

SN# 6262

Pin



Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.
 Telefono 0444.988211 - Fax 0444.983836
 Stab.: 36100 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

Certificato nr. MEST413058 / 2019 /
 Prüfng/Teil/Casul

Cliente / Besteller/Purchaser/Client
VALBRUNA CANADA LTD
 8724 HOLGATE CRESCENT
 L5T 5Z1 - MILTON, ONT L6T 5Z1 - CA

Stato di fornitura: Hot rolled - Annealed Cold Drawn
 Lieferzustand
 Delivery state
 Etat de livraison

Produttore:
 Hersteller/Fabrikant/producer

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 902007358 Stock - Canada
 Bestell
 Your order
 Commande

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

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



Conferma ordine nr: E119001581
 Werk/D.O. Order/Ref. nr.

Qualità: 316/316L
 Werkstoff/Grade/Qualität

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

MR

Avviso di Spedizione: D-VI19014958
 Lieferfrist/Shipping list/B.L.

Marca: MVAPML (MAXIVAL)
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
 Marking
 Marquage

SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Aufzeichnungen / Notes / Notes

VSI 0 316/316L A,CF
 AISI 316/316L
 AMS 5648 M S31600 A
 AMS 5653 H S31603 A,CF
 AMS-QQ-S-763 D 316/316L (0)
 ASME SA182 2017 S31600/03 (1)
 ASME SA193 2017 B8M (2)
 ASME SA276 2017 S31600/03 A,CF (3)
 ASME SA320 2017 B8M (4)
 ASME SA479 2017 S31600/03 A (5)
 ASTM A182 2018 S31600/03 (6)
 ASTM A193 2017 B8M (7)
 ASTM A262 2015 PRACTICE E
 ASTM A276 2017 S31600/03 A,CF
 ASTM A314 2015 S31600/03
 ASTM A320 2017A B8M (8)
 ASTM A370 2017
 ASTM A473 2001 S31600/03 (9)
 ASTM A479 2018 S31600/03 A
 MIL-S-862 B/1 316/316L
 QQ-S-763 F 316/316L (A)

(0)Chemical analysis only.
 (1)Section II Part A 2017 EDITION Chemical analysis only.
 (2)Section II Part A 2017 EDITION Chemical analysis only.
 (3)Section II Part A 2017 EDITION
 (4)Section II Part A 2017 EDITION Chemical analysis only.
 (5)Section II Part A 2017 EDITION
 (6)Chemical analysis only.
 (7)Chemical analysis only.
 (8)Chemical analysis only.
 (9)Chemical analysis only.
 (A)Chemical analysis only.

Handwritten:
 P8893049
 525399
 Load # 497600

Tolleranza: ASTM A484-18A TABLE 7

Toleranz/Allowance/Tolerance

| Pos. nr. Pos. nr. No. de poz. | Oggetto Object description Design. de produs | Dimensioni - In Abmessungen Dimension | Lunghezza - In Länge Length Longueur | Colata Schmelze Pour Coulée | Pezzi Stückzahl Pieces Pièces | Peso - LB Gewicht Weight Poids | Lotto nr. Losnr. Lot No. Lot No. |
|-------------------------------------|--|---|---|--------------------------------------|--|---|---|
| 0040 | Round | 0,2500 | 146/ 146 | 278009 | | 2.456 | 827008050 |

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

1) - Spezifikationen/Mess. Toleranzen/Abw. Q-Toleranztoleranz/garant

| TEST | Provetta/ Provette Spezifikation/ Spezifikation Long. diam. Dia. Boite Diam. Dia. With diam. Thickness Long. diam. diam. mm | Temp. °F | Snervamento Snervamento Yield Stress Yield Stress Limite élastique Rp 0,2% k.s.l. | Snervamento Snervamento Yield Stress Yield Stress Limite élastique | Resistenza Resistenza Tensile strength Résistance à traction Rm k.s.l. | Allungamento Allungamento Elongation Allongement E 4d % | Strizione Strizione Reduction of area Striction RA % | Resilienza Resilienza Impact Value Res. Ence | Durezza Durezza Hardness Dureté HB |
|--|---|-------------|---|--|---|--|---|---|--|
| Valori richiesti Anforderungen/Required values Valeurs demandées | min max | | 45 | - | 90 | 30 | 40 | - | 140 255 |
| A | 6,35 | 68 | L | 97 | 116 | 34 | 64 | | 253 |

