

## DIMENSIONAL TEST REPORT

Report N.	<b>QUA-031-001/2024</b>
Technical Job:	<b>24/2385</b>
Customer:	<b>DELTA GmbH</b>
Order N.	<b>DELTA-TECNHNICAL-2024-PO-200</b>

SERIAL No.	TAG No.	CODE	DWG No.	NOMINAL QUOTE (mm)	DETECTED QUOTE (mm)	RESULT
294898	PSV-RU0001A-03	3A0-E23-BW	24/2385_DWG_1	A – 105 (±1,6)	105,52	POSITIVE
				B – 115 (±1,6)	115,71	POSITIVE
				C – 380 (max)	362,41	POSITIVE
				D – 37,5 (±3)	36,68	POSITIVE
294899	PSV-RU0001B-03	3A0-E23-BW	24/2385_DWG_1	A – 105 (±1,6)	105,18	POSITIVE
				B – 115 (±1,6)	115,72	POSITIVE
				C – 380 (max)	362,35	POSITIVE
				D – 37,5 (±3)	37,45	POSITIVE
294900	PSV-RU0001A-02	3A0-FA3-BW	24/2385_DWG_2	A – 124 (±1,6)	124,26	POSITIVE
				B – 152 (±1,6)	152,92	POSITIVE
				C – 435 (max)	413,33	POSITIVE
				D – 40 (±3)	42,07	POSITIVE
294901	PSV-RU0001B-02	3A0-FA3-BW	24/2385_DWG_2	A – 124 (±1,6)	124,21	POSITIVE
				B – 152 (±1,6)	152,77	POSITIVE
				C – 435 (max)	413,35	POSITIVE
				D – 40 (±3)	40,21	POSITIVE

Date of inspection:	2024.12.20
Measuring Instrument:	C01-008-01
Expiration date:	2027.02.13

 <p style="text-align: center;"><b>Quality Assurance</b> Elena Adornato</p> <p>Date Stamp and signature <i>Elena Adornato</i> 2024 DIC 20</p>	<p style="text-align: center;"><b>CUSTOMER</b></p> <p>Date Stamp and signature</p>	<p style="text-align: center;"><b>INSPECTOR</b></p> <p>Date Stamp and signature</p>
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Annex 1 -



S.N. 294898 - QUOTE A



S.N. 294898 - QUOTE B



S.N. 294898 - QUOTE C



S.N. 294898 - QUOTE D

Annex 2 -



S.N. 294899 - QUOTE A



S.N. 294899 - QUOTE B



S.N. 294899 - QUOTE C



S.N. 294899 - QUOTE D

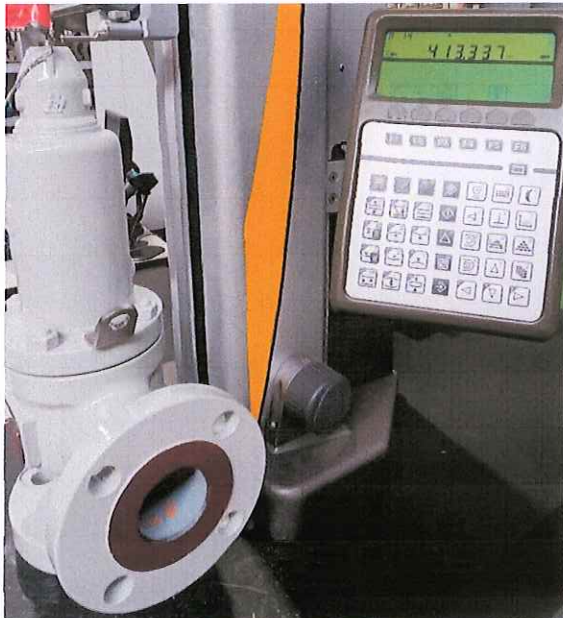
Annex 3 -



S.N. 294900 - QUOTE A



S.N. 294900 - QUOTE B



S.N. 294900 - QUOTE C

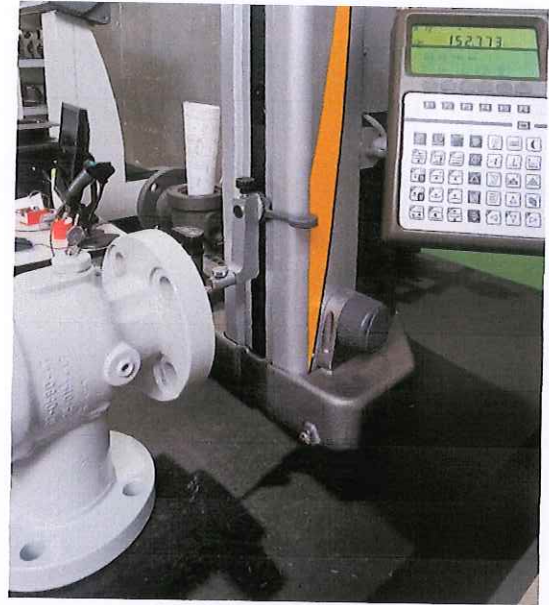


S.N. 294900 - QUOTE D

Annex 4 -



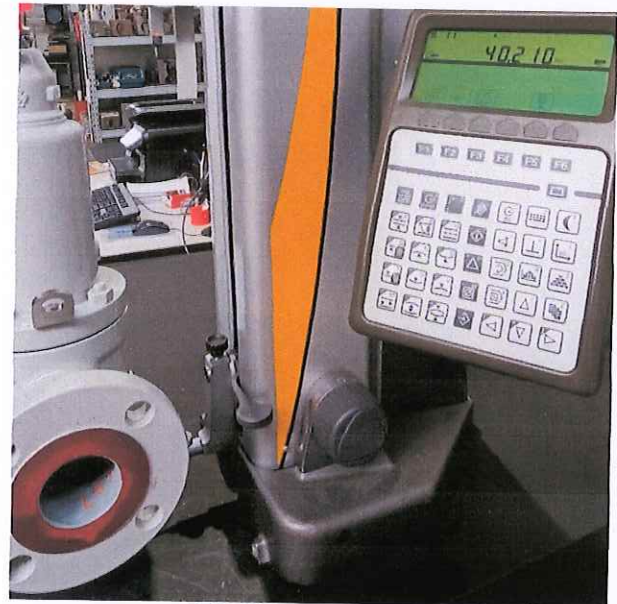
S.N. 294901 - QUOTE A



S.N. 294901 - QUOTE B



S.N. 294901 - QUOTE C



S.N. 294901 - QUOTE D



CERTIFICATO DI TARATURA LAT 181 24-0004E020  
Certificate of Calibration

- Data di emissione 2024-02-14  
date of issue  
- Cliente TECHNICAL s.r.l.  
customer via Toscana, 9  
20060 VIGNATE ( MI )  
- Destinatario TECHNICAL s.r.l.  
receiver via Toscana, 9  
20060 VIGNATE ( MI )

Il presente certificato di taratura è emesso in base all'accreditamento LAT N° 181 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali e internazionali delle unità di misura del Sistema Internazionale delle Unità (SI). Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a Referring to  
- oggetto Allimetro digitale  
item  
- costruttore Tesa  
manufacturer  
- modello 0076220  
model  
- matricola 1R 021 V2.24 ( C00-008-01 )  
serial number  
- data di ricevimento oggetto 2024-02-13  
date of receipt of item  
- data delle misure 2024-02-13  
date of measurements  
- registro di laboratorio 2024  
laboratory reference

This certificate of calibration is issued in compliance with the accreditation LAT N° 181 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, the metrological competence of the Centre and the traceability of calibration results to the national and international standards of the International System of Units (SI). This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.  
The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura  $k$  corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore  $k$  vale 2.  
The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor  $k$  corresponding to a confidence level of about 95%. Normally, this factor  $k$  is 2.



Direzione Tecnica  
(Approving Officer)  
Ivo Gazziero

Firma digitale - Digital signature



CERTIFICATO DI TARATURA LAT 181 24-0004E020  
Certificate of Calibration

Di seguito vengono riportate le seguenti informazioni:  
In the following, information is reported about:

- la descrizione dell'oggetto in taratura (se necessaria);  
description of the item to be calibrated (if necessary)

**Altmetro digitale**

- l'identificazione delle procedure in base alle quali sono state eseguite le tarature;  
technical procedures used for calibration performed

**PTA-02 rev.2**

- I campioni che garantiscono la catena della riferibilità del Centro;  
instruments or measurement standards which guarantee the traceability chain of the Centre

- BPP011 Set Blocchetti piano paralleli
- BPP012 Set Blocchetti piano paralleli
- BPP040 Set Blocchetti piano paralleli
- BPP029 Set Blocchetti piano paralleli
- PDR001 Piano di riscontro
- TRG007 Misuratore di temperatura

- Gli estremi dei certificati di taratura di tali campioni e l'Ente che li ha emessi;  
relevant calibration certificates of those standards with the issuing Body

- LAT181 23-3287P06B0
- LAT181 23-3284P06B0
- LAT181 23-3299P06B0
- LAT 107 230207MAH
- LAT172 PR0024/20
- LAT198 0639/23 0640/23

Data di taratura;  
Calibration date

- 2023-12-05
- 2023-12-05
- 2023-12-06
- 2023-12-12
- 2020-08-21
- 2023-05-05

- le condizioni ambientali e di taratura;  
calibration and environmental conditions

- Luogo di taratura;  
Calibration Place

**TECHNICAL s.r.l.**  
via Toscana, 9  
20060 VIGNATE ( MI )

Temperatura ( 20 ± 5 ) °C  
Temperature

Umidità relativa < 80% U.R.  
Relative Humidity

- Normative di riferimento  
Standards

Norma - Standard code	Anno - Year
(BIPM) The International System of Units (SI)	ed.9 2019
UNI EN ISO 1	2022
UNI 9052	1987
UNI EN ISO 13225	2012
UNI EN ISO 14253-1	2018

Valutazione di conformità : Non richiesta  
Conformity assessment : Not required

**MODALITA' DI TARATURA**  
Calibration method

1 - La taratura viene eseguita per interposizione dei campioni di riferimento e loro composizione tra la superficie del piano di riscontro e il tatore del misurando rilevandone la misura sul dispositivo di lettura. Se il misurando è dotato di dispositivo di azzeramento lo strumento viene azzerato posizionando il tastatore sul piano di appoggio.

The calibration is performed by interposing the reference samples and their composition between the support plan and contact surfaces of the instruments by detecting the measurement on the reading device. If the measurand is equipped with a zeroing device, the instrument is zeroed by positioning the probe on the support.

2 - I coefficienti di dilatazione termica lineare non sono misurati pertanto sono considerati pari a:

Campioni ( 10,05 ± 2 ) · 10<sup>-6</sup> °C<sup>-1</sup>  
misurando ( 11,5 ± 2 ) · 10<sup>-6</sup> °C<sup>-1</sup>

The linear thermal expansion coefficients are not measured therefore they have been considered equal to:

Samples (10,05 ± 2) · 10<sup>-6</sup> °C<sup>-1</sup>  
measurand (11,5 ± 2) · 10<sup>-6</sup> °C<sup>-1</sup>

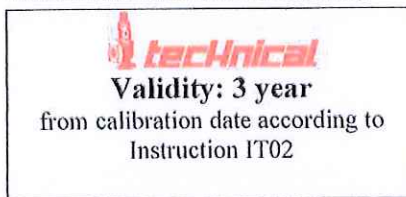
3 - La differenza massima di temperatura tra campione e misurando è di:

1 °C nell'intervallo indicato.

The maximum difference of temperature between standard and measurand is:  
1 °C with in the indicated interval.

