



Acciaierie Valbruna S.p.A.

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

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

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

Certificato nr. MEST790245 / 2021 /
Prüfung/Test/Essai

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

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

Produttore:
Hersteller/Werks/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr.: 107008845 RELIANCE PROGRA
Bestell-/
Your order/
Commande

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

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



Conferma ordine nr.: EI21008690
Works/Our Order/Ref. nr.

Qualità: 316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore
Stempel des Werksassistenten/
Inspector's stamp/Pointeur de l'assistant

MR

Avviso di Spedizione: D-VI21020194
Lieferanzeige/Packing list/B.L.

Marca: APLM
Markenbezeichnung
Brand / Nuance

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 J S31603 A | |
| AMS-QQ-S-763 D 316/316L A | |
| ASME SA182 2019 S31600/03 A (0) | (0)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479. |
| ASME SA193 2019 B8M CLASS 1 (1) | (1)Section II Part A 2019 EDITION |
| ASME SA276 2019 S31600/03 A (2) | (2)Section II,Part A 2019 EDITION |
| ASME SA320 2019 B8M CLASS 1 CLASS 1 (3) | (3)Section II Part A 2019 EDITION |
| ASME SA479 2019 S31600/03 A (4) | (4)Section II Part A 2019 EDITION |
| ASTM A182 2021 S31600/03 A (5) | (5)For products machined directly from bar refer also to ASTM A479. |
| ASTM A193 2020 B8M CLASS 1 | |
| ASTM A282 PR. E 2015 316/316L | |
| ASTM A276 2017 S31600/03 A | |
| ASTM A314 2019 S31600/03 | |
| ASTM A320 2018 B8M CLASS 1 CLASS 1 | |
| ASTM A370 2020 | |
| ASTM A473 2019 S31600/03 (6) | (6)Chemical analysis only. |
| ASTM A479 2020 S31600/03 A | |
| MIL-S-862 B/1 316/316L | |
| NACE MR0103 2015 S31600/03 A (7) | (7)ANSI/NACE MR0103/ISO 17845 November 23, 2015 |
| NACE MR0175 2015 S31600/03 A (8) | (8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015 |
| QQ-S-763 F 316/316L A | |

P.O.#: P123924
R#: R170871
ITEM#: 527249
HEAT#: 285359
BRANCH#: 875

Tolleranza: ASTM A464-20B TABLE 3

Tolerance/Allowance/Tolerance

| Pos. nr. Pos. nr. Item No. Nr. de poste | Oggetto Gegenstand Product description Descript. du produit | Dimensioni - In Abmessungen Dimension Dimension | Lunghezza - In Länge Length Longitude | Colata Schmelze Heat Casting | Pezzi Stückzahl Pieces Pieces | Peso - LB Gewicht Weight Poids | Lotto nr. Lose Lot Lotter. |
|--|--|--|--|---------------------------------------|--|---|-------------------------------------|
| 0061 | Round | 15,0000 | 128/ 128 | 285359 | | 6.623 | 100714321 |

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

| | | | |
|--|---|---|------------------|
| Vicenza, 25/08/2021 VCC052 - MEST790245 | Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI | Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI | Pagina 1 di 3 |
|--|---|---|------------------|

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www.flowconditioner.com,info@cpa.cl



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Ordine nr: 107008845 RELIANCE PROGRA
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Tipo di Elaborazione: E+AOD
 Erhitzungsart
 Melting process
 Mode d'elaboration

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



Conferma ordine nr: EI21008690
 Works/Our Order/Ref. nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI21020194
 Lieferanzeige/Packing list/B.L.

Marca: APLM
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
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| TEST ALLO STATO DI FORNITURA | | | | | | | | | | |
|--|--|--|--|--|---|--|--|---|--|--|
| Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material asi como entregado | | | | | | | | | | |
| TEST | Provetta/ Probe Specimen/Epreuve Type: Wire, Disc Wire Diam. Disc Wire Diam. Thickness Lap diam. Specimen | Posiz. Saggio Position Orientation | Snervamento Stress Tens Stress Limite elastique Rp 0,2% K 5,1 | Snervamento Stress Tens Stress Limite elastique | Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm k s j | Allungamento Bruchdehnung Elongation Allongement E 4d % | Strizione Einschnürung Reduction of area Striction RA % | Resilienza Herschlagwert Impact Value Resilience | Durezza Härte Hardness Dureté HB | |
| | Valori richiesti Anforderungen/Requested values Valeurs demandées | min | 30 | - | 75 | 40 | 50 | - | 140 | |
| | max | L | 39 | - | 115 | 59 | 75 | - | 223 | |
| A | 12,5 | 68 | L | 39 | 81 | 59 | 75 | - | 69 | |

| TEST ALLO STATO DI FORNITURA | | | |
|--|--------------------------|-----|---|
| Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material asi 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 | min | 1,25 | 16,50 | 2,00 | 10,00 | 0,020 | | | | | | | |
| Schmelze/Coulee | 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 % | | |
| 285359 | 0,022 | 0,38 | 1,83 | 16,85 | 2,02 | 0,48 | 10,09 | 0,151 | 0,031 | 0,021 | 0,085 | | |

| 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 = 9,5 : 1
 Material annealed 1940°F for 7h/water cooled.
 Material is DFARS Compliant

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

Controllo antimiscelazione con tecnica XRF/OES portatile: OK
 Verwechslungsprüfung durch XRF/OES Gerät geführt.
 Antimixing testing performed with XRF/OES portable: OK
 Contrôle antimélange svr technique XRF/OES portable: OK

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

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Werks/Our Order/Refer.

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MR

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Lieferanzeige/Packing list/VB L

Marca: APML
Markenbezeichnung
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Melted, poured 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 by the portal system when it leaves the production plant.

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

AVG 83001 - MEST790245 - CERTIFICATO COLLAUDO

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

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