



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.  
 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**  
 Nach/According to/Selon

Certificato nr. **MEST037550 / 2023 /**  
 Prüfung/Test/Essai

<b>Cliente / Besteller/Purchaser/Client</b>	<b>Stato di fornitura :</b> Hot rolled Descaled Annealed Hot rolled Lieferzustand Delivery state Etat de livraison	<b>Produttore :</b> Hersteller/Item/Usine productrice
<b>Ordine nr: 81531 LAWRENCEVILLE</b> Bestell Your order Commande	<b>Tipo di Elaborazione: E+AOD</b> Erschmelzungsart Melting process Mode d'elaboration	<b>Marchi di Fabbrica:</b> Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice
<b>Conferma ordine nr: EI23001099</b> Werk/Our Order/Ref nr.	<b>Qualità:</b> 316/316L Werkstoff/Grade/Nuance	<b>Punzone del Collaudatore:</b> Stempel des Werksechverständigen Inspector's stamp/Poligon de l'essayeur
<b>Avviso di Spedizione: D-VI23007023</b> Lieferanzeige/Packing list/B.L.	<b>Marca:</b> APLM Markenbezeichnung Brand / Nuance	<b>Punzonatura: 316/316L</b> Kennzeichnung Marking Marquage
		<b>ACCIAIERIE VALBRUNA S.P.A.</b> <b>MR</b>

<b>SPECIFICHE :</b> Anforderungen / Requirements / Exigences	<b>Note:</b> Aufzeichnungen / Notes / Notes
VSI 0/1 316/316L 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) ASME SA193 2021 B8M CLASS 1 (1) ASME SA276 2021 S31600/03 A (2) ASME SA320 2021 B8M CLASS 1 (3) ASME SA479 2021 S31600/03 A (4) ASTM A182 2022A S31600/03 A (5) ASTM A193 2022 B8M CLASS 1 ASTM A262 PR. E 2015 316/316L (6) ASTM A276 2017 S31600/03 A ASTM A314 2019 S31600/03 ASTM A320 2022 B8M CLASS 1 CLASS1 ASTM A370 2022 . ASTM A473 2021 S31600/03 (7) ASTM A479 2021 S31600/03 A MIL-S-862 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 2021 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

Tolleranza: ASTM A484-22 TABLE 13

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descr. du produit	Tolleranz/Allowance/Tolerance		Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losn. Lot nr. Lot nr.
		Dimensioni - In Abmessungen Dimension Dimension						
0010	Angle Shape	4,0000 x	4,0000 x	0,2500	240/ 248	288735	2.286	212909290

### TEST ALLO STATO DI FORNITURA

TEST	min	max
A Grain size for ASTM E112		5

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

<b>Vicenza, 15/03/2023</b> VCQ052 - MEST037550	<b>Direzione Qualità</b> Qualitätsmanagement/Quality Management/Gestion Qualité <b>R.BERTELLI</b>	<b>Direzione Prodotto</b> Produktmanagement/Product Management/Direction Produit <b>P.MESSORI</b>	<b>Pagina</b> 1 di 3
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Stato di fornitura: **Hot rolled Descaled Annealed Hot rolled**  
 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore:  
 Hersteller/Item/Usine productrice

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

Ordine nr: **81531 LAWRENCEVILLE**

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

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



Bestell  
 Your order  
 Commande

Qualità: **316/316L**  
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:  
 Stempel des Werksachverständigen  
 Inspecteur's stamp/Poinçon de l'essayeur

**MR**

Conferma ordine nr: **EI23001099**

Werk/Our Order/Ref nr.

Avviso di Spedizione: **D-VI23007023**

Lieferanzeige/Packing list/E.L.

Marca: **APML**  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: **316/316L**

Kennzeichnung  
 Marking  
 Marquage

### Test on delivery condition per ASTM A370

TEST	Provetta/ Specimen/Éprouvette Larg.diam Spes. Brette Diam. Dicke Width Diam. Thickness Larg. diam. épais mm.	°F	Posiz. Saggio Probating Location Emploiment 1)	Sneramento	Sneramento	Resistenza	Alungamento	Strizione	Resilienza	Durezza
				Streckgrenze Yield Stress Limite élastique Rp 0,2% k.s.l.	Streckgrenze Yield Stress Limite élastique	Zugfestigkeit Tensile strength Résistance à traction Rm k.s.l.	Bruchdehnung Elongation Allongement E 4d %	Einziehung Reduction of area Striction RA %	Kerbschlagarbeit Impact Value Resilience	Hardness Dureté HB
Valori richiesti		min max		30	-	75 115	- 40	- 50	-	140 235
Anforderungen/Required values Valeurs demandées				41		85	57	68		170
<b>B</b>	<b>20X6</b>	<b>68</b>	<b>L</b>							

Mechanical properties according to ASTM A370.

### Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique												
Colata /Heat Schmelze/Coulée	min - max	0,030	1,00	1,25 2,00	16,50 18,00	2,00 3,00	1,00	10,00 14,00	0,020 0,030	0,100	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	
288735	0,013	0,47	1,38	17,01	2,01	0,71	10,00	0,120	0,027	0,026	0,075	

### 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	<b>SATISFACTORY</b>

Produced without class I-II Ozone depleting substances.  
 Solution heat treated free from continuous carbide network.  
 Micro and macro etch test: OK.  
 Reduction ratio = 16,3 : 1  
 Material annealed 1922°F for 100'(total time)/water cooled.  
 Material is DFARS Compliant

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

Controllo antimiscelanza con tecnica XRF/OES portatile : OK  
 Verwechslungsprüfung: durch XRF/OES Gerät geführt : OK  
 Antimixing testing performed with XRF/OES portable : OK  
 Contrôle antimélange sv 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

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.

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

<b>Vicenza, 15/03/2023</b> VCQ052 - MEST037550	<b>Direzione Qualità</b> Qualitätsmanagement/Quality Management/Gestion Qualité <b>R.BERTELLI</b>	<b>Direzione Prodotto</b> Produktmanagement/Product Management/Direction Produit <b>P.MESSORI</b>	<b>Pagina</b> 2 di 3
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 Bestel Your order Commande

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

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



**Conferma ordine nr: EI23001099**  
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**MR**

**Avviso di Spedizione: D-VI23007023**  
 Lieferanzeige/Packing list/B.L.

**Marca: APML**  
 Markenbezeichnung Brand / Nuance

**Punzonatura: 316/316L**  
 Kennzeichnung Marking Marquage

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1, chapt.4.3 by TÜV and LLOYD'S  
 The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlited.  
 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.

WS PERS04A011249070900071123405708A

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

**Vicenza, 15/03/2023**  
 VQC052 - MEST037550

**Direzione Qualità**  
 Qualitätsmanagement/Quality Management/Gestion Qualité  
**R.BERTELLI**

**Direzione Prodotto**  
 Produktmanagement/Product Management/Direction Produit  
**P.MESSORI**

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