4 - Riepilogo dei risultati vedi pag. 4  
Summary of results see pag. 4





CERTIFICATO DI TARATURA LAT 181 24-0004E020  
Certificate of Calibration

Descrizione : Altimetro digitale

Description

Codice : C00-008-01

Code

Matricola : 1R 021 V2.24

Serial number

Campo : 0 - 600 mm

Range

Divisione di scala : 0,001 mm

Scale Interval

Errore di indicazione Length measurement error			
Lunghezza di riferimento Reference length $L_n$ / mm	Misura Measure $L_x$ / mm	Errore Deviation $E = L_x - L_n$ / $\mu\text{m}$	Incertezza estesa Expanded Uncertainty $U (k=2)$ / $\mu\text{m}$
0,000	0,000	0	1
1,100	1,100	0	1
1,500	1,501	1	1
1,900	1,901	1	1
10,300	10,300	0	1
25,000	25,000	0	1
75,000	74,999	-1	2
100,000	100,000	0	3
200,000	199,999	-1	5
400,000	399,999	-1	9
600,000	600,003	3	13

Errore di forma del tastatore piatto Flat shape Error				
Lunghezza campione Master length $L_n$ / mm	Misura 1 Measure 1 $M_1$ / mm	Misura 2 Measure 2 $M_2$ / mm	Errore Deviation $\Delta I_f =  M_2 - M_1 $ / $\mu\text{m}$	Incertezza estesa Expanded Uncertainty $U (k=2)$ / $\mu\text{m}$
25,000	/	/	/	/

Errore di misura bidirezionale Bidirectional measurement error			
Lunghezza campione Master length $L_n$ / mm	Misura Measure to $M$ / mm	Errore Massimo Max Deviation $B = M - L_n$ / $\mu\text{m}$	Incertezza estesa Expanded Uncertainty $U (k=2)$ / $\mu\text{m}$
25,000	25,000	0	1
75,000	74,999	-1	2

Ripetibilità scala principale Repeatability main scale						
Lunghezza del campione Master length $L_n$ / mm	Misura 1 Measure 1 $M_1$ / mm	Misura 2 Measure 2 $M_2$ / mm	Misura 3 Measure 3 $M_3$ / mm	Misura 4 Measure 4 $M_4$ / mm	Misura 5 Measure 5 $M_5$ / mm	Deviazione standard Standard Deviation $s(M_i)$ / $\mu\text{m}$
200,000	199,999	200	199,999	200	199,999	0,55

Riepilogo risultati Summary of results		Misure Measure / $\mu\text{m}$	Incertezza estesa Expanded Uncertainty $U (k=2)$ / $\mu\text{m}$
Errore di indicazione Length measurement error	E	3	13
Errore di forma del tastatore piatto Flat shape Error	$\Delta I_f$	/	/
Errore di misura bidirezionale Bidirectional measurement error	B	-1	2
Ripetibilità scala principale Repeatability main scale	R(2s)	1,4	/

Note : non presenti  
Notes

Data delle misure  
Date of measurements  
2024-02-13



Operatore  
Technician  
Andrea Cinel

	<b>QUALITY CONTROL PLAN</b>	Job:	24/2385
		Document:	QCP-24/2385
		Page:	1 of 2

**SAFETY AND RELIEF VALVES**

<b>Customer</b>	DELTA GmbH
<b>Project</b>	-
<b>Order</b>	DELTA-TECHNICAL-2024-PO-200

**CODICI DI INTERVENTO / Intervention codes**

<b>H</b>	<b>Hold point</b>
	Works may not proceed until the inspection has been carried out or the Purchaser / Third Party has informed the Supplier in writing about renunciation of the inspection.
<b>W</b>	<b>Witness point</b>
	Inspection Authority witness; notifications will be issued as per agreements and the activity will proceed even if Inspectors / Third Party are not attending on the notified date.
<b>R</b>	<b>Doc and certification control</b>
	Review of documentation

**Inspection Authority**  
(1) TECHNICAL  
(2) CUSTOMER  
(3) THIRD PARTY  
(4) END USER

**Remarks**

**Customer Approvals**

REV	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
1	02/10/2024	SECOND EMISSION	RB	LDV	RB
0	20/09/2024	FIRST EMISSION	RB	LDV	RB



## QUALITY CONTROL PLAN

Job	24/2385
Document	QCP-24/2385
Revision	2
Page	2 of 2

### SAFETY AND RELIEF VALVES

No.	Inspection & Test	Reference Parts	Applicability %	Reference Standard and Documentation	Document Type	INSPECTION AUTHORITY			
						(1)	(2)	(3)	(4)
1	MATERIAL CERTIFICATE	BODY-NOZZLE-DISC	100%	ASME II A-B / ASTM UNI EN EN 10204 3.1	MATERIAL TEST CERTIFICATE	R	R		
2	HYDROSTATIC TEST	BODY-NOZZLE-BONNET CAP	100%	ASME B16.34 ASME VIII-Div.1 & XIII MSS-SP61 TCH PROC. IL10	TEST REPORT	H	R		
3	SET PRESSURE TEST	ASSEMBLED VALVE	100%	TCH PROC. IL42 ASME VIII-Div.1 & XIII EN ISO 4126	CONSTRUCTION DECLARATION	H	R		
4	SEAT LEAKAGE TEST	ASSEMBLED VALVE	100%	API 527 TCH PROC. IL42	CONSTRUCTION DECLARATION	H	R		
5	SECONDARY PRESSURE TEST	ASSEMBLED VALVE	100%	ASME VIII-Div.1 & XIII TCH PROC. IL42	CONSTRUCTION DECLARATION	H	R		
6	ACCESSORY CHECK	ASSEMBLED VALVE	100%	TCH DRAWINGS TCH BOM / ODL	CONSTRUCTION DECLARATION	H	R		
7	VISUAL AND DIMENSIONAL CHECK	ASSEMBLED VALVE	100%	TCH DRAWINGS TCH PROC. IL42	CONSTRUCTION DECLARATION	H	W		
8	MEASURE TOOL CERTIFICATE VERIFICATION	PRESSURE GAUGES	-	TCH PROC. IT03	CALIBRATION CERTIFICATE	R	R		
9	PAINTING CHECK	ASSEMBLED VALVE	100%	PAINTING SYSTEM (1)	REPORT	R	R		
10	VALVE NAMEPLATE	ASSEMBLED VALVE	100%	ASME XIII TCH PROC. IL42	CONSTRUCTION DECLARATION	H	R		
11	PACKING CHECK	ASSEMBLED VALVE	100%	TCH PROC. PP17	REPORT	H	R		
12	RELEASE NOTE	ASSEMBLED VALVE	100%	-	CUSTOMER'S RELEASE NOTE	R	H		


**NOTES:**

(1) ACCORDING TO BUYER'S PAINTING PROCEDURE SUPPLIED WITH THE PO

**SECONDO - AS PER ANSI B16.34 / MSS-SP 61 / UNI EN ISO 4126-1**

PARTICOLARE PART	CODICE CODE	MATERIALE MATERIAL	
BODY Outlet connection 2" 150 RF	35-0023-LTMG	SA 352 LCB	
COLATA HEAT No.	QUANTITA' QUANTITY	SIGLA TEST ITEM	TAG NO.
KDO3	1	HT A 3792 - 28	PSV-RU0001A-03
KDO3	1	HT A 3792 - 31	PSV-RU0001B-03

**PROVA IDROSTATICA ESEGUITA AL BANCO  
HYDROSTATIC TEST ON BENCH**

FLUIDO DI PROVA TEST FLUID	97 % ACQUA WATER	3 % PLURICOOL BIO
MANOMETRO DI PROVA TEST PRESSURE GAUGE	C26-004-01	
PRESSIONE DI PROVA TEST PRESSURE	30 BAR	
DURATA DELLA PROVA TEST DURATION	60 SECONDS	
SPECIFICA N° N° SPECIFICATION	ANSI B16.34 / UNI EN ISO 4126-1	
PUNZONE OPERATORE OPERATOR PUNCH		
PROCEDURA TECHNICAL TECHNICAL PROCEDURE	IL 10	
PROCEDURA CLIENTE CUSTOMER PROCEDURE	//	
ESITO DELLA PROVA TEST RESULT	<input checked="" type="checkbox"/> <b>conforme</b> accepted	<input type="checkbox"/> <b>non conforme</b> not accepted

**IL CONTROLLO VISIVO E DIMENSIONALE SECONDO MSS SP-55-2011 È RISULTATO:**  
Visual and Dimensional check according to MSS SP-55-2011:

**CONFORME (accepted)**

**NON CONFORME (not accepted)**

**NOTE -NOTES :**





Technical Job: 24/2385  
Customer: DELTA GmbH  
Customer order number: DELTA-TECHNICAL-2024-PO-200

ISPETTORE  
INSPECTOR  
DATA  
DATE

DATA  
DATE  
2024.12.04



**technical** SRL  
Quality Assurance  
Elena Adornato  
*Elena Adornato*


 <b>technical</b> VIGNATE - MI - ITALY		<b>RAPPORTO PROVA IDROSTATICA HYDROSTATIC TEST REPORT</b>		N° <b>HT</b> <b>3573-004</b>	
<b>SECONDO - AS PER ANSI B16.34 / MSS-SP 61 / UNI EN ISO 4126-1</b>					
<b>PARTICOLARE PART</b>		<b>CODICE CODE</b>		<b>MATERIALE MATERIAL</b>	
<b>BONNET Outlet connection 2" 150 RF</b>		<b>35-0035-LT</b>		<b>SA 352 LCB</b>	
<b>COLATA HEAT No.</b>	<b>QUANTITA' QUANTITY</b>	<b>SIGLA TEST ITEM</b>		<b>TAG No.</b>	
LGS2	1	HT A 3573 - 30		PSV-RU0001A-03	
LGS2	1	HT A 3573 - 24		PSV-RU0001B-03	
<b>PROVA IDROSTATICA ESEGUITA AL BANCO HYDROSTATIC TEST ON BENCH</b>					
<b>FLUIDO DI PROVA TEST FLUID</b>		<b>97 % ACQUA WATER 3 % PLURICOOL BIO</b>			
<b>MANOMETRO DI PROVA TEST PRESSURE GAUGE</b>		<b>C26-004-01</b>			
<b>PRESSIONE DI PROVA TEST PRESSURE</b>		<b>30 BAR</b>			
<b>DURATA DELLA PROVA TEST DURATION</b>		<b>60 SECONDS</b>			
<b>SPECIFICA N° N° SPECIFICATION</b>		<b>ANSI B16.34 / UNI EN ISO 4126-1</b>			
<b>PUNZONE OPERATORE OPERATOR PUNCH</b>					
<b>PROCEDURA TECHNICAL TECHNICAL PROCEDURE</b>		<b>IL 10</b>			
<b>PROCEDURA CLIENTE CUSTOMER PROCEDURE</b>		<b>//</b>			
<b>ESITO DELLA PROVA TEST RESULT</b>		<input checked="" type="checkbox"/> <b>conforme</b> <i>accepted</i>		<input type="checkbox"/> <b>non conforme</b> <i>not accepted</i>	
<b>IL CONTROLLO VISIVO E DIMENSIONALE SECONDO MSS SP-55-2011 È RISULTATO:</b> <i>Visual and Dimensional check according to MSS SP-55-2011:</i>					
<input checked="" type="checkbox"/> <b>CONFORME (accepted)</b>			<input type="checkbox"/> <b>NON CONFORME (not accepted)</b>		
<b>NOTE -NOTES :</b> Technical Job: 24/2385 Customer: DELTA GmbH Customer order number: DELTA-TECHNICAL-2024-PO-200					
<b>ISPETTORE INSPECTOR</b> <b>DATA DATE</b>		<b>DATA DATE</b> 2024.12.04		 <b>technical SRL</b> Quality Assurance Elena Adornato 	

**SECONDO - AS PER ANSI B16.34 / MSS-SP 61 / UNI EN ISO 4126-1**

<b>PARTICOLARE PART</b>	<b>CODICE CODE</b>	<b>MATERIALE MATERIAL</b>
<b>CAP Outlet connection 2" 150 RF</b>	<b>35-0120-LS</b>	<b>SA 352 LCB</b>

<b>COLATA HEAT No.</b>	<b>QUANTITA' QUANTITY</b>	<b>SIGLA TEST ITEM</b>	<b>TAG NO.</b>
BMZ2	1	HT A 3468 - 7	PSV-RU0001A-03
BMZ2	1	HT A 3468 - 8	PSV-RU0001B-03
BMZ2	1	HT A 3468 - 9	PSV-RU0001A-02
BMZ2	1	HT A 3468 - 10	PSV-RU0001B-02

**PROVA IDROSTATICA ESEGUITA AL BANCO  
HYDROSTATIC TEST ON BENCH**


<b>FLUIDO DI PROVA TEST FLUID</b>	<b>97 % ACQUA WATER</b> <b>3 % PLURICOOL BIO</b>
<b>MANOMETRO DI PROVA TEST PRESSURE GAUGE</b>	<b>C26-004-01</b>
<b>PRESSIONE DI PROVA TEST PRESSURE</b>	<b>30 BAR</b>
<b>DURATA DELLA PROVA TEST DURATION</b>	<b>60 SECONDS</b>
<b>SPECIFICA N° N° SPECIFICATION</b>	<b>ANSI B16.34 / UNI EN ISO 4126-1</b>
<b>PUNZONE OPERATORE OPERATOR PUNCH</b>	
<b>PROCEDURA TECHNICAL TECHNICAL PROCEDURE</b>	<b>IL 10</b>
<b>PROCEDURA CLIENTE CUSTOMER PROCEDURE</b>	//
<b>ESITO DELLA PROVA TEST RESULT</b>	<input checked="" type="checkbox"/> <b>conforme accepted</b> <input type="checkbox"/> <b>non conforme not accepted</b>

**IL CONTROLLO VISIVO E DIMENSIONALE SECONDO MSS SP-55-2011 È RISULTATO:**  
*Visual and Dimensional check according to MSS SP-55-2011:* **CONFORME (accepted)** **NON CONFORME (not accepted)****NOTE -NOTES :**Technical Job: 24/2385  
Customer: DELTA GmbH  
Customer order number: DELTA-TECHNICAL-2024-PO-200ISPETTORE  
INSPECTOR  
DATA  
DATEDATA  
DATE  
2024.12.04

