



Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.
 Telefono 0444.968211 - Fax 0444.963836
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
 Telefono 0471.924111 - Fax 0471.924497

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

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

Certificato nr. MEST390512 / 2019 /
Prüfung/Test/Essai

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

Stato di finitura : Forged - Annealed Peeled
Lieferzustand
 Delivery state
 Etat de livraison

Produttore :
Hersteller/Werk/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 902007335 STOCK
Bestell
 Year order
 Commandes

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: EI19001217
Werkst/Our Order/Ref. nr.

Qualità: 316/316L
Werkstoff/Grade/Neance

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

MR

Avviso di Spedizione: D-VI19010091
Lieferanfrage/Packing Invo. L.

Marca: APM L
Markenbezeichnung
 Brand / Neance

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) | (0)Section II Part A 2017 EDITION For products machined directly from bar refer to ASME SA479. |
| ASME SA193 2017 B8M CLASS 1 (1) | (1)Section II Part A 2017 EDITION |
| ASME SA276 2017 S31600/03 A (2) | (2)Section II Part A 2017 EDITION |
| ASME SA320 2017 B8M CLASS1 (3) | (3)Section II Part A 2017 EDITION |
| ASME SA479 2017 S31600/03 A (4) | (4)Section II Part A 2017 EDITION |
| ASTM A182 2018 S31600/03 A (5) | (5)For products machined directly from bar refer also to ASTM A479. |
| ASTM A193 2017 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) | (6)Chemical analysis only. |
| ASTM A479 2018 S31600/03 A | |
| MIL-S-862 B/1 316/316L | |
| NACE MR0103 2015 S31600/03 A (7) | (7)ANSI/NACE MR0102/ISO 15845 November 23, 2015 |
| NACE MR0175 2015 S31600/03 A (8) | (8)ANSI/NACE MR0175/ISO 15155-3, third edition November 23, 2015 |
| QQ-S-763 F 316/316L A | |

Tolleranza: ASTM A484-18A TABLE 3

| Pos. nr. <small>Pos. nr. Item no. No. de poste</small> | Oggetto <small>Gegenstand Produkt description Objekt, cu produs</small> | Tolleranza/Allowance/Tolerance | | Lunghezza - In <small>Length Länge Longueur</small> | Colata <small>Shrinkage Heat Coulée</small> | Pezzi <small>Quantity Pièces</small> | Peso - LB <small>Weight Weght Poids</small> | Lotto nr. <small>Lot no. Lot n.</small> |
|---|--|--|--|--|--|---|--|--|
| | | Dimensioni - In <small>Dimension Dimensions</small> | | | | | | |
| 0010 | Round | 16,0000 | | 149/ 149 | 279583 | | 8.702 | 833203900 |

P120748 R159130 523266 279583 875

| | | |
|---|--|-----------------|
| Vicenza, 03/04/19 VCG006 - MEST390512 <small>(Mod. MCE2) VCP06-03/04/19-03/04/19-03/04/19</small> | Il collaudatore di stabilimento / der Werkssachverständige / Works Inspector / L'agent d'usine M. RIZZOTTI | Pagina - 1 di 3 |
|---|--|-----------------|

P.O. # 5499 Part # 12-FOE65-STD Desc: 12" CPA 65E STD 316 S/S
 WS

Provided by: ENCORE METALS DIVISION OF RMCL



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

Certificato nr. MEST390512 / 2019 /
 Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
VALBRUNA CANADA LTD
 8724 HOLTGATE CRESCENT
 L5T 6Z1 - MILTON, ONT L5T 5Z1 - CA

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

Produttore:
 Hersteller/Werks/Usine production

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr. 902007335 STOCK
 Bestell
 Your order
 Commande

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

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



Conferma ordine nr. EI19001217
 Werks/Our Order/Ref. nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:
 Stempel des Werkstoffverständigen
 Inspector's stamp/Policeur de l'essayeur

