



Acciaierie Valbruna S.p.A.

38100 VICENZA (Italia) - Via della scienza, 25 z.l.
 Telefono 0444.888211 - Fax 0444.888336
 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**

Certificato nr. **MEST883008 / 2016 /**

Nach/According to/Selon

Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
VALBRUNA STAINLESS INC.
 2400 TAYLOR STREET WEST
 46801 - FORT WAYNE, IN 46801 - US

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

Produttore:
 Hersteller/Hersteller/Usine production
ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 49426 **STOCK CHINO**
 Bestell / Your order / Commande

Tipo di Elaborazione: **E+AOD**
 Erzeugnisbezeichnung
 Milling process
 Mode d'elaboration

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



Conferma ordine nr: **E116005230**
 Weita/Our Order/Ref. nr.

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

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

MR

Avviso di Spedizione: **D-VI16014370**
 Lieferanfrage/Packing list/Ref. L.

Marca: **APML**
 Markenbezeichnung
 Brand / Nuance

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

| SPECIFICHE: | Note: |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Anforderungen / Requirements / Edigencias | Aufzeichnungen / Notes / Notes |
| VSI 0 316/316L A AISI 316/316L AMS 5648 L 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 2015 S31600/03 A (5) ASTM A193 2016 B8M CLASS1 ASTM A262 2015 PRACTICE E ASTM A276 2016 S31600/03 A ASTM A314 2016 S31600/03 ASTM A320 2015A B8M CLASS1 ASTM A370 2015 ASTM A473 2001 S31600/03 (6) ASTM A479 2016 S31600/03 A MIL-S-862 B/1 316/316L NACE MR0103 2010 S31600/03 A NACE MR0175 2009 S31600/03 A (7) QQ-S-763 F 316/316L A | (0)SECTION II P.T.A 2015 EDITION For products machined directly from bar refer to ASME SA479. (1)SECTION II P.T.A 2015 EDITION (2)SECTION II P.T.A 2015 EDITION (3)SECTION II P.T.A 2015 EDITION (4)SECTION II P.T.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, second edition 2009-10-15 Technical circular 1:2011 Published 2011-06-14 |

Tolleranza: ASTM A484-16 TABLE 3

Tolerances/Allowance/Tolerances

| Pos. nr. Pos. nr. N. de posto | Oggetto Objekt Product description Descript. du produit | Dimensioni - In Abmessungen Dimension Dimension | Lunghezza - In Länge Length Longitude | Colata Schmelze Heat Coulée | Pezzi Stückzahl Pieces Pièces | Peso - LB Gewicht Weight Poids | Lotto nr. Lager. Lot no. Lot no. |
|-------------------------------------|------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------|--------------------------------------|----------------------------------------|-----------------------------------------|-------------------------------------------|
| 0030 | Round | 15,0000 | 173/ 173 | 270419 | | 8.874 | 606808702 |



Acciaierie Valbruna S.p.A.

38100 VICENZA (Italia) - Viale della scienza, 25 z.l.
 Telefono 0444.988211 - Fax 0444.963838
 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**

Certificato nr. **MEST883008 / 2016 /**

Nach/According to/Belon

Prüfung/Test/Escal

Cliente / Besteller/Purchaser/Clien
VALBRUNA STAINLESS INC.
 2400 TAYLOR STREET WEST
 46801 - FORT WAYNE, IN 46801 - US

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

Produttore :
 Hersteller/fabrik/Usine producteur
ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 49426 **STOCK CHINO**
 Bestell
 Your order
 Commande

Tipo di Elaborazione: **E+AOD**
 Erzeugnisart
 Making process
 Mode d'elaboration

Marchi di Fabbrica:
 Zeichen des Lieferanten
 Trade marks
 Styles de fusine producteur

Conferma ordine nr: **EI16005230**
 Werkz/Our Order/Ref. nr.

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

Punzione del Collaudatore:
 Stempel des Werkzechnverordnigen
 Inspector's stamp/Pointon de l'aseyeur

Avviso di Spedizione: **D-VI16014370**
 Lieferanzeige/Packing instr.L.

Marcas: **APML**
 Markenbezeichnung
 Brand / Numero

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



MR

| 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/ Probest Specimen/Eprobest Long. diam. Spinn. Stab. Diam. Dicke Welle Diam. Thickness Leg. diam. spinn. mm | °F | Postr. Staggle Auslage Lay-out mm | Snervamento | | Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm k.s.t. | Allungamento | | Strizione | | Resilienza Kerbschlagarbeit Impact Value Resilience | Durezza Härte Hardness Dureté HB |
| | | | | Strechgrenze Yield Stress Limite élastique Rp 0,2% k.s.t. | Strechgrenze Yield Stress Limite élastique | | Bruchdehnung Ductility Allongement E 4d % | Bruchdehnung Reduction of area Striction % | RA % | | | |
| Valori richiesti | | min | | 30 | - | 75 | - | 40 | - | 50 | - | 140 |
| Anforderungen/Requisits Vorgabe dimensions | | max | | | | 115 | | | | | | 223 |
| A | 12,5 | 68 | L | 37 | | 80 | | 63 | | 76 | | 167 |

| 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 | | | | | | | | | | | | |
| Castata Schmelze/Coulee | min | max | 1,25 | 18,50 | 2,00 | 10,00 | 0,020 | 0,020 | 0,020 | 0,020 | 0,100 | |
| | 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 % | |
| 270419 | 0,016 | 0,41 | 1,74 | 16,67 | 2,04 | 0,42 | 10,00 | 0,110 | 0,032 | 0,030 | 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 6,5 h/water.
 Micro and macro etch test: OK
 Reduction ratio = 4,8 : 1
 Material is DFARS Compliant

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

Controllo antimicroscopia: OK
 Verwechslungsprüfung: spezialanalytisch durchgeführt
 Anticaking testing performed: OK
 Contrôle anticagage fait: r.s.a.

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

Vicenza, 10/06/16
 VCC008
 (Mod. MCE2)

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

M. Rizzotto

Pagina - 2 di 3



Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.
 Telefono 0444.988211 - Fax 0444.983838
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
 Telefono 0471.924111 - Fax 0471.924487

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

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

Certificato nr. **MEST883008 / 2016 /**
 Prüfng/Test/Essai

Cliente / Besteller/Purchaser/Client
VALBRUNA STAINLESS INC.
 2400 TAYLOR STREET WEST
 46801 - FORT WAYNE, IN 46801 - US

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

Produttore:
 Hersteller/Firm/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: **49426 STOCK CHINO**
 Bestel
 Your order
 Commando

Tipo di Elaborazione: **E+AOD**
 Erzeugungstyp
 Milling process
 Mode d'elaboration

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



Conferma ordine nr: **EI16005230**
 Works/Our Order/Ref. nr.

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

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

MR

Avviso di Spedizione: **D-VI16014370**
 Lieferanzeige/Packing list/B.L.

Marco: **APML**
 Markenbezeichnung
 Brand / Nuance

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

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, ISO/TS16949 : 2009, AS 9100C

The Quality Management System is Certified acc. Pressure Equipment Directive '97/23/EC' Annex 1, s., 4.3 by TÜEV and LLOYD'S
 Any act of tempering, 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, 10/06/16
 VC0008
 (Mod. MCE2)

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

M. Rizzotto

Pagina - 3 di 3