**SECONDO - AS PER ANSI B16.34 / MSS-SP 61 / UNI EN ISO 4126-1**

PARTICOLARE PART	CODICE CODE	MATERIALE MATERIAL	
<b>NOZZLE Inlet connection 1" 300 RF</b>	<b>42-1141-37</b>	<b>A479 AISI 316L</b>	
COLATA HEAT No.	QUANTITA' QUANTITY	SIGLA TEST ITEM	TAG NO.
294420	1	HT A 3779 - 9	PSV-RU0001A-03
294420	1	HT A 3779 - 10	PSV-RU0001B-03

**PROVA IDROSTATICA ESEGUITA AL BANCO  
HYDROSTATIC TEST ON BENCH**

<b>FLUIDO DI PROVA TEST FLUID</b>	<b>97 % ACQUA WATER</b>	<b>3 % PLURICOOL BIO</b>
<b>MANOMETRO DI PROVA TEST PRESSURE GAUGE</b>	<b>C26-004-01</b>	
<b>PRESSIONE DI PROVA TEST PRESSURE</b>	<b>80 BAR</b>	
<b>DURATA DELLA PROVA TEST DURATION</b>	<b>60 SECONDS</b>	
<b>SPECIFICA N° N° SPECIFICATION</b>	<b>ANSI B16.34 / UNI EN ISO 4126-1</b>	
<b>PUNZONE OPERATORE OPERATOR PUNCH</b>		
<b>PROCEDURA TECHNICAL TECHNICAL PROCEDURE</b>	<b>IL 10</b>	
<b>PROCEDURA CLIENTE CUSTOMER PROCEDURE</b>	<b>//</b>	
<b>ESITO DELLA PROVA TEST RESULT</b>	<input checked="" type="checkbox"/> <b>conforme accepted</b>	<input type="checkbox"/> <b>non conforme not accepted</b>

**IL CONTROLLO VISIVO E DIMENSIONALE È RISULTATO:**  
*Visual and Dimensional check:*

**CONFORME (accepted)**

**NON CONFORME (not accepted)**

**NOTE -NOTES :**

Technical Job: 24/2385  
Customer: DELTA GmbH  
Customer order number: DELTA-TECHNICAL-2024-PO-200

**ISPETTORE  
INSPECTOR  
DATA  
DATE**

**DATA  
DATE**  
2024.12.04




**technical SRL**  
Quality Assurance  
Elena Adornato  
*Elena Adornato*

**SECONDO - AS PER ANSI B16.34 / MSS-SP 61 / UNI EN ISO 4126-1**

PARTICOLARE PART	CODICE CODE	MATERIALE MATERIAL
<b>BODY</b> Outlet connection 2" 150 RF	35-0155-LT	SA352 LCB

COLATA HEAT No.	QUANTITA' QUANTITY	SIGLA TEST ITEM	TAG NO.
KDL3	1	HT A 3921 - 3	PSV-RU0001A-02
KDL3	1	HT A 3921 - 1	PSV-RU0001B-02

**PROVA IDROSTATICA ESEGUITA AL BANCO  
HYDROSTATIC TEST ON BENCH**

FLUIDO DI PROVA TEST FLUID	97 % ACQUA WATER	3 % PLURICOOL BIO
MANOMETRO DI PROVA TEST PRESSURE GAUGE	C26-004-01	
PRESSIONE DI PROVA TEST PRESSURE	30 BAR	
DURATA DELLA PROVA TEST DURATION	60 SECONDS	
SPECIFICA N° N° SPECIFICATION	ANSI B16.34 / UNI EN ISO 4126-1	
PUNZONE OPERATORE OPERATOR PUNCH		
PROCEDURA TECHNICAL TECHNICAL PROCEDURE	IL 10	
PROCEDURA CLIENTE CUSTOMER PROCEDURE	//	
ESITO DELLA PROVA TEST RESULT	<input checked="" type="checkbox"/> <b>conforme</b> accepted	<input type="checkbox"/> <b>non conforme</b> not accepted

**IL CONTROLLO VISIVO E DIMENSIONALE SECONDO MSS SP-55-2011 È RISULTATO:**  
Visual and Dimensional check according to MSS SP-55-2011:

**CONFORME (accepted)**

**NON CONFORME (not accepted)**

**NOTE -NOTES :**

Technical Job: 24/2385  
Customer: DELTA GmbH  
Customer order number: DELTA-TECHNICAL-2024-PO-200

ISPETTORE  
INSPECTOR  
DATA  
DATE

DATA  
DATE  
2024.12.04




**technical** SRL  
Quality Assurance  
Elena Adornato  
*Elena Adornato*

**SECONDO - AS PER ANSI B16.34 / MSS-SP 61 / UNI EN ISO 4126-1**

PARTICOLARE PART	CODICE CODE	MATERIALE MATERIAL	
BONNET Outlet connection 2" 150 RF	35-0040-LT	SA 352 LCB	
COLATA HEAT No.	QUANTITA' QUANTITY	SIGLA TEST ITEM	TAG NO.
XAH0	1	HT A 2064 - 40	PSV-RU0001A-02
XAH0	1	HT A 2064 - 41	PSV-RU0001B-02

**PROVA IDROSTATICA ESEGUITA AL BANCO  
 HYDROSTATIC TEST ON BENCH**

FLUIDO DI PROVA TEST FLUID	97 % ACQUA WATER	3 % PLURICOOL BIO
MANOMETRO DI PROVA TEST PRESSURE GAUGE	C26-004-01	
PRESSIONE DI PROVA TEST PRESSURE	30 BAR	
DURATA DELLA PROVA TEST DURATION	60 SECONDS	
SPECIFICA N° N° SPECIFICATION	ANSI B16.34 / UNI EN ISO 4126-1	
PUNZONE OPERATORE OPERATOR PUNCH		
PROCEDURA TECHNICAL TECHNICAL PROCEDURE	IL 10	
PROCEDURA CLIENTE CUSTOMER PROCEDURE	//	
ESITO DELLA PROVA TEST RESULT	<input checked="" type="checkbox"/> conforme accepted	<input type="checkbox"/> non conforme not accepted

**IL CONTROLLO VISIVO E DIMENSIONALE SECONDO MSS SP-55-2011 È RISULTATO:**  
*Visual and Dimensional check according to MSS SP-55-2011:*
 CONFORME (accepted)

 NON CONFORME (not accepted)

**NOTE -NOTES :**

 Technical Job: 24/2385  
 Customer: DELTA GmbH  
 Customer order number: DELTA-TECHNICAL-2024-PO-200

 ISPETTORE  
 INSPECTOR  
 DATA  
 DATE

 DATA  
 DATE  
 2024.12.04


**SECONDO - AS PER ANSI B16.34 / MSS-SP 61 / UNI EN ISO 4126-1**

PARTICOLARE PART	CODICE CODE	MATERIALE MATERIAL
<b>NOZZLE</b> Inlet connection 1½" 300 RF	35-0263-37	SA351 CF3M

COLATA HEAT No.	QUANTITA' QUANTITY	SIGLA TEST ITEM	TAG NO.
CDJ4	1	HT A 3904 - 15	PSV-RU0001A-02
CDJ4	1	HT A 3904 - 17	PSV-RU0001B-02

**PROVA IDROSTATICA ESEGUITA AL BANCO  
HYDROSTATIC TEST ON BENCH**

<b>FLUIDO DI PROVA</b> TEST FLUID	97 % ACQUA WATER	3 % PLURICOOL BIO
<b>MANOMETRO DI PROVA</b> TEST PRESSURE GAUGE	C26-004-01	
<b>PRESSIONE DI PROVA</b> TEST PRESSURE	80 BAR	
<b>DURATA DELLA PROVA</b> TEST DURATION	60 SECONDS	
<b>SPECIFICA N°</b> N° SPECIFICATION	ANSI B16.34 / UNI EN ISO 4126-1	
<b>PUNZONE OPERATORE</b> OPERATOR PUNCH		
<b>PROCEDURA TECHNICAL</b> TECHNICAL PROCEDURE	IL 10	
<b>PROCEDURA CLIENTE</b> CUSTOMER PROCEDURE	//	
<b>ESITO DELLA PROVA</b> TEST RESULT	<input checked="" type="checkbox"/> <b>conforme</b> accepted	<input type="checkbox"/> <b>non conforme</b> not accepted

**IL CONTROLLO VISIVO E DIMENSIONALE SECONDO MSS SP-55-2011 È RISULTATO:**  
Visual and Dimensional check according to MSS SP-55-2011:

**CONFORME (accepted)**

**NON CONFORME (not accepted)**

**NOTE -NOTES :**

Technical Job: 24/2385  
Customer: DELTA GmbH  
Customer order number: DELTA-TECHNICAL-2024-PO-200

**ISPETTORE**  
INSPECTOR  
**DATA**  
DATE

**DATA**  
DATE  
2024.12.04



**Quality Assurance**  
Elena Adornato  
*Elena Adornato*



# Testing Report n° 24.5579, 15<sup>th</sup> November, 2024 – English version

**Customer**  
TECHNICAL S.R.L.

VIA TOSCANA 9  
20052 VIGNATE (MI)

**Sample number:** 5579  
**Received date:** 17/10/2024  
**Started date:** 21/10/2024  
**Sample description:** Colourless clear liquid  
**Sample label:** Demineralized water – Rif. comm 2240417 C/L CD

**Matrix:** Drinking water

**Finished date:** 15/11/2024

**Sample quantity:** 1 l  
**Packaging:** Plastic bottle  
**Sample fetched by:** Customer  
**Reference limits:** none

**Sampling procedure:** Not declared  
**Sampling date:** 17/10/2024

CD  
CD

Name test	Method	Unit	Value	Uncertainty (±)	Limit min max
Ammonia	APHA Standard Methods for the Examination of Water and Wastewater 4500 NH3 D (2021)	mg/l	0,404	0,069	
Nitrite (NO2)	APAT CNR IRSA 4050 Man 29 2003	mg/l	< 0,010		
Nitrate (NO3)	APHA Standard Methods for the Examination of Water and Wastewater 4110 B (2020)	mg/l	< 5,0		
* Bicarbonate	APHA Standard Methods for the Examination of Water and Wastewater 2320 B (2017)	mg(HCO3)/l	4,0		
Chloride	APHA Standard Methods for the Examination of Water and Wastewater 4110 B (2020)	mg/l	< 5,0		
Fluoride	APHA Standard Methods for the Examination of Water and Wastewater 4110 B (2020)	mg/l	< 0,5		
Sulphates (as SO4)	APHA Standard Methods for the Examination of Water and Wastewater 4110 B (2020)	mg/l	< 5		
pH	APAT CNR IRSA 2060 Man 29 2003	pH units	6,32	0,15	
Conductivity	APHA Standard Methods for the Examination of Water and Wastewater 2510 B (2021)	µS/cm at 20°C	16	1	
* Hardness	APAT CNR IRSA 2040 B Man 29 2003	°F	< 0,5		
* Dry residue at 180°C	UNI 10506:1996	mg/l	4		
* Arsenic	UNI EN ISO 15587-2:2002 + UNI EN ISO 17294-2:2023	µg/l	< 1		
* Calcium	UNI EN ISO 15587-2:2002 + UNI EN ISO 17294-2:2023	mg/l	1,1		
* Total Chromium	UNI EN ISO 15587-2:2002 + UNI EN ISO 17294-2:2023	µg/l	< 1		
* Magnesium	UNI EN ISO 15587-2:2002 + UNI EN ISO 17294-2:2023	mg/l	< 1,0		

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Quality Assurance  
Elena Adornato  
*Elena Adornato*



* Manganese	UNI EN ISO 15587-2:2002 + UNI EN ISO 17294-2:2023	µg/l	< 1
* Potassium	UNI EN ISO 15587-2:2002 + UNI EN ISO 17294-2:2023	mg/l	< 1,0
* Sodium	UNI EN ISO 15587-2:2002 + UNI EN ISO 17294-2:2023	mg/l	< 2,0

Laboratory Manager  
Dr.ssa Chim. Silvia De Matteis

REVISION REASON : Wrong data reported.

\* Test not qualified by Accredia

OB out of bounds D derogation CD Customer Data

This Testing Report exclusively refers to the examined sample. It cannot be reproduced partially without laboratory approval.

The uncertainty reported is calculated to a confidence level of 95%, with a confidence level factor of k=2.

In case of sampling made by customer, results refer on sample as received. Laboratory decline any responsibility about information received by customer.

Document with advanced digital signature in accordance with current legislation.