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 | | 6 |

| | | | | |
|---|--|--|--|------------------|
| Vicenza, 21/05/19 VCC008 - MEST413058 (Mod. MCE2) | Il collaudatore di stabilimento der Werkstoffverständige / Works Inspector / L'agent d'usine M.RIZZOTTO <i>M. Rizzotto</i> | Direzione Qualità Qualitätsmanagement/Quality Management/Qualität R.BERTELI <i>R. Bertelli</i> | Direzione Prodotto Produktmanagement/Product Management/Creation Product P.MESSORI <i>P. Messori</i> | Pagina 1 di 2 |
|---|--|--|--|------------------|

SIN #6262

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 Nach/According to/Ein

Certificato nr. MEST413058 / 2019 /
 Prüfung/Test/Satz

Cliente / Besteller/Purchaser/Clienz
VALBRUNA CANADA LTD
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Marchi di Fabbrica:
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 Trade marks
 Signes de l'usine productrice



Conforma ordine nr: EI19001581
 Werk/Our Order/Nr.

Qualità: 316/316L
 Werkstoff/Grade/Qualität

Punzone del Collaudatore:
 Stempel des Werkstoffschweißingen
 Inspector's stamp/Platzen de l'inspecteur

MR

Avviso di Spedizione: D-VI19014958
 Lieferanweisung/Shipping Instruk.

Marcia: MVAPML (MAXIVAL)
 Markenabkürzung
 Brand/Trade

Punzonatura: 316/316L
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Mechanical properties according to ASTM A370.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

| Grade / Steel Schmelze/Casta | min mes | 0.030 | 1.00 | 1.25 2.00 | 16.00 18.00 | 2.00 3.00 | 1.00 | 10.00 14.00 | - | 0.040 | 0.030 | 0.100 | - | - | - | - |
|---------------------------------|------------|-------|------|--------------|----------------|--------------|-------|----------------|-------|-------|-------|-------|---|---|---|---|
| | C % | Si % | Mn % | Cr % | Mo % | Cu % | Ni % | Co % | P % | S % | N % | | | | | |
| 279009 | 0,015 | 0,49 | 1,50 | 16,91 | 2,04 | 0,50 | 10,05 | 0,119 | 0,029 | 0,030 | 0,054 | | | | | |

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 = 842,3 : 1
 Annealing temperature : 1940° F for 0.5h/water.
 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 livré conforme aux exigences | Controllo antimiscelanza: OK Vermischungsprüfung: spezialanalytisch durchgeführt Addressing testing performed: OK Controllo antimiscelanza fatto: O.K. | Controllo visivo e dimensionale: soddisfa le esigenze Besichtigungs und Abmessung: ohne Beanstandung Visual inspection and dimensional checks satisfactory Contrôle visuel et dimensionnel satisfaisant |
|--|---|--|

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 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.

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, 21/05/19 VCQ008 - MEST413058 (Mod. MCE2) | Il collaudatore di stabilimento der Werkstoffschweißingen / Works Inspector / L'expert d'usine M.RIZZOTTO <i>M. Rizzotto</i> | Direzione Qualità Quality Management/Quality Management/Direction Qualité R.BERTELLI <i>R. Bertelli</i> | Direzione Prodotto Product Management/Product Management/Direction Produit P.MESSORI <i>P. Messori</i> | Pagina 2 di 2 |
|---|--|---|--|------------------|