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36100 VICENZA (Italia) - Viale della scienza, 25 z.1.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924467

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

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

Certificato nr. **MEST659846 / 2021 /**

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

Stato di fornitura: **Hot rolled - Annealed Peeled**
Lieferzustand
Delivery state
Etat de livraison

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 101008410 Stock - Canada
Bestell
Your order
Commande

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: **EI21000024**
Werks/Our Order/Ref nr.

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

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

MR

Avviso di Spedizione: **D-VI21000140**
Lieferanzeiger/Packing list/B.L.

Marca: **MVAPML (MAXIVAL)**
Markenbezeichnung
Brand / Nuance

Punzonatura: **316/316L**
Kennzeichnung
Marking
Marquage

SPECIFICHE :

Anforderungen / Requirements / Exigences

Note:

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)
 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 2019 B8M CLASS 1
 ASTM A262 2015 PRACTICE E
 ASTM A276 2017 S31600/03 A
 ASTM A314 2019 S31600/03
 ASTM A320 2018 B8M CLASS 1 CLASS1
 ASTM A370 2020 . (6)
 ASTM A473 2019 S31600/03 (7)
 ASTM A479 2020 S31600/03 A
 MIL-S-862 B/1 316/316L
 NACE MR0103 2015 S31600/03 A (8)
 NACE MR0175 2015 S31600/03 A (9)
 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)2019E1

(7)Chemical analysis only.

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

(9)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 poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - In Abmessungen Dimensions Dimension	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Casta	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Lotnr. Lot nr. Lot nr.
0090	Round	6,5000	123/ 123	433108		1.195	106913270

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

Vicenza, **08/01/2021**
VCQ005 - MEST659846

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

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

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 Prüfung/Test/Essai

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ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: **101008410 Stock - Canada**
 Bestell / Your order / Commande

Tipo di Elaborazione: **E+AOD**
 Erhitzungsart /
 Heating process /
 Mode d'elaboration

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



Conferma ordine nr: **EI21000024**
 Works/Ordr / Order/Ref nr

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Avviso di Spedizione: **D-VI21000140**
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Marca: **MVAPML (MAXIVAL)**
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 Brand / Nuance

Punzonatura: **316/316L**
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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 asi como entregado

TEST	Provetta / Probe Specimen/Eprova Larg diam Spoke, Stria Diam. Diska Width Diam. Thickness Larg. diam. epais mm	°F	Posiz. Saggio Probenage Location Empilagemen	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 Einschnürung Reduction of area Striction	Resilienza Kerbschlagenergie Impact Value Resiliencia	Durezza Härte HRCmax Durete HB	
							E 4d %	RA %				
Valori richiesti		min max		30	-	75 115	-	40	-	50	-	140
Anforderungen/Required values Valores demandados				38		82	63		77			168
A	12,5	68	L									

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		4

Mechanical properties according to ASTM A370.

Analisi chimica

Colata / Heat Schmelze/Coulee	Chemische Zusammensetzung/Chemical Analysis/Analyse chimique										
	min - max	1,25	16,50	2,00	10,00	0,020	0,030	0,100			
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %
433108	0,030 1,00	0,030 2,00	1,00 2,00	16,91	2,10	0,53	10,05	0,079	0,027	0,026	0,065

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 = 10,5 : 1
 Material solution annealed 1976°F for 3.5h/water cooled.
 Material is DFARS Compliant.

Sono state soddisfatte tutte le condizioni richieste
 Die gestellten Anforderungen sind it. Anlage erfüllt
 The material has been furnished 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 geföhrt.
 Antimixing 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

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Acciaierie Valbruna S.p.A.

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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.
 Maxival 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.

WAPR-01/EN10204/02/316/316L/316/316L/316/316L

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