END OF TEST REPORT

 **technical SRL**  
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 **technical SRL**  
Quality Assurance  
Elena Adornato  

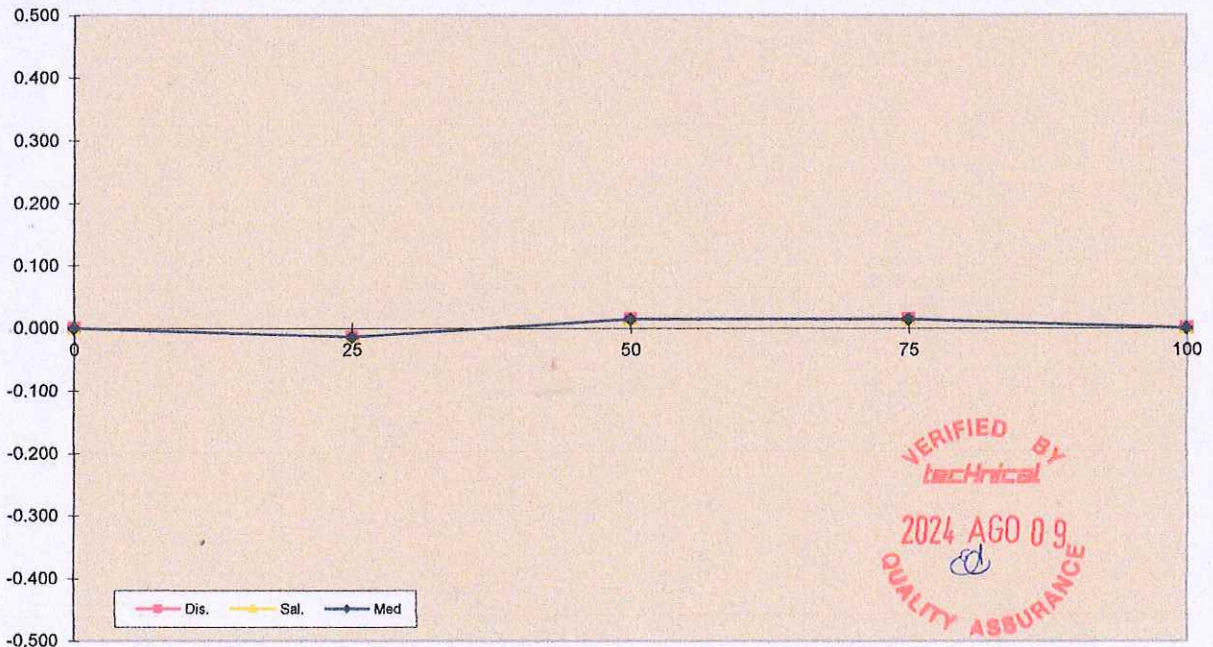

## CALIBRATION REPORT Nr. 24-303-CT1

INSTRUMENTS	Pressure transmitter
TYPE	STS
S/N	1107934-037
FULL SCALE	700 bar
RESOLUTION	0.1 bar
CLASS	*0,25%
Master Instrument	Digital GAUGE
Type	TRAFAG
Serial Number	702282-029
F.S. Range	1600 bar
Resolution	0,1 bar
Class	*0,034%
Certification N°	LAT 093 N. 6824P
Procedure	PC001

Amb. P. (mbar)	*
Dew (%)	*
Amb. Temp. (°C)	30°C
JOB	PC303
P.O.	C26-004-01
Result	POSITIVE
Date	09/08/2024
Expiration	09/08/2025
Operator	<i>[Signature]</i>

CALIBRATION RESULTS (% Vs. Master Instruments)		
Acc. Measured	Max Pos.	0.01
	Max Neg.	-0.01
Average Error	Max Pos.	0.01
	Max Neg.	-0.01
Hysteresis		0.00
Repeatability		0.00
Note:		

MASTER		MEASURED VALUES						ERRORS (% F.s.)						Calculated Dev. (% F.s.)					
Mis %	Mis bar	Up 1	1 Dwn	Up 2	2 Dwn	Up 3	3 Dwn	Up 1	1 Dwn	Up 2	2 Dwn	Up 3	3 Dwn	Average			Hyst.	Ripetibility	
														Sal.	Disc.	Med		Up	Dwn
0	0.0	0.0						0.00								0.00			
24.3	170.3	170.2						-0.01								-0.01			
46.4	324.6	324.7						0.01								0.01			
75.3	526.8	526.9						0.01								0.01			
100.0	700.3	700.3						0.00								0.00			



**Notes:**


This report is referred to whole Transmitter & A/D board of PLC



## RIEPILOGO CERTIFICATI - CERTIFICATE SUMMERY

CLIENTE - CUSTOMER	N° ORDINE - ORDER N°	Ns. COMMESSA - JOB N°
DELTA GmbH	2024-PO-200	24/2385

PARTICOLARE DENOMINATION	N° COLATA CASTING N°	N° CERTIFICATO CERTIFICATE N°	MATERIALE MATERIAL	FORNITORE SUPPLIER	PAGINA PAGE	MATRICOLA SERIAL N°
CORPO BODY	KDO3	P315/U	ASME SA352 LCB	SANDORI CASTINGS PVT. LTD.	2	294898+899
COPERCHIO BONNET	LGS2	N341/K	ASME SA352 LCB	SANDORI CASTINGS PVT. LTD.	3	294898+899
CAPPELLO CAP	BMZ2	N065/R1	ASME SA352 LCB	SANDORI CASTINGS PVT. LTD.	4	294898+899
BOCCAGLIO NOZZLE	294420	MEST117105/2024	ASME SA479 2010 S31603	ACCIAIERIE VALBRUNA	5 - 8	294898+899
OTTURATORE DISC	292536	MEST070807/2024	ASME SA479 2010 S31603	ACCIAIERIE VALBRUNA	9 - 12	294898+899
CORPO BODY	KDL3	P315/T	ASME SA352 LCB	SANDORI CASTINGS PVT. LTD.	13	294900+901
COPERCHIO BONNET	XAH0	L261/K3	ASME SA352 LCB	SANDORI CASTINGS PVT. LTD.	14	294900+901
CAPPELLO CAP	BMZ2	N065/R1	ASME SA352 LCB	SANDORI CASTINGS PVT. LTD.	4	294900+901
BOCCAGLIO NOZZLE	CDJ4	Q049/K	ASME SA-351 CF3M 2010	SANDORI CASTINGS PVT. LTD.	15	294900+901
OTTURATORE DISC	288924	MEST134665/2022	ASME SA479 2010 S31603	ACCIAIERIE VALBRUNA	16 - 18	294900+901

ISPETTORE CLIENTE / CUSTOMER INSPECTOR	ISPETTORE TECHNICAL / TECHNICAL INSPECTOR
	 <b>technical</b> SRL Quality Assurance Elena Adornato



### SANDORI CASTINGS PVT. LTD.

Works : Survey No. 188, Gondal NH 8-B, Plot No. 1, Veraval (Shapar), Tal. Kotda Sangani, Dist. Rajkol. Gujarat (India)  
 Tel. : +91 2827 253400, 254282 Email : sales@sandoricastings.com

#### INSPECTION CERTIFICATE

THIS CERTIFICATE HAS BEEN PREPARED AS PER DIN EN 10204 3.1

TC No. : 000656 / 1 / 1.0619/WCB/WCC/LCC/LCB / KDO3 / P315

Name of Customer : TECHNICAL S.R.L  
 Certificate Confirms To : EN 10204 3.1  
 Material Specification : EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB

DC No. : P315/U - 27/02/2024  
 Invoice No. : P315 - 27/02/2024

Purchase Order No. : 000656 - 26/10/2023  
 Order Acceptance No. : 0891/23-24 - 26/10/2023

#### SPECTRO CHEMICAL ANALYSIS

Heat No.	Pouring Date	C %	SI %	Mn %	P %	S %	Cr %	NI %	Mo %	Cu %	V %	CE			HTB No.
Min.	--	0.180	0.300	0.600											
Max.	--	0.230	0.600	1.000	0.020	0.020	0.300	0.400	0.120	0.300	0.030	0.430			
KDO3	09/11/2023	0.196	0.407	0.800	0.019	0.014	0.036	0.049	0.009	0.040	0.005	0.359			03/091/23 & 03/092/23

#### MECHANICAL PROPERTIES

Heat No.	ASTM A370				ASTM A370	ASTM A370				Part Description / Drg. No.	Qty. (Dispatch)
	YS MPa 0.2 %	UTS MPa	Elgn. % GL 25mm	R.A. %	Hardness HB	Charpy V-Notch Impact Test at -46 °C (Min. J)					
Min.	275.00	485.00	22.00	35.00		1	2	3	Avg		
Max.		600.00			237.00	27J	27J	27J	27J		
KDO3	307.29	539.39	30.60	49.82	144-150	32	44	40	38.67	BODY 1"600 x 2" 150RF Cust. Drg. No. : 35-0023-LTMG Rev. No. : 01 Mach. Drg. No. : 07-0523-A Rev. No. : 04 Customer Part ID : 07-0523-LTMG PO Line No. : 1 W./Pc. : 8.99	22

Casting Process : Melting By Electric Induction Furnace  
 Dimensional Inspection : Accepted as per respective component drawing  
 Visual Inspection : 100% Checked and Found Satisfactory as per MSS SP 55 & BS ISO 19959:2005 STD  
 Heat Treatment : Quenching At 920°C 1 Hr/inch Socking Water Quenched & Tempering At 680°C, 2 Hrs. Hold and Then Air Cooled  
 Surface Condition : Shot Blasted  
 Foundry Identification : Castings are identified by Heat No. / Material Grade / Foundry Logo "S" and Other Requirements of Customer

Note : Materials Are Free From Radioactive Contamination



Conclusion : Material Confirms to EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB Specification.

This alloy meets basic requirement of EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB. Casting Confirms to NACE MR0175-2003/ISO15166. Approved according to AD 2000 Merblatt W0 and Certified according to PED (2014/68/EU) by Certification body for Pressure Equipment of TUV NORD System, Notified Body Reg. No. 0045.

 JALPESH KAPADIYA ( Laboratory Incharge )	 RAJESH VACHHANI ( Engineer - QA )	 V.M.BARIYA ( Authorised Inspector )
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### SANDORI CASTINGS PVT. LTD.

Works : Survey No. 188, Gondal NH 8-B, Plot No. 1, Veraval (Shapar), Tal. Kotda Sangani, Dist. Rajkot, Gujarat (India)  
Tel. : +91 2827 253400, 254282 Email : sales@sandoricastings.com

#### INSPECTION CERTIFICATE

THIS CERTIFICATE HAS BEEN PREPARED AS PER DIN EN 10204 3.1

TC No. : 000717. / 2 / 1.0619/WCB/WCC/LCC/LCB / LGS2 / N341

Name of Customer : TECHNICAL S.R.L	DC No. : N341/K - 04/03/2023
Certificate Confirms To : EN 10204 3.1	Invoice No. : N341 - 04/03/2023
Material Specification : EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB	

Purchase Order No. : 000717. - 07/10/2022  
Order Acceptance No. : 0968/22-23 - 10/10/2022

#### SPECTRO CHEMICAL ANALYSIS

Heat No.	Pouring Date	C %	SI %	Mn %	P %	S %	Cr %	NI %	Mo %	Cu %	V %	CE	HTB No.
Min.	--	0.180	0.300	0.500									
Max.	--	0.230	0.600	1.000	0.020	0.020	0.300	0.400	0.120	0.300	0.030	0.430	
LGS2	17/12/2022	0.186	0.454	0.960	0.019	0.010	0.069	0.020	0.013	0.022	0.003	0.366	03/1315/22 & 03/1316/22,04/831/22 & 04/832/22

#### MECHANICAL PROPERTIES

Heat No.	ASTM A370				ASTM A370	ASTM A370				Part Description / Drg. No.	Qty. (Dispatch)
	YS MPa 0.2%	UTS MPa	Elgn. % GL 25mm	R.A. %	Hardness HB	Charpy V-Notch Impact Test at -46 °C (Min. J)					
Min.	275.00	485.00	22.00	35.00		1	2	3	Avg	BONNET 1½"X2" Cust. Drg. No. : 35-0035-LTMG Rev. No. : 04 Mach. Drg. No. : 10-0350-A Rev. No. : 01 Customer Part ID : 10-0350-LTMG PO Line No. : 2 Wt./Pc. : 3.01	56
Max.		600.00			237.00	27J	27J	27J	27J		
LGS2	306.29	531.12	30.60	49.99	144-150	36	44	40	40.00		

Casting Process : Melling By Electric Induction Furnace  
Dimensional Inspection : Accepted as per respective component drawing  
Visual Inspection : 100% Checked and Found Satisfactory as per MSS SP 55 & BS ISO 19959:2005 STD  
Heat Treatment : Quenching At 920°C 1 Hr/Inch Socking Water Quenched & Tempering At 680°C, 2 Hrs. Hold and Then Air Cooled  
Surface Condition : Shot Blasted  
Foundry Identification : Castings are identified by Heat No. / Material Grade / Foundry Logo "S" and Other Requirements of Customer

Note : Materials Are Free From Radioactive Contamination




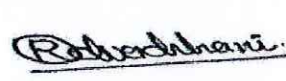



Conclusion : Material Confirms to EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB Specification.

