



Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 s.l.
 Telefono: 0444.868211 - Fax: 0444.868339
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
 Telefono 0471.824111 - Fax: 0471.824497

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

In conformità a: **EN 10204 (2004) , 3.1**
 Nachfolgendes ist

Certificato nr. **MEST930976 / 2016 /**
 Prüfung/Prüfung

Cliente / Besteller/Purchaser/Clien
VALBRUNA STAINLESS INC.
 2400 TAYLOR STREET WEST
 48801 - FORT WAYNE, IN 46801 - US

Stato di fornitura: **Forged - Annealed FORGED**
 Lieferzustand
 Delivery state
 État de livraison

Produttore:
 Hersteller/Hersteller
ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: **50806 STOCK HOUSTON**
 Bestell-
 Your order
 Commande

Tipo di Elaborazione: **E+AOD**
 Erzeugnisart
 Manufacturing process
 Mode d'élaboration

Marchi di Fabbrica:
 Zeichen der Lieferwerkstatt
 Trade marks
 Signes de l'usine productrice



Conferma ordine nr: **EI16009423**
 Werk/Der Order/Ref. nr.

Quantità: **316/316L**
 Menge/Größe/Menge

Funzione del Collaudatore:
 Stempel des Werkstattdienstleistungs-
 Inspektor's stamp/Inspection de l'essayeur

MR

Avviso di Spedizione: **D-VI16023536**
 Lieferanweisung/Befehl Nr.

Merce: **APML**
 Markenbezeichnung
 Brand / Marque

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

SPECIFICHE:

Anforderungen / Requirements / Exigences

Note:

Aufzeichnungen / Males / Notes

VSI 0 316/316L A
 AISI 316/316L
 AMS 5648 L S31600 A
 AMS 5653 H S31603 A
 AMS-QQ-S-763 D-316/316L A
 ASME SA182 2015 S31600/03 A (0)
 ASME SA188 2016 B8M CLASS1 (1)
 ASME SA276 2015 S31600/03 A (2)
 ASME SA320 2016 B8M CLASS1 (3)
 ASME SA478 2016 S31600/03 A (4)
 ASTM A182 2016 S31600/03 A (5)
 ASTM A183 2016 B8M CLASS1
 ASTM A262 2016 PRACTICE E
 ASTM A276 2016 S31600/03 A
 ASTM A314 2016 S31600/03
 ASTM A320 2015A B8M CLASS1
 ASTM A370 2015
 ASTM A473 2001 S31600/03 (6)
 ASTM A478 2016 S31600/03 A
 MIL-S-882 B/1 316/316L
 NACE MR0103 2010 S31600/03 A
 NACE MR0175 2009 S31600/03 A (7)
 QQ-S-763 F 316/316L A

(0)SECTION II PTA 2015 EDITION For products machined directly from bar refer to ASME SA478.

(1)SECTION II PTA 2015 EDITION

(2)SECTION II PTA 2015 EDITION

(3)SECTION II PTA 2015 EDITION

(4)SECTION II PTA 2015 EDITION

(5)For products machined directly from bar refer also to ASTM A478.

(6)Chemical analysis only.

(7)ANSI/NACE MR0175/ISO 15156-3; second edition 2009-10-15 Technical circular 1:2011 Published 2011-05-14

Tolleranza: ASTM A484-16 TABLE 3

Tolerance/Toleranz

Pos. nr. Pos. Nr. No. of items	Oggetto Description Produkt Beschreibung Design. de produit	Dimensioni - In Nominale Dimension Dimension	Lunghezza - In Länge Length Longueur	Colata Schmelze Heat Casta	Pezzi Stückzahl Pieces Pièces	Peso - LB Gewicht Weight Poids	Lotto nr. Losn. Lot nr. Lot n.
0070	Round	13,0000	145/ 145	270972		11.206	610911240

Vicenza, 27/09/16

VCO008 - MEST930976

(Mod. M3E2) www.valbruna.com

Il collaudatore di stabilimento / der Werkstattdienstleistungs- / Works Inspector / L'agent d'usine

M. Rizzotto

Pagina - 1 di 3

From: TK Materials CA, Ltd.

Cust. ATLANTIS INDUSTRIES

CstAr

Wgt.: 709 LB

Del.: 2405026504

CstOr Bozo

Date 02/06/2017

Tomas Sanchez

From: TK Materials CA, Ltd.
 Cust. ATLANTIS INDUSTRIES
 Del.: 2405026504
 Cstor Bozo
 Wgt.: 709 LB

Date 02/06/2017

Thomas J. ...

