



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

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

Certificato nr. **MEST179290 / 2018 /**
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
VALBRUNA U.K. LTD.
OLDBURY ROAD
B70 9BH - WEST BROMWICH B70 9BH GB -
GB

Stato di fornitura : **Hot rolled - Annealed COLD PROCESSED**
Lieferzustand
Delivery state
Etat de livraison

Produttore :
Hersteller/Item/Usine productrice

Ordine nr: **705052028 Sheffield**
Bestell
Your order
Commande

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

ACCIAIERIE VALBRUNA S.P.A.

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



Conferma ordine nr: **E117005633**
Werks/Our Order/Ref nr.

Qualità: **1.4401/1.4404/316/316L**
Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: **D-VI18000358**
Lieferanzeige/Packing list/B.L.

Marca: **MVAPML MAXIVAL**
Markenbezeichnung
Brand / Nuance

Punzonatura: **1.4401/4/316/L**
Kennzeichnung
Marking
Marquage

SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Aufzeichnungen / Notes / Notes

VAL STOCK 2010 1.4404/316L A,CF

AISI 316

AISI 316L

AMS 5648 M S31600 A

AMS 5653 H S31603 A,CF

ASME SA182 2015 S31600 A (0)

ASME SA182 2015 S31603 A (1)

ASME SA276 2015 S31600 A,CF (2)

ASME SA276 2015 S31603 A,CF (3)

ASME SA479 2015 S31600 A (4)

ASME SA479 2015 S31603 A (5)

ASTM A182 2016 S31600 A (6)

ASTM A182 2016 S31603 (7)

ASTM A262 2015 PRACTICE E

ASTM A276 2017 S31600 A,CF

ASTM A276 2017 S31603 A,CF

ASTM A314 2015 S31600

ASTM A314 2015 S31603

ASTM A370 2017

ASTM A479 2017 S31600 A

ASTM A479 2017 S31603 A

EN 10088-3 2014 1.4401 A,CF

EN 10088-3 2014 1.4404 A,CF

EN 10272 2007 1.4401 A,CF

EN 10272 2007 1.4404 A,CF

ISO 6892-1 2009

NACE MR0103 2015 S31600 A (8)

NACE MR0103 2015 S31603 A (9)

NACE MR0175 2015 S31600 A (A)

NACE MR0175 2015 S31603 A (B)

QQ-S-763 F 316 A,CF

QQ-S-763 F 316L A,CF

(0)SEC.II PT.A 2015 EDITION For products machined directly from bar refer to ASME SA479.

(1)SECTION II PT.A 2015 EDITION For products machined directly from bar refer to ASME SA479.

(2)SEC.II PT.A 2015 EDITION

(3)SECTION II PT.A 2015 EDITION

(4)SECTION II PT.A 2015 EDITION

(5)SECTION II PT.A 2015 EDITION

(6)For products machined directly from bar refer also to ASTM A479.

(7)For products machined directly from bar refer also to ASTM A479.

FLOW TECHNOLOGY LTD

TEST CERTIFICATE

VERIFIED TRUE

COPY OF ORIGINAL

Tolleranza: h11 - DIN668/EN10278

Tolleranza/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0010	Hexagon	31,750	3060/ 3060	429779		1158,0	713510320

Vicenza, 05/01/18

VQ0012 - MEST179290

(Mod. MCE2) WSPFD48F4C5681402938C2186CF8CD907

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

M.RIZZOTTO

Pagina - 1 di 3



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

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

Certificato nr. MEST179290 / 2018 /
 Prüfung/Test/Essai

Ciente / Besteller/Purchaser/Client
VALBRUNA U.K. LTD.
 OLDBURY ROAD
 B70 9BH - WEST BROMWICH B70 9BH GB -
 GB

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

Produttore: Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 705052028 Sheffield
 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: EI17005633
 Werks/Our Order/Ref nr.

Qualità: 1.4401/1.4404/316/316L
 Werkstoff/Grade/Nuance

Punzone del Collaudatore: Stempel des Werkssachverständigen
 Inspector's stamp/Poinçon de l'essayeur

MR

Avviso di Spedizione: D-VI18000358
 Lieferanzeiger/Packing list/V.L.

Marca: MVAPML MAXIVAL
 Markenbezeichnung: Brand / Nuance

Punzonatura: 1.4401/4/316/L
 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 asi como entregado

TEST	Provetta/ Probostab Specimen/Eprouvette Larg. diam. Spess. Breite Diam. Dicke Witt Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Procentage Location Embowment 1)	1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential		Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement		Strizione Einachnührung Reduction of area Striction		Resilienza Kerbschlagarbeit Impact Value Resilience KV J			Durezza Haerte Hardness Durete HB	
				Sneramento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Sneramento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2		A5 %	E 4d %	Z %	RA %					
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		207	235	517	20	30	-	50	100			140 235	
A	10	20	L	538	481	689	37	40	68	68	178	180	185	229	

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		5

Mechanical properties according to ASTM A370.

Tensile testing according to EN ISO 6892-1

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	min - max	1,25 2,00	16,50 18,00	2,00 2,50	1,00	10,00 13,00	0,040	0,030	0,100					
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	P %	S %	N %				
429779	0,017	0,52	1,49	17,00	2,03	0,46	10,11	0,026	0,030	0,061				

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

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

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	Sensitized T1	20	boil	90	5	Absence of cracks	SATISFACTORY

Reduction ratio = 37,5 : 1
 Material solution annealed 1080° C for 1h/water cooled.

Vicenza, 05/01/18

VCCQ012 - MEST179290

(Mod. MCE2) WSPFD48BF4C5881404298C2184CF82D907

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M. RIZZOTTO

Pagina - 2 di 3



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

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

Certificato nr. MEST179290 / 2018 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
VALBRUNA U.K. LTD.
OLDBURY ROAD
B70 9BH - WEST BROMWICH B70 9BH GB -
GB

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

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Ordine nr: 705052028 Sheffield
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: EI17005633
Werks/Our Order/Ref nr.

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

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

MR

Avviso di Spedizione: D-VI18000358
Lieferanzeige/Packing list/B.L.

Marca: MVAPML MAXIVAL
Markenbezeichnung
Brand / Nuance

Punzonatura: 1.4401/4/316/L
Kennzeichnung
Marking
Marquage

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 materiel à été trouvé conforme aux exigences

Controllo antimescolanza: OK
Verwechslungsprüfung: spectralanalytisch durchgeführt
Antimixing testing performed: OK
Contrôle antimeslange fait: r.a.s.

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

Melted 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 through Portal System when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2008, IATF 16949 : 2016, AS 9100C

The Quality Management System is Certified acc. Pressure Equipment Directive ("97/23/EC") Annex 1,s.,4.3 and 2014/68/EU by TUEV 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.

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.

Vicenza, 05/01/18

VCQ012 - MEST179290

(Mod. MCE2) WSPFD48MFC56814042936C218MCFR2D007

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M. RIZZOTTO

Pagina - 3 di 3