This alloy meets basic requirement of EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB. Casting Confirms to NACE MR0175-2003/ISO15156. Approved according to AD 2000 Merblatt W0 and Certified according to PED (2014/68/EU) by Certification body for Pressure Equipment of TUV NORD System, Notified Body Reg. No. 0045.

 JALPESH KAPADIYA ( Laboratory Incharge )	 RAJESH VACHHANI ( Engineer - QA )	 V.M.BARIYA ( Authorised Inspector )
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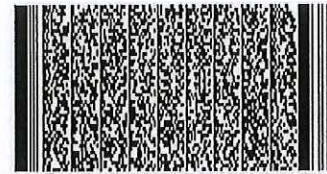


 <h2 style="margin: 0;">SANDORI CASTINGS PVT. LTD.</h2> <p style="font-size: small; margin: 0;">Works : Survey No. 188, Gondal NH 8-B, Plot No. 1, Veraval (Shapar), Tal. Kotda Sangani, Dist. Rajkol. Gujarat (India) Tel. : +91 2827 253400, 254282 Email : sales@sandoricastings.com</p>														
<b>INSPECTION CERTIFICATE</b>														
THIS CERTIFICATE HAS BEEN PREPARED AS PER DIN EN 10204 3.1														
TC No. : 000780. / 2 / 1.0619/WCB/WCC/LCC/LCB / BM22 / N065														
Name of Customer : TECHNICAL S.R.L. Certificate Confirms To : EN 10204 3.1 Material Specification : EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB										DC No. : N065/R1 - 31/05/2022 Invoice No. : N065 - 31/05/2022				
Purchase Order No. : 000780. - 12/11/2021 Order Acceptance No. : 1270/21-22 - 13/11/2021														
<b>SPECTRO CHEMICAL ANALYSIS</b>														
Heat No.	Pouring Date	C %	SI %	Mn %	P %	S %	Cr %	Ni %	Mo %	Cu %	V %	CE	HTB No.	
Min.	--	0.180	0.300	0.500										
Max.	--	0.230	0.600	1.000	0.020	0.020	0.300	0.400	0.120	0.300	0.030	0.430		
BM22	25/02/2022	0.198	0.382	0.860	0.014	0.009	0.062	0.061	0.010	0.030	0.004	0.363	03/212/22 & 05/128/22	
<b>MECHANICAL PROPERTIES</b>														
Heat No.	ASTM A370				ASTM A370	ASTM A370				Part Description / Drg. No.	Qty. (Dispatch)			
	YS MPa 0.2 %	UTS MPa	Elgn. % GL 25mm	R.A. %	Hardness HB	Impact Test at -46 °C (Min. J)								
Min.	275.00	485.00	22.00	35.00		1	2	3	Avg	CAP TEST GAG 10/20/30000 Cust. Drg. No. : 35-0120-LS Rev. No. : 01 Mach. Drg. No. : 10-0354-A Rev. No. : 01 Customer Part ID : 10-0354-LS PO Line No. : 2 WL/Pc. : 0.28 Max Wall Thick. : 9.0MM	58			
Max.		600.00			237.00	27J	27J	27J	27J					
BM22	365.59	595.96	27.92	64.57	144-150	42	34	46	40.67					
Casting Process : Melting By Electric Induction Furnace Dimensional Inspection : Accepted as per respective component drawing Visual Inspection : 100% Checked and Found Satisfactory as per MSS SP 55 & BS ISO 19959:2005 STD Heat Treatment : Quenching At 920°C 1 Hr/Inch Socking Water Quenched & Tempering At 680°C, 2 Hrs. Hold and Then Air Cooled Surface Condition : Shot Blasted Foundry Identification : Castings are identified by Heat No. / Material Grade / Foundry Logo "S" and Other Requirements of Customer														
Note : Materials Are Free From Radioactive Contamination														
														
Conclusion : Material Confirms to EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB Specification.														
This alloy meets basic requirement of EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB. Casting Confirms to NACE MR0175-2003/ISO15156. Approved according to AD 2000 Merblatt W0 and Certified according to PED (2014/68/EU) by Certification body for Pressure Equipment of TUV NORD System, Notified Body Reg. No. 0045.														
 JALPESH KAPADIYA ( Laboratory Incharge )					 RAJESH VACHHANI ( Engineer - QA )					 V.M.BARIYA ( Authorised Inspector )				
MET-FO-06 Rev. 00, dtd. 01.12.15					Page 1 of 1					Sandori Castings Pvt. Ltd., Veraval (Shapar)				



# 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  
<https://www.valbruna-stainless-steel.com/>



**CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN**

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

Certificato nr. **MEST117105 / 2024 /**  
 Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Ciente <b>TECHNICAL SRL</b> VIA TOSCANA, 9 20060 - VIGNATE - MI	Stato di fornitura : <b>Laminato Solubilizzato - Pelato</b> Lieferzustand Delivery state Etat de livraison Estado de la entrega	Produttore : Hersteller/Item/Usine productrice/Productor  <b>ACCIAIERIE VALBRUNA S.P.A.</b>
Ordine nr: <b>ORDINE 591</b> Bestell Your order Commande Num. de pedido	Tipo di Elaborazione: <b>E+AOD</b> Erhmelzungsart Melting process Mode d'elaboration Método de fusión	Marchi di Fabbrica: Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice Marcas de fábrica
Conferma ordine nr: <b>MI24007170</b> Works/Our Order/Ref.nr. Num. de confirmación de pedido	Qualità: <b>1.4401/1.4404/316/316L</b> Werkstoff/Grade/Nuance Calidad	Punzone del Collaudatore: Stempel des Werkssachverständigen Inspector's stamp/Poligon de l'assesseur Sello del Comprobador
Avviso di Spedizione: <b>A-MI24005470</b> Lieferanzeige/Packing list/B.L. Aviso de embarque	Marca: <b>MVAPML ( MAXIVAL )</b> Markenbezeichnung Brand / Nuance / Marca	Punzonatura: <b>1.4401/1.4404</b> Kennzeichnung Marking Marquage / Sello

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences / Especificaciones	Aufzeichnungen / Notes / Notes / Notas
VAL STOCK W2 A/1 1.4404/316L A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AISI . 316/316L	
ASME SA182 2023 S31600/03 A (4)	(4)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2023 B8M CLASS 1D (5)	(5)Section II Part A 2023 EDITION
ASME SA276 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION
ASME SA320 2021 B8M CLASS 1 (7)	(7)Section II Part A 2021 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2023 B8M CLASS 1D	
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A320 2022 B8M CLASS 1 CLASS1	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2024 .	
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
ACH CO . .	
KV L -196C . ISO 148-1	
PREN . .	



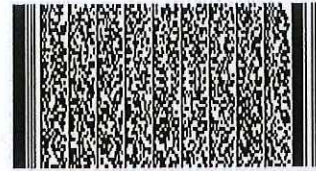
Tolleranza: k12							
Toleranz/Allowance/Tolerance/Tolerancia							
Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. / Bem nr. / Nr. de posta / Número de artículo	Objektstand / Product description / Descrip. du produit / Descripción del producto	Abmessungen / Dimension / Dimension	Länge / Length / Longueur / Longitud	Schmelze / Heat / Coulees / Colada	Stückzahl / Pieces / Pièces / Piezas	Gewicht / Weight / Poids / Peso	Losnr. / Lot nr. / Lote nro.
0030	Tondo	65,000	6100/ 6110	294420		161,0	404704030

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2016, IATF 16949 : 2016, AS 9100D			
Vicenza, <b>02/10/2024</b> VCC008 - MEST117105	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad <b>R.BERTELLI</b>	Direzione Prodotto Produktmanagement/Product Management/Dirección Producto/Gerente de producto <b>P.MESSORI</b>	Pagina 1 di 4



# 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  
<https://www.valbruna-stainless-steel.com/>



**CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN**

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

Certificato nr. MEST117105 / 2024 / Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente  
**TECHNICAL SRL**  
 VIA TOSCANA, 9  
 20060 - VIGNATE - MI

Stato di fornitura: Laminato Solubilizzato - Pelato  
 Lieferzustand  
 Delivery state  
 Etat de livraison  
 Estado de la entrega

Produttore:  
 Hersteller/Item/Usine productrice/Productor

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

Ordine nr: ORDINE 591

Bestell  
 Your order  
 Commande  
 Num. de pedido

Confirma ordine nr: MI24007170

Works/Our Order/Ref. nr.  
 Num. de confirmación de pedido

Avviso di Spedizione: A-MI24005470

Lieferanzeige/Packing list/B.L.  
 Aviso de embarque

Tipi di Elaborazione: E+AOD

Erschmelzungsart  
 Melting process  
 Mode d'elaboration  
 Método de fusión

Qualità: 1.4401/1.4404/316/316L

Werkstoff/Grade/Nuance  
 Calidad

Marca: MVAPML (MAXIVAL)

Markenbezeichnung  
 Brand / Nuance / Marca

Marchi di Fabbrica:

Zeichen des Lieferwerkes  
 Trade marks  
 Sigles de fusine productrice  
 Marcas de fábrica

Punzone del Collaudatore:

Stempel des Werksschwerstündigen  
 Inspector's stamp/Polnion de l'essayeur  
 Sello del Comprobador

Punzonatura: 1.4401/1.4404

Kennzeichnung  
 Marking  
 Marquage / Sello



MR

**TEST ALLO STATO DI FORNITURA**  
 Test on delivery condition / Prüfung auf lieferbarem produkt / test a l'etat de fourniture / Prueba sobre el material así como entregado

TEST	Provetta/ Probe/stab Specimen/Eprouvette Larg diam. Spess. Bresle Diam. Dicke Wäch Diam. Thickness Larg. diam. espess. mm / Probeta	°C	Posiz. Saggio Probage Location Ubicación	Snervamento Streckgrenze/Yield Stress Limite elastico Rp 0,2% N/mm2		Snervamento Streckgrenze/Yield Stress Limite elastico Rp 1% N/mm2		Resistenza Zugfestigkeit/Tensile strength Resistencia a tracción Rm N/mm2		Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschränkung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto		Durezza Härte Hardness Dureza / Durezza HB		
				min	max	min	max	min	max	min	max	min	max	min	max	min	max	
Valori richiesti Anforderungen/Required values Valores demandados / Valores requeridos				200	235	500	700	40	-	-	-	-	-	-	-	-	-	215
A	10	20	L	280	325	590	700	51	-	68	-	-	-	-	-	-	173	
I	10	20	L	274	321	585	700	53	-	66	-	-	-	-	-	-	171	

**TEST ALLO STATO DI FORNITURA**  
 Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado

TEST	min	max
A	Dimensioni grano x ASTM E112	5

Charpy per ISO 148-1

TEST	Provetta/ Probe/stab Specimen/Eprouvette Larg diam. Spess. Bresle Diam. Dicke Wäch Diam. Thickness Larg. diam. espess. mm / Probeta	°C	Posiz. Saggio Probage Location Ubicación	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV <sub>2</sub>			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
				min	max	max	min	max	max	min	max	max
Valori richiesti Anforderungen/Required values Valores demandados / Valores requeridos				-	-	-	-	-	-	-	-	-
B	10X10	-196	L	199	210	205	1,850	1,810	1,675	67	70	65

Test allo stato di fornitura per ASTM A370

TEST	Provetta/ Probe/stab Specimen/Eprouvette Larg diam. Spess. Bresle Diam. Dicke Wäch Diam. Thickness Larg. diam. espess. mm / Probeta	°C	Posiz. Saggio Probage Location Ubicación	Snervamento Streckgrenze/Yield Stress Limite elastico Rp 0,2% N/mm2		Snervamento Streckgrenze/Yield Stress Limite elastico Rp 1% N/mm2		Resistenza Zugfestigkeit/Tensile strength Resistencia a tracción Rm N/mm2		Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschränkung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto		Durezza Härte Hardness Dureza / Durezza HB	
				min	max	min	max	min	max	min	max	min	max	min	max	min	max
Valori richiesti Anforderungen/Required values Valores demandados / Valores requeridos				205	-	515	-	40	-	50	-	-	-	-	-	-	-
C	12,5	20	L	285	-	589	-	55	-	69	-	-	-	-	-	174	

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

Vicenza, 02/10/2024 VCQ008 - MEST117105	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 2 di 4
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**technical SRL**  
 COPIA CONFORME ALL'ORIGINALE  
 COPY TRUE TO THE ORIGINAL

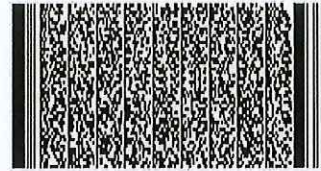
**technical SRL**  
 Quality Assurance  
 Elena Adornato  
*Elena Adornato*





