



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. MEST868523 / 2022 /
 Prüfung/Test/Essai

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

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

Produttore :
 Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 111009149 RELIANCE PROGRA
 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: EI21015024
 Werks/Our Order/Ref nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI22001450
 Lieferanzeige/Packing list/B.L.

Marca: APM L
 Markenbezeichnung
 Brand / Nuance

Punzonatura: 316/316L
 Kennzeichnung
 Marking
 Marquage

SPECIFICHE :

Anforderungen / Requirements / Exigences

Note:

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)
 ASME SA193 2021 B8M CLASS 1 (1)
 ASME SA276 2021 S31600/03 A (2)
 ASME SA320 2021 B8M CLASS 1 CLASS1 (3)
 ASME SA479 2021 S31600/03 A (4)
 ASTM A182 2021 S31600/03 A (5)
 ASTM A193 2020 B8M CLASS 1
 ASTM A262 PR. E 2015 316/316L (6)
 ASTM A276 2017 S31600/03 A
 ASTM A314 2019 S31600/03
 ASTM A320 2018 B8M CLASS 1 CLASS1
 ASTM A370 2021 .
 ASTM A473 2021 S31600/03 (7)
 ASTM A479 2021 S31600/03 A
 MIL-S-882 B/1 316/316L
 NACE MR0103 2015 S31600/03 A (8)
 NACE MR0175 2015 S31600/03 A (9)
 QQ-S-763 F 316/316L A

(0)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.
 (1)Section II Part A 2021 EDITION
 (2)Section II Part A 2021 EDITION
 (3)Section II Part A 2021 EDITION
 (4)Section II Part A 2021 EDITION
 (5)For products machined directly from bar refer also to ASTM A479.
 (6)Reapproved 2021
 (7)Chemical analysis only.
 (8)ANSI/NACE MR0103/ISO 17945 November 23, 2015
 (9)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

P.O.#: P123988
 R#: R172312
 ITEM#: 521534
 HEAT#: 287123
 BRANCH#: 875

Tolleranza: ASTM A484-20B TABLE 3

Tolerance/Allowance/Tolerance

| Pos. nr. Pos. nr. Item nr. N. de poste | Oggetto Gegenstand Product description Contenu. du produit | Dimensioni - In Abmessungen Dimension Dimension | Lunghezza - In Länge Length Langueur | Colata Schmelze Heat Coulée | Pezzi Stückzahl Pieces Pièces | Peso - LB Gewicht Weight Poids | Lotto nr. Ladung Lot nr. Lot nr. |
|---|---|--|---|--------------------------------------|--|---|---|
| 0040 | Round | 13,0000 | 147/ 147 | 287123 | | 5.677 | 129116300 |

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

| | | | |
|--|--|--|------------------|
| Vicenza, 18/01/2022 VCO052 - MEST868523 | Direzione Qualità Qualitätsmanagement/Quality Management/ Gestion Qualité R.BERTELLI | Direzione Prodotto Produktmanagement/Product Management/ Direction Produit P.MESSORI | Pagina 1 di 3 |
|--|--|--|------------------|

3/17/22



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

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

Certificato nr. MEST868523 / 2022 /
 Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
 VALBRUNA CANADA LTD
 8724 HOLTGATE 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: 111009149 RELIANCE PROGRA
 Bestell
 Your order
 Commande

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: EI21015024
 Werks/Our Order/Ref nr.

Qualità: 316/316L
 Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI22001450
 Lieferanzeige/Packing list/B.L.

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 Specimen/Eprouvette Larg. diam. Ø spez. Stelle Diam. Dicke Wahl Diam. Thickness Larg. diam. épais | °F | Post. Saggio Prüfung Lieuon Endkornwert | Snervamento Stressgrenze Yield Stress Limite élastique Rp 0,2% | Snervamento Stressgrenze Yield Stress Limite élastique | Resistenza Zugfestigkeit Tensile strength Résistance à traction Rm | Allungamento Bruchdehnung Elongation Allongement E 4d | Strizione Einschnürung Reduction of area Striction RA | Resilienza Kerbschlagwert Impact Value Resilience | Durezza Härte Hardness Dureté HB |
|------|--|----|--|--|---|--|---|---|--|--|
| | | | | | | | | | | |
| | Valori richiesti Anforderungen/Required values Valeurs demandées | | | | | 115 | | | | 223 |
| A | 12,5 | 68 | L | 39 | | 81 | 59 | 77 | | 166 |

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

| Colata / Heat Schmelze/Coulée | min - max | 1,25 2,00 | 16,50 18,00 | 2,00 3,00 | 10,00 14,00 | 0,020 0,040 | 0,020 0,030 | 0,100 | - | - | - | - |
|----------------------------------|--------------|--------------|----------------|--------------|----------------|----------------|----------------|-------|-------|-------|-------|---|
| | C % | Si % | Mn % | Cr % | Mo % | Cu % | Ni % | Co % | P % | S % | N % | |
| 287123 | 0,016 | 0,39 | 1,74 | 16,61 | 2,07 | 0,55 | 10,09 | 0,152 | 0,029 | 0,024 | 0,099 | |

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 = 4,7 : 1
 Material annealed 1976°F for 7 h /water cooled.
 Material is DFARS Compliant

Sono state soddisfatte tutte le condizioni richieste
 Die gestellten Anforderungen sind it. Anlage 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
 Beschligung und Ausmessung: ohne Beanstandung
 Visual inspection and dimensional checks:satisfactory
 Contrôle visuel et dimensions: satisfaisant

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

| | | | |
|--|---|---|------------------|
| Vicenza, 18/01/2022 VCC052 - MEST868523 | Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI | Direzione Prodotto Produktmanagement/Product Management/Direction Product P.MESSORI | Pagina 2 di 3 |
|--|---|---|------------------|



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

Certificato nr. MEST868523 / 2022 /
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
Lieferezustand
Delivery state
Etat de livraison

Produttore:
Hersteller/Werks/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 111009149 RELIANCE PROGRA
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 fusine productrice



Conferma ordine nr: EI21015024
Werk/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-VI22001450
Lieferanweisung/Packing list/B.L.

Marca: APLM
Markenbezeichnung
Brand / Nuance

Punzonatura: 316/316L
Kennzeichnung
Marking
Marquage

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.
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.

46758-020478807-0463102102467580

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

Vicenza, 18/01/2022

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité

R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit

P.MESSORI

Pagina
3 di 3

VCCQ052 - MEST868523