



HT# 274318

Acciaierie Valbruna S.p.A.

38100 VICENZA (Italia) - Viale della scienza, 25 z.i.
 Telefono 0444.968211 - Fax 0444.963836
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
 Telefono 0471.924111 - Fax 0471.924497

C199049

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. MEST137504 / 2017 /
 Prüfung/Test/Essai

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

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

Produttore:
 Hersteller/Werk/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 706006424 Stock - Canada
 Bestell
 Your order
 Commande

Tipo di Elaborazione: E+AOD
 Erzeugnisart
 Melting process
 Mode d'élaboration

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



Conferma ordine nr: EI17006756
 Works/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-VI17027461
 Lieferanzeige/Packung ist/B.L.

Marca: APML
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
 Marking
 Marquage

SPECIFICHE :

Anforderungen / Requirements / Exigences

Note:

Auzeichnungen / 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 CLASS1 (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 CLASS1
 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 2010 S31600/03 A
 NACE MR0175 2015 S31600/03 A (7)
 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 MR0175/ISO 15156-3, third edition November 23,2015

Tolleranza: ASTM A484-16 TABLE 3

Tolerance/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Description Produit Description Design. du produit	Dimensioni - In		Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Casta	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Lohnr. Lot nr. Lot nr.
		Abmessungen Dimensions Dimensions						
0070	Round	8,5000		213/ 244	274318	1	19.147	714509010

Vicenza, 04/10/17

VCQ008 - MEST137504

(Mod. MCE2) MCE2

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

M. RIZZOTTI *[Signature]*

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Lieferzustand
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Etat de livraison

Produttore:
Hersteller/Fabrik/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 706006424 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: EI17006756
Werkz/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-VI17027461
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Marca: APML
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 así como entregado

TEST	Provetta/ Probe/é Specimen/Epruve/é Larg. diam. Spec. Breite Diam. Probe Wdh. Diam. Thickness Larg. diam. épais mm	°F	Posto: Seggio Prosepe Lévier Démonté	1) L=longitudinale/long., T=trasversale/quer, Q=Tangenziale/tangentiel		Snervamento Snervamento Yield Stress Limite élastique Rp 0,2% k.s.l.	Snervamento Snervamento Yield Stress Limite élastique Rp 0,2% k.s.l.	Resistenza Zugfestigkeit Tensile strength Résistance à traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement E 4d %	Strizione Einschnürung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Kleinheit Dureté HB
				min	max							
Valori richiesti Anforderungen/Required values Valeurs demandées				30	-	75	-	40	-	50	-	140
A	12,5	68	L	41		83		57		73		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

Chimische Zusammensetzung/Chemical Analysis/Analyse chimique												
Colata /Heat Schmelze/Couée	min	-	1,25	16,50	2,00	-	10,00	-	-	0,020	-	-
	max	0,030	1,00	2,00	18,00	3,00	1,00	14,00	-	0,040	0,030	0,100
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
274318	0,015	0,34	1,71	16,91	2,06	0,43	10,06	0,115	0,029	0,027	0,083	

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.
Annealing temperature : 1940° F for 4 h/water.
Micro and macro etch test : OK
Reduction ratio = 7,6 : 1
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
Anfrischung 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 check: satisfactory
Contrôle visuel et dimensions: satisfaisant

Vicenza, 04/10/17

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(Mod. MCE2)

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Melting process
Mode d'elaboration

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



Conferma ordine nr: EI17006756
Werkst./Our Order/Ref. nr.

Qualità: 316/316L
Werkstoff/Grade/Nuance

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Stempel des Werkssachverständigen
Inspector's stamp/Poligon de l'essayeur

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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.

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, 04/10/17

VCQ008 - MEST137504

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M. RIZZOTTO

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