# 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  
<https://www.valbruna-stainless-steel.com/>



**CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN**  
 In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1  
 Nach/According to/Selon/De conformidad con  
 Certificato nr. MEST117105 / 2024 /  
 Prüfung/Tests/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Cliet/Cliente  
**TECHNICAL SRL**  
 VIA TOSCANA, 9  
 20060 - VIGNATE - MI

Stato di fornitura : Laminato Solubilizzato - Pelato  
 Lieferzustand  
 Delivery state  
 Etat de livraison  
 Estado de la entrega

Produttore :  
 Hersteller/Item/Usine productice/Productor

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

Ordine nr: ORDINE 591

Bestell  
 Your order  
 Commande  
 Num. de pedido

Confirma ordine nr: MI24007170

Werkst/Our Order/Ref.nr.  
 Num. de confirmación de pedido

Avviso di Spedizione: A-MI24005470

Lieferanzeige/Packing list/UB.L.  
 Aviso de embarque

Tipo di Elaborazione: E+AOD

Erschmelzungsart  
 Melting process  
 Mode d'elaboration  
 Método de fusión

Qualità: 1.4401/1.4404/316/316L

Werkstoff/Grade/Nuance  
 Calidad

Marca: MVAPML (MAXIVAL)

Markenbezeichnung  
 Brand / Nuance / Marca

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Trade marks  
 Sigles de l'usine productice  
 Marcas de fábrica



Punzone del Collaudatore:

Stempel des Werkssachverständigen  
 Inspector's stamp/Poligon de l'essayeur  
 Sello del Comprobador

MR

Punzonatura: 1.4401/1.4404

Kenzeichnung  
 Marking  
 Marquage / Sello

Charpy per ISO 148-1

TEST	Provetta/ Probe/Stub Spezimen/Eprouvette Leg. diam. Spies Brite Diam. Block Weld Diam. Thickness Leg. diam. Spine mm / English	°C	Posiz. Saggio Position Usure Emplacement Union 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Fraca de impacto KVz			Espansione laterale Lateral Expansion			Shear Shear	
				min	max	100	100	100	-	-	-
F	10X10	20	L	258	251	248					
G	10X10	20	L	253	247	250					

Tensile testing according to ISO 6892-1

Impact testing according to ISO 148-1

Mechanical properties according to ASTM A370.

Brinell hardness according to ASTM E10

Tensile testing according to ASTM E8

Brinell hardness according to ISO 6506-1



**Analisi chimica**

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coûlée	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
Schmelze/Colada	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
294420	24,6	0,019	0,49	1,49	16,96	2,00	10,01	0,137	0,032	0,030	0,065					

**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

**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

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

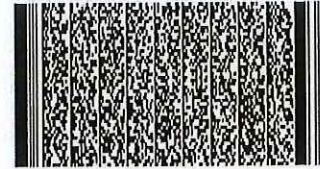
Vicenza, 02/10/2024 VCC008 - MEST117105	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Dirección Product/Gerente de producto P.MESSORI	Pagina 3 di 4
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# 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  
<https://www.valbruna-stainless-steel.com/>



**CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN**

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

Certificato nr. **MEST117105 / 2024 /**  
 Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente  
**TECHNICAL SRL**  
**VIA TOSCANA, 9**  
**20060 - VIGNATE - MI**

Stato di fornitura: **Laminato Solubilizzato - Pelato**  
 Lieferzustand  
 Delivery state  
 Etat de livraison  
 Estado de la entrega

Produttore:  
 Hersteller/Item/Usine productrice/Producer

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

Ordine nr: **ORDINE 591**

Bestell  
 Your order  
 Commande  
 Num. de pedido

Conferma ordine nr: **MI24007170**

Werkz/Our Order/Ref nr.  
 Num. de confirmación de pedido

Avviso di Spedizione: **A-MI24005470**

Lieferanzeige/Packung list/B.L.  
 Aviso de embarque

Tipo di Elaborazione: **E+AOD**

Erschmelzungsart  
 Melting process  
 Mode d'elaboration  
 Método de fusión

Qualità: **1.4401/1.4404/316/316L**

Werkstoff/Grade/Nuance  
 Calidad

Marca: **MVAPML ( MAXIVAL )**

Markenbezeichnung  
 Brand / Nuance / Marca

Marchi di Fabbrica:

Zeichen des Lieferwerkes  
 Trade marks  
 Sigles de l'usine productrice  
 Marcas de fábrica



Punzone del Collaudatore:

Stempel des Werkstoffverständigen  
 Inspector's stamp/Poinçon de l'essayeur  
 Sello del Comprobador

**MR**

Punzonatura: **1.4401/1.4404**

Konzelchnung  
 Marking  
 Marquage / Sello

Solution annealing by process annealing 1040°C min /  
 / cooling rapidly  
 Controlled rolled  
 Reduction ratio = 9,2 : 1  
 SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 1X equivalent to EN 10277-1 Cl.3  
 "Issued in agreement with TÜV SÜD Industrie Service GMBH  
 (07/1972)"  
 "Qs approved according to PED, Annex I, Para. 4.3 by  
 Notified Body 0036"  
 "(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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  
 El material cumple de acuerdo a los requisitos

Controllo antimiscelazione con tecnica XRF/OES portatile: OK

Verwechslungsprüfung durch XRF/OES Gerät getüht: OK  
 Antimixing testing performed with XRF/OES portable: OK  
 Contrôle antimélange svr technique XRF/OES portable: OK  
 Prueba de anti mezcla con técnica XRF/OES portátil: OK

Controllo visivo e dimensionale: soddisfa le esigenze

Beichtigung und Ausmessung: ohne Beanstandung  
 Visual inspection and dimensional checks:satisfactory  
 Contrôle visuel et dimensionnel: satisfaisant  
 Inspección visual y dimensional: cumple los requisitos

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 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 BAPT Unlimited.  
 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.



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

Vicenza, <b>02/10/2024</b> VCQ008 - MEST117105	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad <b>R.BERTELLI</b>	Direzione Prodotto Produktmanagement/Product Management/Dirección Producto/Gerente de producto <b>P.MESSORI</b>	Pagina 4 di 4
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**technical SRL**  
 COPIA CONFORME ALL'ORIGINALE  
 COPY TRUE TO THE ORIGINAL

**technical SRL**  
 Quality Assurance  
 Elena Adornato  
*E. Adornato*



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
 Telefono 0444.968211 - Fax 0444.963836  
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
 Telefono 0471.924111 - Fax 0471.924497  
<https://www.valbruna-stainless-steel.com/>

**CERTIFICATO DI COLLAUDO - ABNÄHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN**

In conformità a: **EN 10204 (2004), 3.1 / ISO 10474 (2013), 3.1**  
Nach/According to/Selon/Do conformidad con

Certificato nr. **MEST070807 / 2024 /**  
Prüfung/Test/Essai/Num. de certificado

**Cilente / Besteller/Purchaser/Clien/Cliente**  
**TECHNICAL SRL**  
**VIA TOSCANA, 9**  
**20060 - VIGNATE - MI**

**Stato di fornitura :** **Laminato Solubilizzato - FINITO A**  
Lieferzustand **FREDDO**  
Delivery state  
Elat de livraison  
Estado de la entrega

**Produttore :**  
Hersteller/Item/Usine productice/Productor

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

**Ordine nr:** ORDINE 331  
Bestell  
Your order  
Commando  
Num. de pedido

**Tipo di Elaborazione:** E+AOD  
Erschmelzungsart  
Melting process  
Méde de élaboration  
Método de fusión

**Marchi di Fabbrica:**  
Zelchen des Lieferanten  
Trade marks  
Signes de l'usine productrice  
Marcas de fábrica



**Confirma ordine nr:** MI24004343

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

**Punzone del Collaudatore:**  
Stempel des Werkstuchverständigen  
Inspector's stamp/Plombon de l'essayeur  
Sello del Comprobador  
**Punzonatura:** 1.4401/1.4404  
Kennzeichnung  
Marking  
Marquage / Sello

**MR**

**Avviso di Spedizione:** A-MI24003302  
Lieferanzelge/Packing list/B.L.  
Aviso de embarque

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

**SPECIFICHE :** Anforderungen / Requirements / Exigences / Especificaciones **Note:** Aufzeichnungen / Notes / Notes / Notas

VAL STOCK W2 A/1 1.4404/316L A,CF  
 AD 2000-M. W 2 2022 1.4401 A,CF (0)  
 AD 2000-M. W 2 2022 1.4404 A,CF (1)  
 AISI . 316/316L  
 AMS-QQ-S-763 D 316/316L A,CF  
 ASME SA182 2021 S31600/03 A (2)  
 ASME SA276 2021 S31600/03 A,CF (3)  
 ASME SA479 2021 S31600/03 A (4)  
 ASTM A182 2023 S31600/03 A (5)  
 ASTM A262 PR. E 2015 316/316L (6)  
 ASTM A276 2023 S31600/03 A,CF  
 ASTM A370 2022 .  
 ASTM A479 2023A S31600/03 A  
 ASTM E10 2023 .  
 ASTM E8 2022 .  
 EN 10088 PART 3 2014 1.4401 A,CF  
 EN 10088 PART 3 2014 1.4404 A,CF  
 EN 10272 2016. 1.4401 A,CF  
 EN 10272 2016. 1.4404 A,CF  
 ISO 148-1 2016 .  
 ISO 3651-2 98 METHOD A T1  
 ISO 6506-1 2014 .  
 ISO 6892-1 2019 .  
 NACE MR0103 2015 S31600/03 A (7)  
 NACE MR0175 2015 S31600/03 A (8)  
 QQ-S-763 F 316/316L A,CF  
 ACH CO . .  
 KV L -196C . ISO 148-1

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020  
 (1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020  
 (2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.  
 (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)ANSI/NACE MR0103/ISO 17945 November 23, 2015  
 (8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015



Pos. nr. <small>Pos. nr. / Item nr. Nº. de poste Número de artículo</small>	Oggetto <small>Gegegenstand / Product description Design. del prodotto Descripción del producto</small>	Tolleranza: k12 <small>Toleranz/Allowance/Tolerance/Tolerancia</small>		Lunghezza - mm <small>Length Länge Longueur / Longitud</small>	Colata <small>Spécifie litai Coulée / Colada</small>	Pezzi <small>Stückzahl Pieces Piezas / Piezas</small>	Peso - KG <small>Gewicht Weight Poids / Peso</small>	Lotto nr. <small>Lotnr. Lot nr. Lote nr.</small>
		Dimensioni - mm <small>Abmessungen Dimension Dimension / Dimensiones</small>						
0010	Tondo	25,000		6050/ 6060	292536		119,0	229400640

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

Vicenza, <b>28/05/2024</b> VCQ052 - MEST070807	<b>Direzione Qualità</b> <small>Qualitätsmanagement/Quality Management/Gestión Calidad/Gerente de calidad</small> R.BERTELLI <i>R. Bertelli</i>	<b>Direzione Prodotto</b> <small>Produktmanagement/Product Management/Dirección Producto/Gerente de producto</small> P.MESSORI <i>P. Messori</i>	<b>Pagina</b> 1 di 4
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# 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  
<https://www.valbruna-stainless-steel.com/>

**CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN**

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

Certificato nr. **MEST070807 / 2024 /**  
 Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente  
**TECHNICAL SRL**  
**VIA TOSCANA, 9**  
**20060 - VIGNATE - MI**

Stato di fornitura: **Laminato Solubilizzato - FINITO A FREDDO**  
 Lieferzustand  
 Delivery state  
 Etat de livraison  
 Estado de la entrega

Produttore:  
 Hersteller/FromUsine producer/Produktor

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

Ordine nr: **ORDINE 331**

Bestell  
 Your order  
 Commande  
 Num. de pedido

Confirma ordine nr: **MI24004343**

Works/Our Order/Ref.nr.  
 Num. de confirmación de pedido

Avviso di Spedizione: **A-MI24003302**

Lieferanzelge/Packing list/B.L.  
 Aviso de embarque

Tipo di Elaborazione: **E+AOD**  
 Erweichungsart  
 Melting process  
 Mode d'elaboration  
 Método de fusión

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

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

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Trade marks  
 Siglas de Usine productioe  
 Marcas de fábrica



Punzone del Collaudatore:  
 Stempel des Werksechwerstündigen  
 Inspector's stamp/Plaque de l'essayeur  
 Sello del Comprobador

