81	2,07	0,55	10,09	0,152	0,029	0,024	0,099		

### 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 h /water cooled.  
 Material is DFARS Compliant

Sono state soddisfatte tutte le condizioni richieste  
 Die gestellten Anforderungen sind II, Anlage erfüllt  
 The material has been finished in accordance with the requirements  
 Le matériel a été trouvé conforme aux exigences

Controllo antimiscelanza con tecnica XRF/OES portatile : OK  
 Verwechslungsprüfung: durch XRF/OES Gerät geführt.  
 Antilinking testing performed with XRF/OES portable : OK  
 Contrôle antimélange svt 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, 18/01/2022 VQC052 - MEST868523	Direzione Qualità Quality Management/Quality Management/Qualität R.BERTELLI	Direzione Prodotto Product Management/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3
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