* = not order to

Date 11.15.10

Approved By *[Signature]*

UNSS S31603 Customer Specs		55RD 01751	
P.O. #/Line # 5400328711		Heat#/Heat Lot # 2870972	
I/Messner/Krupp Oil & Gas		CBS 316L NACE Rev 2	
Checklist			
Part #			
Chemistry			
Elements		Min	Max
Carbon	C	0.000	0.030
Manganese	Mn	0.000	2.000
Phosphorous	P	0.000	0.040
Sulfur	S	0.000	0.030
Silicon	Si	0.000	1.000
Nickel	Ni	10.000	14.000
Chromium	Cr	16.000	18.000
Molybdenum	Mo	2.000	3.000
Mechanical Property Capability			
		Min	Max
Yield 2 % Offset	30 (207 Mpa)	38	✓
Tensile Strength	75 (517 Mpa)	80	✓
Elongation in 4D%	40	62	✓
Red of Area	50	74	✓
Hardness	22 (235 BHN)	160	✓
NACE			
Statement on MTR			
Melt Practice			
Statement on MTR			
Grain Size	ASTM # 5 or finer	3	✓
NDE	ASTM A388		
Hot Working Red.	5:1 for bars <4" 4:1 for bars 4" & above		
No Weld Repair	Statement on MTR		✓
EN 10204, Type 3.1B	Statement on MTR		✓
Mercury	Statement on MTR		✓
Heat Treatment	Metal		
	Method of		
AMS2750	Temperature		✓
	Cooling		
Solution Anneal	1900°F +/- 250 F		
	Liquid		
	(1040°C +/-14D C)		



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 Telefono 0471.924111 - Fax 0471.924487

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

In conformità a: **EN-10204 (2004), 3.1**
 Nachzeichnung / Nachzeichnung

Certificato nr. **MEST930976 / 2016 /**
 Prüfung/Test/essai

Clienti / Besteller/Purchaser/Client
VALBRUNA STAINLESS-INC.
 2400 TAYLOR STREET WEST
 46801 - FORT WAYNE, IN 46801 - US

Stato di fornitura: **Forged - Annealed FORGED**
 Lieferzustand
 Delivery state
 État de livraison

Produttore:
 Hersteller/Hersteller/producer
ACCIAIERIE VALBRUNA S.P.A.

Ordine nr. **50806 STOCK HOUSTON**
 Bestell
 Your order
 Commande

Tipo di Elaborazione: **E+AAD**
 Erzeugnisart
 Melting process
 Mode de fabrication

Marchi di Fabbrica:
 Zeichen des Herstellerwerks
 Trade mark
 Signes de notre producteur



Conferma ordine nr. **E116009423**
 Werk/Dur./Order Ref. nr.

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

Punzione del Collaudatore:
 Stempel des Werksachverständigen/
 Inspektor's stamp/Personne de l'assurance

MR

Avviso di Spedizione: **D-VI16023536**
 Lieferzustand/Packing VEBL

Marcu: **APML**
 Markenbezeichnung
 Brand/Numéro

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/ Provenza Hersteller/Hersteller Long Short Form Order/Order, Order Mark/Mark, TradeMark Logo/Logo, eptk Logo/Logo	°F	Profil. Doppio Numero/ Länge/ Diameter, Ø	Snervamento: Zugspannung Yield Stress Limit/Strain Rp 0,2%	Snervamento: Zugspannung Tens. Stress Limit/Strain Rp 0,2%	Resistenza Zugspannung Tens. strength Resistance/Strain Rm	Allungamento Zugdehnung Elongation Allongement		Strizione Zugdehnung Reduction of area Striction		Resistenza Korrosions test/Value Resistance	Durezza Härte test/Value Dureté HB
							%	%	%	%		
Valori richiesti		min max		30	-	75 115	-	40	-	50	-	140 223
A	12,5	68 L		38		80		62		74		166

TEST ALLO STATO DI FORNITURA

TEST	min	max
A Grain size for ASTM E112		
Mechanical properties according to ASTM A370.		

Analisi chimica

Cotola Schmelze/Coque	Metal met	min 0,030	1,00	1,25 2,00	16,00 18,00	2,00 3,00	1,00	10,00 14,00	0,040	0,020 0,030	0,100	-	-	-	-
270972	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	-	-	-	-
	0,017	0,65	1,63	16,93	2,05	0,38	10,04	0,138	0,031	0,022	0,067				

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.
 Annealing temperature: 1940°F for 6 h/water.
 Micro and macro etch test: OK
 Reduction ratio = 4,7 : 1
 Material is DFARS Compliant

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

Controllo anti-miscelazione: OK
 Verwechslungsprüfung: erfolgreich durchgeführt
 Antimixing testing performed: OK
 Controlo miscelazione fatto: r.a.s.

Controllo visivo e dimensionale: soddisfatta le esigenze
 Beschäftigung und Ausmessung: ohne Beanstandung
 Visual inspection and dimensional check: satisfactory
 Contrôle visuel et dimensionnel: satisfaisant

Vicenza, 27/09/16

VCC005 - MEST930976

(Mod. MCS2)

Il collaudatore di stabilimento / der Werksachverständige / Works Inspector / L'agent d'usine

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