**MR**

Punzonatura: **1.4401/1.4404**  
 Kennzeichnung  
 Marking  
 Marquage / Sello

TEST ALLO STATO DI FORNITURA											
Test on delivery condition / Prüfung auf lieferbarem produkt / test a l'etat de fourniture / Prueba sobre el material así como entregado											
TEST	Provetta/ Probe Specimen/Eprouvette Long diam. Spess. Breda Diam. Dicke Weih Diam. Thickness Long diam. epess mm / Probeta	°C	Posiz. Saggio Position Eprouvette Ubicación	Sneramento Streckgrenze/Yield Stress Limite elastique Rp 0,2% N/mm2		Sneramento Streckgrenze/Yield Stress Limite elastique Rp 1% N/mm2		Resistenza Zugfestigkeit/Tensile strenght Resistencia a tracción Rm N/mm2		Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %	
				Valori richiesti Anforderungen/Required values Valores d'indicados / Valores requeridos		min	max	200	235	500	900
A	10	20	L	443	528	665	45	67			221
G	10	20	L	447	530	669	44	66			224

TEST ALLO STATO DI FORNITURA			
Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado			
TEST	min	max	
A	Dimensioni grano x ASTM E112		5

Charpy per ISO 148-1											
1) L=longitudinale/längs, T=transversale/quer, Q=Tangenziale/tangential											
TEST	Provetta/ Probe Specimen/Eprouvette Long diam. Spess. Breda Diam. Dicke Weih Diam. Thickness Long diam. epess mm / Probeta	°C	Posiz. Saggio Position Eprouvette Ubicación	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear	
				Valori richiesti Anforderungen/Required values Valores d'indicados / Valores requeridos		min	max	-	-	-	-
B	10X10	-196	L	170	170	164	1,592	1,400	1,455	70	68

TEST ALLO STATO DI FORNITURA per ASTM A370											
1) L=longitudinale/längs, T=transversale/quer, Q=Tangenziale/tangential											
TEST	Provetta/ Probe Specimen/Eprouvette Long diam. Spess. Breda Diam. Dicke Weih Diam. Thickness Long diam. epess mm / Probeta	°C	Posiz. Saggio Position Eprouvette Ubicación	Sneramento Streckgrenze/Yield Stress Limite elastique Rp 0,2% N/mm2		Resistenza Zugfestigkeit/Tensile strenght Resistencia a tracción Rm N/mm2		Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Erweichung Reduction of area Striction / Reducción de área RA %	
				Valori richiesti Anforderungen/Required values Valores d'indicados / Valores requeridos		min	max	210	-	517	30
C	12,5	20	L	458	-	669	47	69			



QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D			
Vicenza, 28/05/2024 VCC052 - MEST070807	Direzione Qualità Qualitätsmanagement/Quality Management/Qualität/Gerente de calidad <b>R.BERTELLI</b>	Direzione Prodotto Produktmanagement/Product Management/Dirección Producción/Gerente de producto <b>P.MESSORI</b>	Pagina 2 di 4





# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.  
 Telefono 0444.968211 - Fax 0444.968336  
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
 Telefono 0471.924111 - Fax 0471.924497  
<https://www.valbruna-stainless-steel.com/>

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

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

Certificato nr. MEST070807 / 2024 /  
 Prüfung/Test/Essai/Num. do certificado

Cliente / Besteller/Purchaser/Client/Cliente  
**TECHNICAL SRL**  
 VIA TOSCANA, 9  
 20060 - VIGNATE - MI

Stato di fornitura: Laminato Solubilizzato - FINITO A  
 Lieferzustand: FREDDO  
 Delivery state:  
 Etat de livraison:  
 Estado de la entrega:

Produttore:  
 Hersteller/Hersteller/Usine productrice/Productor

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

Ordine nr: ORDINE 331

Bestell  
 Your order  
 Commande  
 Num. de pedido

Confirma ordine nr: MI24004343

Works/Our Order/Ref. nr.  
 Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003302

Lieferanzelge/Packing Est/Bl.  
 Aviso de embarque

Tipo di Elaborazione: E+AOD

Erschmelzungsart  
 Melting process  
 Mode d'elaboration  
 Método de fusión

Qualità: 1.4401/1.4404/316/316L

Werkstoff/Grade/Nuance  
 Calidad

Marca: MVAPML ( MAXIVAL )

Markenbezeichnung  
 Brand / Numeo / Marca

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Trade marks  
 Siglas de la usina productice  
 Marcas de fábrica



Punzone del Collaudatore:

Stempel des Werkssachverständigen  
 Inspector's stamp/Polçon de l'assesseur  
 Sello del Comprobador

MR

Punzonatura: 1.4401/1.4404

Kennzeichnung  
 Marking  
 Marquage / Sello

Charpy per ISO 148-1

TEST	Provetta/ Probetas Spezimen/Éprouvette Larg./diam Spets. Dicho Dim. Dicho Widn Dim. Dicho Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probete pe Locaion Eprouvettes Utsaides H	Resilienza Kerbschlagarbeit Impact Value Resistencia / Prueba de Impacto KV <sub>2</sub>			Espansione laterale Lateral Expansion			Shear Shear		
				min	100	100	100	-	-	-	-	-
Valori richiesti Anforderungen/Required values Valores demandados / Valores requeridos				max								
F	10X10	20	L	198	201	202						
H	10X10	20	L	191	206	200						

Tensile testing according to ISO 6892-1

Impact testing according to ISO 148-1

Mechanical properties according to ASTM A370.

Brinell hardness according to ASTM E10

Tensile testing according to ASTM E8

Brinell hardness according to ISO 6506-1



## Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico												
Colore/Heat/Color	min	max	1,00	2,00	16,50	2,00	10,00	10,00	0,045	0,030	0,100	-
Schmelze/Colada	max	0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %	-
292536	0,017	0,47	1,46	16,84	2,05	0,54	10,07	0,129	0,031	0,022	0,066	-

### 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

### 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

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

Vicenza, 28/05/2024 VCQ052 - MEST070807	Direzione Qualità Qualitätsmanagement/Quality Management/Gestión Calidad/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Dirección Producto/Gerente de producto P.MESSORI	Pagina 3 di 4
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**technical SRL**  
 COPIA CONFORME ALL'ORIGINALE  
 COPY TRUE TO THE ORIGINAL

**technical SRL**  
 Quality Assurance  
 Elena Adornato  
*Elena Adornato*



# Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.l.  
 Telefono 0444.968211 - Fax 0444.963836  
 Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37  
 Telefono 0471.924111 - Fax 0471.924497  
<https://www.valbruna-stainless-steel.com/>

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

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

Certificato nr. MEST070807 / 2024 /

Nach/According to/Selon/De conformidad con

Prüfung/Res/Examination, de certificado

Cliente / Besteller/Purchaser/Clien/Ciente  
**TECHNICAL SRL**  
 VIA TOSCANA, 9  
 20060 - VIGNATE - MI

Stato di fornitura: Laminato Solubilizzato - FINITO A  
 Lieferzustand: FRETTO  
 Delivery state:  
 Etat de livraison:  
 Estado de la entrega

Produttore:  
 Hersteller/Item/Usine producer/Produktor

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

Ordine nr. ORDINE 331

Bestell  
 Your order  
 Commande  
 Num. de pedido

Confirma ordine nr: MI24004343

Works/Our Order/Ref nr,  
 Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003302

Lieferanzeige/Packing list/D.L.  
 Aviso de embarque

Tipo di Elaborazione: E+AOD

Erschmelzungsart  
 Melting process  
 Mode d'elaboration  
 Método de fusión

Qualità: 1.4401/1.4404/316/316L

Werkstoff/Grade/Nuance  
 Calidad

Marca: MVAPML ( MAXIVAL )

Markenbezeichnung  
 Brand / Nuance / Marca

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Trade marks  
 Siglas de l'usine productrice  
 Marcas de fábrica



Punzone del Collaudatore:

Stempel des Werkssachverständigen  
 Inspector's stamp/Plonçon de l'essayeur  
 Sello del Comprobador

MR

Punzonatura: 1.4401/1.4404

Kennzeichnung  
 Marking  
 Marquage / Sello

Reduction ratio = 61,1 : 1  
 Solution annealed 1040°C for 135'(total time)/water cooled.  
 SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H  
 "Issued in agreement with TÜV SÜD Industrie Service GMBH  
 (07/1972)"  
 "Qs approved according to PED, Annex I, Para. 4.3 by  
 Notified Body 0036"  
 "(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste

Die gestellten Anforderungen sind in Anlage erfüllt  
 The material has been finished in accordance with the requirements  
 Le matériel a été livré conforme aux exigences  
 El material cumple de acuerdo a los requisitos

Controllo antimiscelanza con tecnica XRF/OES portatile : OK

Verwechslungsprüfung: durch XRF/OES Gerät geführt : OK  
 Antimixing testing performed with XRF/OES portable : OK  
 Contrôle antimélanges svr technique XRF/OES portable : OK  
 Prueba de anti mezcla con técnica XRF/OES portátil: OK

Controllo visivo e dimensionale: soddisfa le esigenze

Beichtigung und Ausmessung: ohne Beanstandung  
 Visual inspection and dimensional check:satisfactory  
 Contrôle visuel et dimensionnel: satisfaisant  
 Inspección visual y dimensional: cumple los requisitos

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 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 Unlimited.  
 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.



QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D			
Vicenza, 28/05/2024 VCC052 - MEST070807	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Dirección Producto/Gerente de producto P.MESSORI	Pagina 4 di 4

**technical SRL**  
 COPIA CONFORME ALL'ORIGINALE  
 COPY TRUE TO THE ORIGINAL

**technical SRL**  
 Quality Assurance  
 Elena Adornato  
*Elena Adornato*



### SANDORI CASTINGS PVT. LTD.

Works : Survey No. 188, Gondal NH 8-B, Plot No. 1, Veraval (Shapar), Tal. Kotda Sangani, Dist. Rajkot. Gujarat (India)  
 Tel. : +91 2027 253400, 254282 Email : sales@sandoricastings.com

#### INSPECTION CERTIFICATE

THIS CERTIFICATE HAS BEEN PREPARED AS PER DIN EN 10204 3.1

TC No. : 000656 / 2 / 1.0619/WCB/WCC/LCC/LCB / KDL3 / P315

Name of Customer : TECHNICAL S.R.L  
 Certificate Confirms To : EN 10204 3.1  
 Material Specification : EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB

DC No. : P315/T - 27/02/2024  
 Invoice No. : P315 - 27/02/2024

Purchase Order No. : 000656 - 26/10/2023  
 Order Acceptance No. : 0891/23-24 - 26/10/2023

#### SPECTRO CHEMICAL ANALYSIS

Heat No.	Pouring Date	C %	SI %	Mn %	P %	S %	Cr %	NI %	Mo %	Cu %	V %	CE	HTB No.
Min.	--	0.180	0.300	0.500									
Max.	--	0.230	0.600	1.000	0.020	0.020	0.300	0.400	0.120	0.300	0.030	0.430	
KDL3	09/11/2023	0.208	0.417	0.840	0.019	0.017	0.043	0.067	0.011	0.043	0.005	0.367	03/991/23 & 03/992/23

#### MECHANICAL PROPERTIES

Heat No.	ASTM A370				ASTM A370	ASTM A370				Part Description / Drg. No.	Qty. (Dispatch)
	YS MPa 0.2 %	UTS MPa	Elgn. % GL 25mm	R.A. %	Hardness HB	Charpy V-Notch Impact Test at -46 °C (Mln. J)					
Min.	275.00	485.00	22.00	35.00		1	2	3	Avg	BODY 1½"600 x 2"150RF Cust. Drg. No. : 35-0155-LTMG Rev. No. : 00 Mach. Drg. No. : 07-0580-A Rev. No. : 02 Customer Part ID : 07-0580-LTMG PO Line No. : 2 W./Pc. : 11.66	11
Max.		600.00			237.00	27J	27J	27J	27J		
KDL3	307.29	529.59	29.92	51.62	144-150	44	36	30	36.67		

Casting Process : Melting By Electric Induction Furnace  
 Dimensional Inspection : Accepted as per respective component drawing  
 Visual Inspection : 100% Checked and Found Satisfactory as per MSS SP 55 & BS ISO 19959:2005 STD  
 Heat Treatment : Quenching At 920°C 1 Hr/Inch Soaking Water Quenched & Tempering At 680°C, 2 Hrs. Hold and Then Air Cooled  
 Surface Condition : Shot Blasted  
 Foundry Identification : Castings are identified by Heat No. / Material Grade / Foundry Logo "S" and Other Requirements of Customer

Note : Materials Are Free From Radioactive Contamination



Conclusion : Material Confirms to EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB Specification.

This alloy meets basic requirement of EN 10213/SA216/SA352 GR. : 1.0619/WCB/WCC/LCC/LCB. Casting Confirms to NACE MR0175-2003/ISO15166. Approved according to AD 2000 Merblatt W0 and Certified according to PED (2014/68/EU) by Certification body for Pressure Equipment of TUV NORD System, Notified Body Reg. No. 0045.

