



## 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

Client / 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  
 Commande

Tipo di Elaborazione: E+AOD  
 Er schmelzungsart  
 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 Werksachverständigen  
 Inspector's stamp/Pointon de l'assesseur

MR

Avviso di Spedizione: D-VI22003297  
 Lieferanzeige/Packing list/V.L.

Marca: APLM  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
VSI 0. 316/316L A	
ANSI . 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#: S09378  
 HEAT#: 286973  
 BRANCH#: 8TS

Tolleranza: ASTM A484-20B TABLE 3

Pos. nr.	Oggetto	Tolleranza/Allowance/Tolerance		Lunghezza - In	Colata	Pezzi	Peso - LB	Lotto nr.
		Dimensioni - In	Abmessungen Dimension Dimension					
Pos. nr. Part. nr. Item nr. Nr. de poste	Oggetto Description Produit description Description du produit	Dimensioni - In	Abmessungen Dimension Dimension	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Casting	Pezzi Stückzahl Pieces Plates	Peso - LB Gewicht Weight Poids	Lotto nr. 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, 04/02/2022 VCC052 - MEST879709	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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 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore:  
 Hersteller/fabrikant/Usine productrice

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

Ordine nr: 112009227 RELIANCE PROGRA  
 Bestell.  
 Your order  
 Commande

Tipo di Elaborazione: E+AOD  
 Erzeugnisart  
 Melling process  
 Mode d'elaboration

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



Conferma ordine nr: EI21016478  
 Wirksamkeit/Order/Ref. nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI22003297  
 Lieferanzelge/Packung 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 à l'état de fourniture / Prueba sobre el material así como entregado

TEST	Provetta/ Probe/lot Specimen/Éprouvette Lag diam. Spelt. Nette Diam. Dicke Wahl Diam. Thickness Lerg. diam. spelt. mm	°F	Posiz. Saggio Probenlage Lage Empfunden U	Snervamento Streckgrenze Yield Stress Limite élastique Rp 0,2% k.s.l.	Snervamento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Résistance à la traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement		Strizione Einschnürung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
							E 4d %	50			
Valori richiesti Anforderungen/Requisits values Valeurs demandées		min		30	-	75	-	40	-	-	140
		max				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 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

Calore /Heat Schmelz/Coulee	min - max	1,25 2,00	16,00 18,00	2,00 3,00	10,00 14,00	0,020 0,030	0,020 0,030	0,100						
286973	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %			
	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 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 = 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 erfüllt  
 The material has been furnished 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 möglich.  
 Antimixing testing performed with XRF/OES portable : OK  
 Contrôle antimélange avt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze  
 Beschäftigung 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, 04/02/2022  
 VQ0052 - MEST879709

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

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

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# Acciaierie Valbruna S.p.A.

38100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
Telefono 0444.988211 - Fax 0444.983836  
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
Telefono 0471.924111 - Fax 0471.924487

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Ordine nr: 112009227 RELIANCE PROGRA  
Bestell  
Your order  
Commande

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

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



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

Qualità: 316/316L  
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Punziona del Collaudatore:  
Stempel des Werkstoffverständigen  
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Avviso di Spedizione: D-V/22003297  
Lieferanzettel/Packing list/V.B.L.

Marca: APML  
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Kennzeichnung  
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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, 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.

WSP7879709MEST87970920220404112020

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

Vicenza, 04/02/2022  
VCC052 - MEST879709

Direzione Qualità  
Qualitätsmanagement/Quality Management/Direction Qualité  
R. BERTELLI

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

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