



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. MEST216410 / 2018 /
Prüfung/Test/Essai

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

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

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 802006872 STOCK REPLACEME
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: EI18002458
Werkst/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-VI18007680
Lieferanzeige/Packing list/B.L.

Marca: APLM
Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
Kennzeichnung
 Marking
 Marquage

SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Autzeichnungen / 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 2015 S31600/03 A (0)
 ASME SA193 2015 B8M CLASS 1 (1)
 ASME SA276 2015 S31600/03 A (2)
 ASME SA320 2015 B8M CLASS1 (3)
 ASME SA479 2015 S31600/03 A (4)
 ASTM A182 2016 S31600/03 A (5)
 ASTM A193 2016 B8M CLASS 1
 ASTM A262 2015 PRACTICE E
 ASTM A276 2017 S31600/03 A
 ASTM A314 2015 S31600/03
 ASTM A320 2017A B8M CLASS1
 ASTM A370 2017 .
 ASTM A473 2001 S31600/03 (6)
 ASTM A479 2017 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 PT.A 2015 EDITION For products machined directly from bar refer to ASME SA479.

(1)SECTION II PT.A 2015 EDITION

(2)SECTION II PT.A 2015 EDITION

(3)SECTION II PT.A 2015 EDITION

(4)SECTION II PT.A 2015 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 A484-16 TABLE 3

Tolleranza/Allowance/Tolerance

Pos. nr. <small>Pos. nr. Item nr. N° de poste</small>	Oggetto <small>Gegenstand Product description Descr. du produit</small>	Tolleranza/Allowance/Tolerance		Lunghezza - In <small>Länge Length Longueur</small>	Colata <small>Schmelze Heat Coulée</small>	Pezzi <small>Stückzahl Pieces Pièces</small>	Peso - LB <small>Gewicht Weight Poids</small>	Lotto nr. <small>Losnr. Lot nr. Lot nr.</small>
		Dimensioni - In <small>Abmessungen Dimension Dimension</small>						
0110	Round	11,0000		140/ 146	275138		11.809	723607600

Vicenza, 12/03/18

VCQ008 - MEST216410

(Mod. MCE2) WSPFABR14472814ACCLAKM4201020415

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M.RIZZOTTI *M. Rizzotti*

Pagina - 1 di 3



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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 así como entregado

TEST	Provetta/ Probe/Stub Specimen/Epruvette Larg./diam. Spec. Bore/Diam. Dia. Wall/Diam. Thickness Larg. diam. epais. mm	°F	Post. Saggio Position Location Emplacement °	Sneramento Streckgrenze Yield Stress Rp 0,2% k.s.l.	Sneramento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm k.s.l.	Alungamento Bruchdehnung Elongation Allongement E 4d %	Strizione Einschnürung Reduction of area Striction %	RA %	Resilienza Kerbschlagwert Impact Value Resilience	Durezza Härten Hardness Dureté HB
	Valori richiesti Anforderungen/Required values Valeurs demandées		min max	30	-	75 115	-	40	-	50	-
A	12,5	68	L	38		82	63		76		170

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado

TEST	min	max
A Grain size for ASTM E112		4

Mechanical properties according to ASTM A370.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Couée	min - max	1,25 2,00	16,50 16,00	2,00 3,00	1,00	10,00 14,00	-	-	0,020 0,030	0,100	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %			
275138	0,019	0,32	1,68	16,90	2,07	0,41	10,09	0,134	0,031	0,030	0,097			

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 II-Ozone depleting substances.
Solution heat treated free from continuous carbide network.
Micro and macro etch test : OK
Reduction ratio = 4,6 : 1
Annealing temperature : 1940° F for 4,5 h/water.
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 antimiscelazione: OK
Verwechslungsprüfung: spektralanalytisch durchgeführt
Anti-mixing 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 dimensionnel: satisfaisant

Vicenza, 12/03/18
VCC008 - MEST216410
(Mod. MCE2)

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Pagina - 2 di 3



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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.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2008, IATF 16949 : 2016, AS 9100C

The Quality Management System is Certified acc. Pressure Equipment Directive ["97/23/EC"] Annex 1,s.,4.3 and 2014/68/EU by TUEV 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.

Vicenza, 12/03/18

VCC008 - MEST216410

(Mod. MCE2) WEP 008/11/17/14/12/10/09/08/07/06/05/04/03/02/01/00/96

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Pagina - 3 di 3