MR

Avviso di Spedizione: D-VI19010091
 Lieferanweisung/Packing Instr.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 así como entregado

| TEST | Prova/Prüfung | °F | Posiz. Saggio | Snevarnamento | Sinteramento | Resistenza | Allungamento | Strizione | Resistenza | Durezza | |
|------|--|-----|---------------|---------------|--------------|------------|--------------|-----------|------------|---------|---------------------------|
| | Leg. diam. Spina Leg. diam. Ditta Weld Diam. Thickness Leg. diam. Spine | | | | | | | | | | Yield strength Rp 0,2% |
| | Valori richiesti | min | | 30 | - | 75 | - | 40 | - | 50 | 140 |
| | max | | | | | 115 | | | | | |
| A | 12,5 | 68 | L | 39 | | 81 | 64 | | 75 | | 223 |

TEST ALLO STATO DI FORNITURA

| TEST | min | max |
|----------------------------|-----|-----|
| A Grain size for ASTM E112 | | |

Mechanical properties according to ASTM A370.

Analisi chimica

| Calcola / Wert | min - | - | 1,25 | 16 50 | 2,00 | - | 10,00 | - | 0,020 | - | - | - | - | - |
|----------------|-----------|------|------|-------|------|------|-------|-------|-------|-------|-------|---|---|---|
| Schmelze/Coil | max 0,032 | 1,00 | 2,00 | 15,00 | 3,00 | 1,00 | 14,00 | - | 0,040 | 0,030 | 0,100 | - | - | - |
| | C % | Si % | Mn % | Cr % | Mo % | Cu % | Ni % | Co % | P % | S % | N % | | | |
| 279583 | 0,019 | 0,37 | 1,73 | 16,80 | 2,05 | 0,54 | 10,07 | 0,136 | 0,031 | 0,026 | 0,090 | | | |

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: 1976° F for 9 h/water.
 Micro and macro etch test: OK
 Reduction ratio = 4,3 : 1
 Material is DFARS Compliant

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

Controllo antimiscelazione: OK
 Verwechslungsprüfung: sachdienlich/richtig durchgeführt
 Antimixing testing performed: OK
 Contrôle antimélange fait: s.o.s.

Controllo visivo e dimensionale: soddisfa le esigenze
 Beschichtigung und Ausmessung: ohne Beanstandung
 Visual inspection and dimensions check: satisfactory
 Contrôle visuel et dimensionnel: satisfaisant

Vicenza, 03/04/19

VCC006 - MEST390512

(Mod. MCE2)

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

M. RIZZOTTO

Pagina - 2 di 3

P.O. # 5499 P.H. # 12-FOE65-STD Deso. 12" CPA 65 E STD 316 S1S
 IN'S

Provided by: ENCORE METALS DIVISION OF RMCI



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 Nach/According to/Selon: **EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1**
 Certificato nr. **MEST390512 / 2019 /**
 Prüfung/Exam/Examen

| | | |
|---|---|---|
| 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: 902007335 STOCK Bestell Your order Commande | Tipo di Elaborazione: E+A00 Erzeugnisart Making process Mode d'elaboration | Marchi di Fabbrica: Zeichen des Lieferanten Trade mark Signes de fabrique productrice |
| Conferma ordine nr: E119001217 Works/Our Order/Ref. nr. | Qualità: 316/316L Werkstoff/Grade/Nuance | Punzone del Collaudatore: Stempel des Werkstachverständigen Inspector's stamp/Plombon de l'essayeur |
| Avviso di Spedizione: D-VI19010091 Lieferanweisung/Packing instruction | Marca: APML Markenbezeichnung Brand / Nuance | Punzonatura: 316/316L Kennzeichnung 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 : 2015, IATF 16949 : 2016, AS 9100D

The Quality Management System is Certified acc. Pressure Equipment Directive 2014/68/EU Annex 1, chapt.4.3 by TÜEV 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.

Provided by: ENCORE METALS DIVISION OF RMCL

P.O. # 5499 Part # 12-FOEG5-STD
 Desc: 12" CPA 65E STD 316 S/S

| | | |
|---|--|-----------------|
| Vicenza, 03/04/19 VCC008 - MEST390512 (Mod. MCE2) | Il collaudatore di stabilimento / der Werkstachverständige / Works Inspector / L'agent d'usine M. RIZZOTTO | Pagina - 3 di 3 |
|---|--|-----------------|