



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

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

Certificato nr. MEST026567 / 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/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 112009184 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: EI21015646
 Werks/Our Order/Ref nr.

Qualità: 316/316L
 Werks/Off/Grade/Nuance

Punzone del Collaudatore:
 Stempel des Werkssachverständigen
 Inspector's stamp/Pointon de l'assesseur



Avviso di Spedizione: D-VI22010608
 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 2021 S31600/03 A (0)	(0)Section II Part A 2021 EDITION (For products machined directly from bar refer to ASME SA479.
ASME SA193 2021 B8M CLASS 1 (1)	(1)Section II Part A 2021 EDITION
ASME SA276 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION
ASME SA320 2021 B8M CLASS 1 CLASS1 (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 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 A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
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)	(7)Chemical analysis only.
ASTM A479 2021 S31600/03 A	
MIL-S-862 B/1 316/316L	
NACE MR0103 2015 S31600/03 A (8)	(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (9)	(9)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316/316L A	

Tolleranza: ASTM A484-21 TABLE 3 4

Toleranz/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - In Abmessungen Dimension Dimension	Lunghezza - In Länge Length Longueur	Colata Abmessung Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - LB Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0030	Round	15,0000	84/ 84	288299		4.367	129519740



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MR

Avviso di Spedizione: D-VI22010608
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Marca: APML
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 Brand / Nuance

Punzonatura: 316/316L
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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

1) L=longitudinale/längs, T=transversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probe Specimen/Éprouvette Leg.diam. Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. épais mm	°F	Posiz. Saggio Position Localor Emplacement °	Snervamento Streckgrenze Yield Stress Limite élastique Rp 0,2% k.s.l.	Snervamento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm k.s.l.	Allungamento Bruchdehnung Elongation Allongement E 4d %	Strizione Einschnürung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		30	-	75 115	- 40	- 50	-	140 223
A	12,5	68	L	39		81	66	74		171

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		1

Mechanical properties according to ASTM A370.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	min - max	0,03C	1,00	1,25 2,00	16,50 18,00	2,00 3,00	1,00	10,00 14,00	0,040	0,023 0,032	0,100	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
288299	0,016	0,34	1,81	16,61	2,06	0,52	10,05	0,124	0,029	0,026	0,092				

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 = 9,6 : 1
 Material annealed 1976°F for 8,5 h /water cooled.
 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 trouvé conforme aux exigences

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

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



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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.

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.

WSPR/FA2E19122457/440001/01/12/16/04