



# 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 0471.924487

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

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

Certificato nr. MEST774666 / 2021 /  
 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/Werk/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr. 107008845 RELIANCE PROGRA  
 Bestell  
 Your order  
 Commande

Tipo di Elaborazione: E+AOD  
 Erweichungsart  
 Melting process  
 Mode d'élaboration

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



Conferma ordine nr. EI21008690  
 Werks/Our Order/Ref. nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI21017724  
 Lieferanzüge/Packing list/B.L.

Marca: APLM  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L  
 Kennzeichnung  
 Marking  
 Marquage

### SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Auszeichnungen / Notes / Notes

VSI 0. 316/316L A  
 AISI 316/316L  
 AMS 5548 M S31600 A  
 AMS 5553 J S31603 A  
 AMS-CQ-S-763 D 316/316L A  
 ASME SA192 2019 S31600/03 A (0)  
 ASME SA193 2019 B8M CLASS 1 (1)  
 ASME SA276 2019 S31600/03 A (2)  
 ASME SA320 2019 B8M CLASS 1 CLASS1 (3)  
 ASME SA479 2019 S31600/03 A (4)  
 ASTM A182 2020 S31600/03 A (5)  
 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)  
 ASTM A479 2020 S31600/03 A  
 MIL-S-862 B/1 316/316L  
 NACE MR0103 2015 S31600/03 A (7)  
 NACE MR0175 2015 S31600/03 A (8)  
 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)Chemical analysis only.

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

(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

Tolleranza: ASTM A484-20B TABLE 3

Tolleranza/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de case	Oggetto Geometrie Produkt/Description Descrip. du produit	Dimensioni - in Abmessungen Dimensions Dimension	Lunghezza - in Länge Longue Longueur	Colata Schmelze Melt Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losn. Lot nr. Lot no.
0050	Round	13,0000	144/ 144	434112		5.564	102720240

P.O.#: P123851  
 R#: R170462  
 ITEM#: 521534  
 HEAT#: 434112  
 BRANCH#: 875

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

Vicenza, 09/07/2021 VQC052 - MEST774666	Direzione Qualità Qualitätsmanagement/Quality Management/ Gestion Qualité R. BERTELLI	Direzione Prodotto Produktmanagement/Produkt Management/ Direction Produit P. MESSORI	Pagina 1 di 3
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Certificato nr. MEST774666 / 2021 /

Nash/According to/Selon

Prüfung/Prüfung/Prüfung

Cliente / Besteller/Purchaser/Client  
**VALBRUNA CANADA LTD**  
 8724 HOLLGATE CRESCENT  
 L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

Stato di fornitura: Forged - Annealed Peeled  
 Lieferzustand: Forged - Annealed Peeled  
 Delivery state: Forged - Annealed Peeled  
 Etat de livraison: Forged - Annealed Peeled

Produttore:  
 Hersteller/Hersteller/Hersteller

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

Ordine nr: 107008845 RELIANCE PROGRA  
 Bestell/Your order/Commande

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

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



Conferma ordine nr: EI21008690  
 Works/Our Order/Ref nr

Qualità: 316/316L  
 Werkstoff/Grade/Numere

Punzone del Collaudatore:  
 Stempel des Werks/sachverständigen  
 Inspector's stamp/Prüfung de l'essayeur

MR

Avviso di Spedizione: D-VI21017724  
 Lieferanzeige/Packing list/B.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/Stub Specimen/Eprovette Larg diam. Spess. Brick Diam. Dicks Web Diam. Thickness Larg diam. epais mm	°F	Posiz. Saggio Prüfung Lage Erhmelzung	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% K.S.L.	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance a traction Rm K.S.L.	Allungamento Bruchdehnung Elongation Allongement		Strizione Einziehung Reduction of area Striction	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Durete HB
							E 4d %	RA %			
Valori richiesti Anforderungen/Requisit values Valeurs demandées		min max		30	-	75 115	-	40	-	50	140 223
A	12,5	68	L	38		81		57		72	168

### 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		2

Mechanical properties according to ASTM A370.

### Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coûlee	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
434112	0,015	0,43	1,79	16,72	2,10	0,50	10,30	0,129	0,032	0,027	0,085

### 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	boili	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 1940°F for 5,5h/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 fourni conformément aux exigences

Controllo antimiscelanza con tecnica XRF/OES portatile: OK  
 Verwachsungsprüfung durch XRF/OES Gerät gefolgt.  
 Antimixing testing performed with XRF/OES portable: OK  
 Contrôle antimélange ext technique XRF/OES portable: OK

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

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Vicenza, 09/07/2021 VCQ052 - MEST774666	Direzione Qualità Quality Management/Qualitätsmanagement/Direction Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3
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Ordine nr: **107008845 RELIANCE PROGRA**  
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Commande

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Erschmelzungsart  
Melting process  
Mode d'elaboration

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Zeichen des Lieferwerkes  
Trade marks  
Sigles de l'usine productrice



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Inspector's stamp/Poinçon de l'essayeur

**MR**

Avviso di Spedizione: **D-VI21017724**  
Lieferanzeige/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, 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, **09/07/2021**  
VCO052 - MEST774666

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

Direzione Prodotto  
Produktmanagement/Product Management/Directrice Produit  
**P. MESSORI**

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