



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
 Telefono 0444.968211 - Fax 0444.968336  
 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  
 Nach/According to/Selon

Certificato nr. MEST726504 / 2021 /  
 Prüfungs/Test/Éssa

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

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

Produttore:  
 Hersteller/Werks/Usine productrice

**ACCIAIERIE VALBRUNA S.P.A.**

Ordine nr: 102008521 REL ANCE PROGRA  
 Bestell  
 Your order  
 Commando

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

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Tracé marcs  
 Sigles de l'usine productrice



Conferma ordine nr: EI21002169  
 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-VI21010357  
 Lieferanzeige/Packing list/Id.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	
AISI 316/316L	
AMS 5648 M S31600 A	
AMS 5653 J S31603 A	
AMS-QQ-S-783 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 CLASS1 (3)	(3)Section II Part A 2019 EDITION
ASME SA479 2019 S31600/03 A (4)	(4)Section II Part A 2019 EDITION
ASTM A182 2020 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2019 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L	
ASTM A276 2017 S31600/03 A	
ASTM A314 2019 S31600/03	
ASTM A320 2018 B8M CLASS 1 CLASS1	
ASTM A370 2020 . (6)	(6)2019E1
ASTM A473 2019 S31600/03 (7)	(7)Chemical analysis only.
ASTM A479 2020 S31600/03 A	
MIL-S-862 3/1 316/316L	
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-783 F 316/316L A	

R253146  
 S09364  
 Load #5598

Tolleranza: ASTM A484-20B TABLE 3							
Toleranz/Allowance/Tolérance							
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Caption Produit description Design. du produit	Dimensioni - in Abmessungen Dimension Dimension	Lunghezza - in Länge Length Längend.	Colata Schmelze Heat Coutée	Pezzi Stücken Pieces Pièces	Pesc - LB Gewicht Weight Poids	Lotto nr. Lotnr. Lot Lainr.
0030	Round	5,0000	150/ 165	433671	2	1.779	106711210

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D			
Vicenza, 27/04/2021 VCC052 - MEST726504	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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# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
 Telefono 0444.968211 - Fax 0444.963836  
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In conformità a: EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1

Certificato nr. MEST726504 / 2021 /  
 Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Clien  
**VALBRUNA CANADA LTD**  
 8724 HOLTGATE CRESCENT  
 L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

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

Produttore:  
 Hersteller/Item/Usina productrice

**ACCIAIERIE VALBRUNA S.P.A.**

Ordine nr. 10200852 "RELIANCE PROGRA"  
 Bestell  
 Your order  
 Commande

Tipo di Elaborazione: E+AOD  
 Erweichungsart  
 Softening process  
 Mode d'elaboration

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Trade marks  
 Siglas de fabrica productrice



Conferma ordine nr. EI21002169  
 Weis/Dur Order/Ref. nr.

Qualità: 316/316L  
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:  
 Stempel des Werkstoffversuchszüger  
 Inspector's stamp/Pointon de l'asseur

MR

Avviso di Spedizione: D-VI21010357  
 Lieferanzeige/Pack. ng list/B.L.

Marca: MVAPML (MAXIVAL)  
 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'état de fourniture / Prueba sobre el material así como entregado											
TEST	Proveita / Proof test Specimen/Eprouvette Larg diam. Essai Brut Diam. Deste Werkz. Diam. Thickness Larg. diam. essai mm	°F	Poste. Soglia Auswertung Limeur Threshold	Snervamento Dienchrenge Yield Stress Limite élastique Rp 0,2% R <sub>p0,2</sub>	Snervamento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Résistance à traction R <sub>m</sub> N/mm <sup>2</sup>	Allungamento Bruchdehnung Elongation Allongement E 4d %	Strizione Einschnürung Reduction of area Striction RA %	Resilienza Kerbschlagenergie Impact Value Resilience	Durezza Härte Hardness Dureté HB	
	Valori richiesti Anforderungen/Requisits Valeurs demandées	min		30	-	75	-	40	-	50	140
		max				115					223
A	12,5	68	L	38		84	61		73		170

TEST ALLO STATO DI FORNITURA			
Test on delivery condition / Prüfung auf lieferbarem Produkt / Test a l'état 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												
Coibite / Alerte	min	-	1,25	16,60	2,00	-	10,00	-	0,010	-	-	-
Schmelze/Couille	max	0,020	1,00	16,00	3,00	1,00	14,00	-	0,010	0,010	0,100	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
433671	0,021	0,59	1,74	16,78	2,05	0,58	10,20	0,087	0,030	0,024	0,082	

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 = 19.3 : 1  
 Material solution annealed 1940°F for 2.5h/water cooled.  
 Material is DFARS Compliant

Sono state soddisfatte tutte le condizioni richieste  
 Die gestellten Anforderungen sind in 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 en 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 dimensionnel: satisfaisant

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D			
Vicenza, 27/04/2021 VCO052 - MEST726504	Direzione Qualità Qualitätsmanagement/Quality Management/Direction Qualité R. BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P. MESSORI	Pagina 2 di 3



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8724 HOLGATE CRESCENT  
L5T 5Z1 - MILTON, ONT L5T 5Z1 - CA

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

Produttore:  
Hersteller/Item/Uaine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 102008521 RELIANCE PROGRA  
Bestell  
Your order  
Commando

Tipo di Elaborazione: E+AOD  
Erzschmelzungsart  
Melting process  
Mode d'elaboration

Marchi di Fabbrica:  
Zeichen des Uferwerkes  
Trade marks  
Siglas de fusine productrice



Conferma ordine nr: EI21002169  
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-VI21010357  
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Marca: M VAPML ( MAXIVAL )  
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.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D			
Vicenza, 27/04/2021 VCQ032 - MEST726504	Direzione Qualità Quality Management/Quality Management/ Gestion Qualité R.BERTELLI	Direzione Prodotto Product Management/Product Management/ Direction Produit P.MESSORI	Pagina 3 di 3