



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

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

Certificato nr. **MEST879709 / 2022 /**  
 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/Item/Usine productrice

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

Ordine nr: **112009227 RELIANCE PROGRA**  
 Bestell  
 Your order  
 Commanda

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: **EI21016478**  
 Werks/Our Order/Ref. nr.

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

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

**MR**

Avviso di Spedizione: **D-VI22003297**  
 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 2021 S31600/03 A (0)	(0)Section II Part A 2021 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.#: **P124380**  
 R#: **R172937**  
 ITEM#: **S09318**  
 HEAT#: **286973**  
 BRANCH#: **8TS**

Tolleranza: ASTM A484-20B TABLE 3  
 Toleranz/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Description du produit	Dimensioni - In Abmessungen Dimension Dimension	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0060	Round	8,5000	218/ 218	286973		3.583	120015030

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D			
Vicenza, <b>04/02/2022</b> VCQ052 - MEST879709	Direzione Qualità Qualitätsmanagement/Quality Management/Qualité <b>R.BERTELLI</b>	Direzione Prodotto Produktmanagement/Product Management/Direction Produit <b>P.MESSORI</b>	Pagina 1 di 3



# Acciaierie Valbruna S.p.A.

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 Erzeugnisart  
 Melting process  
 Mode d'elaboration

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Tradé maris  
 Siglas de Usine productrice



Conferma ordine nr: EI21016478  
 Werk/Our Order/Ref. nr.

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MR

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### 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	Proveita/ Probeite Speidma/Eprouvete Long. diam. Spéss. Breite Diam. Dicke Width Diam. Thickness Larg. diam. épais mm	°F	Posiz. Saggio Position Saisonnement	Snervamento Streckgrenze Yield stress Limite élastique Rp 0,2% k.s.l.	Snervamento Streckgrenze Yield stress Limite élastique	Résistenza Zugfestigkeit Tensile strength Résistance à traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement		Strizione Beschönung Reduction of area Striction	Resilienze Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
	min						max	E 4d			
	Valori richieste Anforderungen/Requiert values Valeurs demandées			30	-	75	-	40	-	50	140
						115					223
A	12,5	68	L	39		83		58		72	165

### 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

Cof. / Sheet Schmelz/Double	Chemische Zusammensetzung/Chemical Analysis/Analyse chimique										
	min	max	1,25	16,50	2,00	10,00	0,020				
	0,030	1,00	2,00	18,00	3,00	1,00	14,00	0,040	0,030	0,100	
	C %	SI %	Mn %	Cr %	Mo %	Cu %	NI %	Co %	P %	S %	N %
286973	0,016	0,58	1,69	16,58	2,05	0,68	10,00	0,152	0,029	0,028	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 band 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 = 7,0 : 1  
 Material annealed 1976°F for 5 h / water cooled.  
 Material is DFARS Compliant

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

Controllo antimiscelazione con tecnica XRF/OES portatile : OK  
 Verwechslungsprüfung: durch XRF/OES Gerät geführt.  
 Antimixing testing performed with XRF/OES portable : OK  
 Contrôle antimélange avt 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

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Vicenza, 04/02/2022 VCC052 - MEST879709	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R. BERTELLI	Direzione Prodotto Produktmanagement/Produkt Management/Dirección Producto P. MESSORI	Pagina 2 di 3
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