 JALPESH KAPADIYA ( Laboratory Incharge )	 RAJESH VACHHANI ( Engineer - QA )	 V.M.BARIYA ( Authorised Inspector )
---	--	--



### SANDORI CASTINGS PVT. LTD.

Works : Survey No. 188, Gondal NH 8-B, Plot No. 1, Veraval (Shapar), Tal. Kotda Sangani, Dist. Rajkot. Gujarat (India)  
Tel. : +91 2827 253400, 254282 Email : sales@sandoricastings.com

#### INSPECTION CERTIFICATE

THIS CERTIFICATE HAS BEEN PREPARED AS PER DIN EN 10204 3.1

TC No. : 000679 / 4 / 1.0619/WCB/WCC/LCC/LCB / XAH0 / L261

Name of Customer : TECHNICAL S.R.L	DC No. : L261/K3 - 23/02/2021
Certificate Confirms To : EN 10204 3.1	Invoice No. : L261 - 23/02/2021
Material Specification : EN 10213/SA216/SA217 GR. : 1.0619/WCB/WCC/LCC/LCB	

Purchase Order No. : 000679 - 06/11/2020  
Order Acceptance No. : 1005/20-21 - 20/11/2020

#### SPECTRO CHEMICAL ANALYSIS

Heat No.	Pouring Date	C %	SI %	Mn %	P %	S %	Cr %	NI %	Mo %	Cu %	V %	CE	HTB No.
Min.	--	0.180	0.300	0.500									
Max.	--	0.230	0.800	1.000	0.020	0.020	0.300	0.400	0.120	0.300	0.030	0.430	
XAH0	07/12/2020	0.204	0.401	0.900	0.015	0.008	0.126	0.044	0.009	0.026	0.006	0.387	03/1025/20 & 03/1026/20

#### MECHANICAL PROPERTIES

Heat No.	ASTM A370				ASTM A370	ASTM A370				Part Description / Drg. No.	Qty. (Dispatch)
	YS MPa 0.2 %	UTS MPa	Elgn. % GL 25mm	R.A. %	Hardness HB	Impact Test at -46 °C (Min. Joule)					
Min.	275.00	485.00	22.00	35.00		1	2	3	Avg	BONNET 1 1/2" X 3" Cust. Drg. No. : 35-0040-LT Rev. No. : 01 Mach. Drg. No. : 10-0362-A Rev. No. : 01 Customer Part ID : 10-0362-LS PO Line No. : 4 Wt./Pc. : 4.07	46
Max.		600.00			237.00	27J	27J	27J	27J		
XAH0	358.32	527.32	28.32	65.09	144-150	40	60	46	48.67		

Casting Process : Melting By Electric Induction Furnace  
Dimensional Inspection : Accepted as per respective component drawing  
Visual Inspection : 100% Checked and Found Satisfactory as per MSS SP 55 & BS ISO 19959:2005 STD  
Heat Treatment : Quenching At 920°C 1 Hr/Inch Socking Water Quenched & Tempering At 680°C, 2 Hrs. Hold and Then Air Cooled  
Surface Condition : Shot Blasted  
Foundry Identification : Castings are identified by Heat No. / Material Grade / Foundry Logo "S" and Other Requirements of Customer

Note : Materials Are Free From Radioactive Contamination



Conclusion : Material Confirms to EN 10213/SA216/SA217 GR. : 1.0619/WCB/WCC/LCC/LCB Specification.

This alloy meets basic requirement of EN 10213/SA216/SA217 GR. : 1.0619/WCB/WCC/LCC/LCB. Casting Confirms to NACE MR0175-2003/ISO15156. Approved according to AD 2000 Merblatt W0 and Certified according to PED (2014/68/EU) by Certification body for Pressure Equipment of TUV NORD System, Notified Body Reg. No. 0045.

*Jalpesh Kapadiya*

JALPESH KAPADIYA  
( Laboratory Incharge )

*Rajesh Vachhani*

RAJESH VACHHANI  
( Engineer - QA )

*V.M. Bariya*

V.M. BARIYA  
( Authorised Inspector )



# SANDORI CASTINGS PVT. LTD.

Works : Survey No. 188, Gondal NH 8-B, Plot No. 1, Veraval (Shapar), Tal. Kolda Sanganl, Dist. Rajkol. Gujarat (India)  
 Tel. : +91 2827 253400, 254282 Email : sales@sandoricastings.com

## INSPECTION CERTIFICATE

THIS CERTIFICATE HAS BEEN PREPARED AS PER DIN EN 10204 3.1

TC No. : 000078 / 1 / SA351 CF3M / CDJ4 / Q049

Name of Customer : TECHNICAL S.R.L.  
 Certificate Confirms To : EN 10204 3.1  
 Material Specification : ASME SA351/SA351M -23 GR. : SA351 CF3M

DC No. : Q049/K - 27/05/2024  
 Invoice No. : Q049 - 27/05/2024

Purchase Order No. : 000078 - 01/02/2024  
 Order Acceptance No. : 1311/23-24 - 02/02/2024

### SPECTRO CHEMICAL ANALYSIS

Heat No.	Pouring Date	C %	SI %	Mn %	P %	S %	Cr %	NI %	Mo %					HTB No.
Min.	--						17.000	9.000	2.000					
Max.	--	0.030	1.500	1.500	0.040	0.040	21.000	13.000	3.000					
CDJ4	09/03/2024	0.021	0.800	0.880	0.037	0.015	18.550	9.530	2.240					03/177/24

### MECHANICAL PROPERTIES

Heat No.	ASTM A370				ASTM A370	ASTM A370				Part Description / Drg. No.	Qty. (Dispatch)
	YS MPa 0.2 %	UTS MPa	Elgn. % GL 25mm	R.A. %	Hardness HB	Charpy V-Notch Impact Test at -105 °C (Min. J)					
Min.	205.00	485.00	30.00			1	2	3	Avg	NOZZLE 1½"600-1500RF ØF Cust. Drg. No. : 35-0263-37 Rev. No. : 00 Mach. Drg. No. : 42-1181-A Rev. No. : 00 Customer Part ID : 42-1181-G1 PO Line No. : 1 Wt./Pc. : 1.75	27
Max.					237.00	60J	60J	60J	60J		
CDJ4	256.58	529.39	45.36	--	144-150	116	100	92	102.67		

Casting Process : Melting By Electric Induction Furnace  
 Dimensional Inspection : Accepted as per respective component drawing  
 Visual Inspection : 100% Checked and Found Satisfactory as per MSS SP 55 & BS ISO 19959:2005 STD  
 Heat Treatment : Solution Annealed 1100°C, 1 Hour per Inch Soaking, Water Quenched  
 Surface Condition : Acid Pickled & Passivated  
 Foundry Identification : Castings are identified by Heat No. / Material Grade / Foundry Logo "S" and Other Requirements of Customer

Note : Materials Are Free From Radioactive Contamination



Conclusion : Material Confirms to ASME SA351/SA351M -23 GR. : SA351 CF3M Specification.

This alloy meets basic requirement of ASME SA351/SA351M -23 GR. : SA351 CF3M. Casting Confirms to NACE MR0175-2003/ISO15156. Approved according to AD 2000 Merblatt W0 and Certified according to PED (2014/68/EU) by Certification body for Pressure Equipment of TUV NORD System, Notified Body Reg. No. 0045.

*Jalpesh Kapadiya*

JALPESH KAPADIYA  
( Laboratory Incharge )

*Rajesh Vachhani*

RAJESH VACHHANI  
( Engineer - QA )

*V.M. Bariya*

V.M. BARIYA  
( Authorised Inspector )



# 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. MEST134665 / 2022 /  
 Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client  
**TECHNICAL SRL**  
 VIA TOSCANA, 9  
 20060 - VIGNATE - MI

Stato di fornitura: Laminato - Solubilizzato Trafilato  
 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore:  
 Hersteller/Item/Usine productrice

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

Ordine nr. ORDINE 844  
 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: MI22009429  
 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: A-MI22007572  
 Lieferanzeige/Packing list/V.L.

Marca: MVAPML ( MAXIVAL )  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L/1.4401  
 Kennzeichnung  
 Marking  
 Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
ASME SA479 2021 S31600/03 A (0) EN 10088 PART 3 2014 1.4401 A,CF EN 10088 PART 3 2014 1.4404 A,CF EN 10272 2016. 1.4401 A,CF EN 10272 2016. 1.4404 A,CF	(0)Section II Part A 2021 EDITION

Pos. nr. Pos. nr. Item nr. Nr. de poste	Objetto Gegegenstand Product description Déscrip. du produit	Tolleranza: k12 Toleranz/Allowance/Tolerance		Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Lot nr. Poids Lot nr.	Lotto nr. Lote Lot nr. Lot nr.
		Dimensioni - mm Abmessungen Dimension Dimension						
0040	Tondo	30,000		6000/ 6060	288924	3	103,0	208704100

TEST ALLO STATO DI FORNITURA Test on delivery condition Prüfung auf lieferbarem produkt test a l'etat de fourniture Prueba sobre el material así como entregado											
TEST	Provetta/ Probe Specimen/Eprouvette Larg.diam.Spass. Brake Diam. Dicke With Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Position Location Emploiment	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %	Strizione Einwärtsziehung Reduction of area Striction Z %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté HB	
											Valori richiesti Anforderungen/Required values Valeurs demandées
A	10	20	L	445	506	647	43	60			222
G	10	20	L	453	510	651	41	59			224

TEST ALLO STATO DI FORNITURA Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado				
TEST	min	max		
G	Dimensioni grano x ASTM E112			5

TEST ALLO STATO DI FORNITURA PER ASTM A370 Test allo stato di fornitura per ASTM A370										
TEST	Provetta/ Probe Specimen/Eprouvette Larg.diam.Spass. Brake Diam. Dicke With Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Position Location Emploiment	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %	Strizione Einwärtsziehung Reduction of area Striction RA %	Resilienza Kerbschlagarbeit Impact Value Resilience	Durezza Härte Hardness Dureté
D	12,5	20	L	467		650	45	70		

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D			
Vicenza, 19/12/2022 VCQ012 - MEST134665	Direzione Qualità Qualitätsmanagement/Quality Management/Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Product P.MESSORI	Pagina 1 di 3

**technical SRL**  
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 COPY TRUE TO THE ORIGINAL

**technical SRL**  
 Quality Assurance  
 Elena Adornato  
*Elena Adornato*





# Acciaierie Valbruna S.p.A.

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

Certificato nr. **MEST134665 / 2022 /**  
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client  
**TECHNICAL SRL**  
 VIA TOSCANA, 9  
 20060 - VIGNATE - MI

Stato di fornitura: **Laminato - Solubilizzato Trafilato**  
Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore:  
Hersteller/Item/Usine productrice

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

Ordine nr. **ORDINE 844**  
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: **MI22009429**  
Werks/Our Order/Ref.nr.

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

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

**MR**

Avviso di Spedizione: **A-MI22007572**  
Lieferanzeige/Packing list/B.L.

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

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

Charpy per ISO 148-1

TEST	Provetta/ Probe Specimen/Eprouvette Larg./diam. Spess. Bredth Diam. Dicks. Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Position Location Etrypoint 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2			Espansione laterale Lateral Expansion			Shear Shear		
				100	100	100	-	-	-	-	-	-
Valori richiesti <small>Anforderungen/Required values Valeurs demandées</small>		min max		100	100	100	-	-	-	-	-	-
E	10X10	20	L	217	220	215						
H	10X10	20	L	224	215	220						

### Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coulee	min - max	0,030	1,00	2,00	16,50 18,00	2,00 2,50	10,00 13,00	0,045	0,030	0,100	-	-	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Ni %	P %	S %	N %							
288924	0,014	0,58	1,55	16,65	2,01	10,02	0,027	0,025	0,061							

### 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	<b>SATISFACTORY</b>

Reduction ratio = 42,9 : 1

Material annealed 1040°C for 160'(total time)/water cooled.

**SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H**

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 matériel a été trouvé conforme aux exigences

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

Vicenza, <b>19/12/2022</b> VCQ012 - MEST134665	Direzione Qualità Quality Management/Quality Management/Gestion Qualité <b>R.BERTELLI</b>	Direzione Prodotto Product Management/Product Management/Direction Produit <b>P.MESSORI</b>	Pagina 2 di 3
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Certificato nr. MEST134665 / 2022 /

Nach/According to/Selon

Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client  
**TECHNICAL SRL**  
 VIA TOSCANA, 9  
 20060 - VIGNATE - MI

Stato di fornitura : Laminato - Solubilizzato Trafilato  
 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore :  
 Hersteller/Werk/Usine productrice

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

Ordine nr: ORDINE 844  
 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: MI22009429  
 Werkst/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: A-MI22007572  
 Lieferanzeige/Packing list/B.L.

Marca: MVAPML ( MAXIVAL )  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: 316/316L/1.4401  
 Kennzeichnung  
 Marking  
 Marquage

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.  
 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.

VAP36004402379730P30112416304G2704



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

Vicenza, 19/12/2022 VCQ012 - MEST134665	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 3 di 3
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**technical SRL**  
 Quality Assurance  
 Elena Adornato