



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

In conformità a: EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1
 Nach/According to/Selon

Certificato nr. MEST475844 / 2019 /
 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: 908007641 P119933-875 ENC
 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: EI19006872
 Werks/Our Order/Ref nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI19027752
 Lieferanzeige/Packing list/B.L.

Marca: APML
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
 Marking
 Marquage

SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Aufzeichnungen / Notes / Notes

VSI 0 316/316L A
 AISI 316/316L
 AMS 5648 M S31600 A
 AMS 5653 H S31603 A
 AMS-QQ-S-763 D 316/316L A
 ASME SA182 2017 S31600/03 A (0)
 ASME SA193 2017 B8M CLASS 1 (1)
 ASME SA276 2017 S31600/03 A (2)
 ASME SA320 2017 B8M CLASS1 (3)
 ASME SA479 2017 S31600/03 A (4)
 ASTM A182 2019 S31600/03 A (5)
 ASTM A193 2017 B8M CLASS 1
 ASTM A262 2015 PRACTICE E
 ASTM A276 2017 S31600/03 A
 ASTM A314 2019 S31600/03
 ASTM A320 2018 B8M CLASS1
 ASTM A370 2019 . (6)
 ASTM A473 2001 S31600/03 (7)
 ASTM A479 2018 S31600/03 A
 MIL-S-862 B/1 316/316L
 NACE MRC103 2015 S31600/03 A (8)
 NACE MRC175 2015 S31600/03 A (9)
 QQ-S-763 F 316/316L A

(0)Section II Part A 2017 EDITION For products machined directly from bar refer to ASME SA479.

(1)Section II Part A 2017 EDITION

(2)Section II Part A 2017 EDITION

(3)Section II Part A 2017 EDITION

(4)Section II Part A 2017 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 A484-18A TABLE 3

Tolleranza/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - in Abmessungen Dimension Dimension	Lunghezza - in Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0010	Round	15,0000	136/ 136	281346		6.971	912709460

P.O.#: P119933
 R#: R158027
 ITEM#: 527249
 HEAT#: 281346
 BRANCH#: 875

ANS

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

Vicenza, 21/10/19
 VCQ052 - MEST475844

Direzione Qualità
 Qualitätsmanagement/Quality Management/Session Qualité
 R.BERTELLI *Bertelli*

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

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Marca: APLM
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Punzonatura: 316/316L
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Avviso di Spedizione: D-VI19027752
 Lieferanzahl/Packing list/B.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

1) L=longitudinale/longs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probe Specimen/Eprouvette Larg. diam. 3 ess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°F	Posiz. Saggio Prüfung Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite élastique Rp 0,2% K.s.l.	Snervamento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm K.s.l.	Allungamento Bueilung Elongation Allongement		Strizione Einschnürung Reduction of area Striction	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
							E 4d %	RA %			
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		30	-	75 115	-	40	-	50	140 223
A	12,5	68	L	38		82		61		75	169

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		1

Mechanical properties according to ASTM A370.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Coata /Heat Schmelz/Coulée	min - max	1,25 2,00	18,50 18,00	2,00 3,00	10,00 14,00	0,020 0,030	0,100	0,020 0,030	0,100	0,020 0,030	0,100
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %
281346	0,014	0,34	1,83	16,95	2,03	0,57	10,08	0,125	0,031	0,030	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 = 9,6 : 1
 Material annealed 1940°F for 7h/water cooled.
 Material is DFARS Compliant

Sono state soddisfatte tutte le condizioni richieste
 Die gestellten Anforderungen sind lt. Anlage erfüllt
 The material has been furnished in accordance with the requirements
 Le matériel a été trouvé conforme aux exigences

Controllo antimescolanza: OK
 Verwechslungsprüfung: spectralanalytisch durchgeführt
 Anmixing testing performed: OK
 Contrôle antimélange fait: r.a.s.

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

Melted 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 through Portal System when it leaves the production plant.

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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.

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