



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

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

Certificato nr. MEST653805 / 2020 /
 Prüfung/Test/Essai

Cliente / Besteller/Kurchaser/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/Fabrik/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 012008374 P121796-875 ENC
 Bestell
 Your order
 Commande

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

Marchi di Fabbrica:
 Zeichen des Lieferwerkes
 Trade marks
 Signes de fusine productrice



Conferma ordine nr: EI20010718
 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-VI20027844
 Lieferanzeige/Packing list/B.L.

Marca: APM L
 Markenbezeichnung
 Brand / Nuance

Funzionatura: 316/316L
 Kennzeichnung
 Marking
 Marquage

SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Anzeichnungen / Notes / Notes

VSI D. 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 38M CLASS 1 (1)
 ASME SA276 2019 S31600/03 A (2)
 ASME SA320 2019 38M CLASS 1 CLASS* (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 MRC103/ISO 17945 November 23, 2015

(9)ANSI/NACE MRC175/ISO 15156-3, third edition November 23, 2015

P.O.#: P121796
 R# R164007
 ITEM#: 521534
 HEAT#: 283799
 BRANCH#: 875

Tolleranza: ASTM A484-20B TABLE 3

Tolerance/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 Schmelz Heat Coutée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losn. Lot nr. Lettre
0010	Round	13,0000	145/ 145	283799		5.600	127913440

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

Vicenza, 11/12/2020
 VCCQ052 - MEST653805

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

Bertelli

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

Messori

Pagina
 1 di 3

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 Nach/According to/Belon

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MR

Avviso di Spedizione: D-VI20027844
 Lieferanzge/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 Boremen/Eprouvette Leg. diam. Spess. Bore Diam. Thickness Leg. diam. epais. mm	Posiz. Saggio Position Location Emplacement	Snervamento Bieckgeiz 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 Buehdehnung Elongation Allongement E 4d %	Strizione Einziehprüfung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit - pendulum Resilience	Durezza Härte - Rockwell Dureté HB
	Valori richiesti Anforderungen/Required values Valeurs demandées	min max		30	-	75 115	- 40	- 50	-
A	12,5	68 L	40		82	60	73		171

TEST ALLO STATO DI FORNITURA

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TEST	min	max
A Grain size for ASTM E112		2

Mechanical properties according to ASTM A370.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Content / Anteil / mm. Schmelze/Coulee	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %
283799	0,018	0,38	1,76	16,66	2,02	0,51	10,05	0,146	0,031	0,029	0,094

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.
 Material annealed 1940°F for 5.5h/water cooled.
 Reduction ratio = 4,7 : 1
 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 antimiscelanza con tecnica XRF/OES portatile: OK
 Verwechslungsprüfung durch XRF/OES Gerät geföhrt
 Antimixing testing performed with XRF/OES portable: OK
 Contrôle antimélange svr technique XRF/OES portable: OK

Controllo visivo e dimensionale: soddisfa le esigenze
 Besichtigung und Ausmessung: ohne Beanstandung
 Visual inspection and dimension checks satisfactory
 Contrôle visuel et dimension satisfaisant

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Vicenza, 11/12/2020 VQC052 - MEST653805	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produ. P.MESSORI	Pagina 2 di 3
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