



Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.
 Telefono 0444.988211 - 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

Certificato nr. MEST774666 / 2021 /
 Prüfungs/Essai

Ciente / 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
 Erhmelzungsart
 Melting process
 Mode d'elaboration

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 Werksachverständigen
 Inspector's Stamp/Pointon de l'essayeur

MR

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

Marca: APML
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
 Marking
 Marquage

SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Auzeichnungen / 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 A192 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 (E)
 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 TAB E 3

Pos. nr. Pos. nr. N. de case	Oggetto Gegenstand Produit / description Descrip. du produit	Tolleranza/Allowance/Tolerance		Lunghezza - in Länge Longueur	Colata Schmelze Fusil Coulée	Pezzi Stückzahl Pièces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Lose- lot nr. Lot no.
		Dimensioni - in Abmessungen Dimensions Dimensions						
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
 VCQC52 - MEST774666

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

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

Pagina
 1 di 3

scanned 11/23/2021 JWS



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

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
 Lefranzengel/Packing list/B.L.

Marca: APLM
 Markenbezeichnung
 Brand / Nuance

Punznatura: 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/Éprouvette Larg diam. Spess. Brick Diam. Dicks Web Diam. Thickness Larg diam. epais mm	°F	Posiz. Saggio Prüfung Lage Erhmelzung	Snervamento Streckgrenze Yield Stress Limite élastique Rp 0,2% k.s.l.	Snervamento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Résistance à traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement		Strizione Einziehung Reduction of area Striction	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté 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/Coûlée	min - mar 0,030	1,00	1,25 2,00	16,60 18,00	2,00 3,00	1,20	10,00 14,00	0,020 0,030	0,040 0,030	0,030 0,100	-	-	-	-
	C %	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 conforme aux exigences

Controllo antimiscelazione 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

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

Vicenza, 09/07/2021 VCQ052 - MEST774666	Direzione Qualità Quality Management/Quality Management/Direction Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3
--	--	---	------------------



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/Tes/Essai

Cliente / Besteller/Purchaser/Client
 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/Produktionsunternehmen

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 107008845 RELIANCE PROGRA
 Bestell
 Your order
 Commande

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

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



Conferma ordine nr: EI21008690
 Werks/Dur Order/Ref. nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:
 Stempel des Werksachverständigen
 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 Produits
P. MESSORI

Pagina
 3 di 3