



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

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

Certificato nr. **MEST216410 / 2018 /**

Nach/According to/Galen

Prüfung/Tes/Essai

Cliente / Besteller/Purchaser/Cliant
VALBRUNA CANADA LTD
 8724 HOLLGATE 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**
 Werk/Ouvr/Order/Ref nr.

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

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

MR

Avviso di Spedizione: **D-VI18007680**
 Lieferanzeige/Packing label

Marca: **APML**
 Markenbezeichnung
 Brand / Nuance

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

SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Anzeichnungen / 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 CLASS 1
 ASTM A370 2017
 ASTM A473 2001 S31600/03 (E)
 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

Pcs. nr. Fas. nr. Item nr. No. de poste	Oggetto Objekt Part description Descript. de produit	Dimensioni - In		Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stücken Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Lose Lot No. Lot No.
		Abmessungen Dimensions Dimensions						
0110	Round	11,0000		140/ 146	275138		11.809	723607600

Vicenza, 12/03/18

VCC008 - MEST216410

(Mod. MCE2) WSP/AR/AL/MTZ/VALBRUNA/ITALY

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

M. RIZZOTTO *M. Rizzotto*

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 8724 HOLLGATE CRESCENT
 L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

Stato di fornitura: Forged - Annealed FORGED
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 Hersteller/Hersteller/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 802006872 STOCK REPLACEMENT
 Bestell-/
 Your order
 Commande

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

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



Conferma ordine nr: EI18002458
 Vertrags-/Order/Ref. nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI16007680
 Lieferanzugs/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 à l'état de fourniture / Prueba sobre el material así como entregado

TEST	Provette/ Probe Specimens Lig. Dim. Specs Specs Dim. Data Weld Dim. Thickness Lig. Dim. Spec.	°F	Posiz. Saggio Position Location Emplacement	Snervimento Stress/strain Yield Stress Limits elastic Rp 0,2%	Snervimento Stress/strain Yield Stress Limits elastic	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm k.s.f.	Allungamento Bruchdehnung Elongation Allongement		Strizione Einschnürung Reduction of area Section	Resilienza Kerbschlagenergie Impact Value Resilience	Durezza Härte Hardness Dureté HB	
							E 4d %	RA %				
	Valori richiesti Anforderungen/Requisits Valeurs demandées	min		30	-	75	-	40	-	50	-	140
		max				115						223
A	12,5	68	L	38		82		63		76		170

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem Produkt / Test à l'état 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/Coulee	0,00 - max 0,030	1,00	1,25 2,00	16,50 18,00	2,00 3,00	1,00	10,00 14,00	0,040	0,023 0,030	0,100				
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %			
275138	0,019	0,32	0,68	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 I-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 in Anlage erfüllt
 The material has been furnished in accordance with the requirements
 Le matériel a été fourni conforme aux exigences

Controllo antimiscelazione: OK
 Verwechslungsprüfung: spektralanalytisch durchgeführt
 Antimixing 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

VC0008 - MEST216410

(Mod. MCE2)

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

M. RIZZOTTO

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Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.988211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

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Commande

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Erschmelzungsart
Melting process
Mode d'elaboration

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



Conferma ordine nr. E118002458
Werkst./Our Order/Ref nr.

Qualità: 316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore:
Steinzel des Werkstachverständigen
Inspector's stamp/Pointon de l'essayeur

MR

Avviso di Spedizione: D-VI18007680
Lieferanzelge/Packing Instr. L.

Marca: APLM
Markenbezeichnung
Brand / Nuance

Punzonatura: 316/316L
Kenzeichnung
Marking
Marquage

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.

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.

Vicenza, 12/03/18

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(Mod. MCE2) 107749841487794AC20408201702913

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