

	CERTIFICATO DI COLLAUDO IDRAULICO, PNEUMATICO E FUNZIONALE Hydrostatic, Pneumatic and Functional Testing Certificate	VITAS TEST CERTIFICATE N° VTS18-0324 / 04.3 PAGE 1 of 1
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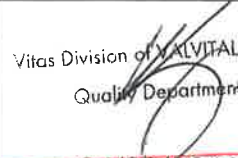
Cliente Client	QUARTER TURN RESOURCES INC	Ordine Cliente P.O. Client	Q19-20509
Progetto Project	GATE VALVES STOCK ORDER	---	---
Commessa Vitas Vitas Job	VTS18-0324	N° di Serie Valvola Valve Serial No.	B18 0324 0004 from 001 to 005 * Qty. 2 of 5
Item Venditore Item Vendor	4	Item Cliente Item Customer	4
Tipo Valvola Valve Type	TCF GATE VALVE 22" 600 Lbs RF ENDS BODY ASTM A516 Gr.70 BAR STEM	Marcatura / Tag. Marks / Tag.	04052201000 QTR STOCK

FUNCTIONAL TESTS					
TESTS	PRESSURE (BARG)	HOLDING TIME (MINUTES)	ACCEPTANCE CRITERIA	LEAKAGE FOUND	RESULTS
STEM SEAL GAS TEST (test medium: nitrogen)					
STEM SEAL GAS TEST	7	5	NO LEAKAGE	0 bubbles/min	SATISFACTORY
HYDRAULIC STEM BACKSEAT TEST					
STEM BACKSEAT	113	5	NO LEAKAGE	0 bubbles/min	SATISFACTORY
HYDRAULIC SHELL TEST					
HYDRAULIC SHELL	154	15	NO LEAKAGE	0 drops/min	SATISFACTORY
HYDRAULIC SEAT TESTS					
HYDRAULIC SEAT "A"	113	10	ISO 5208 RATE A	0 drops/min	SATISFACTORY
HYDRAULIC SEAT "B"	113	10	ISO 5208 RATE A	0 drops/min	SATISFACTORY
DOUBLE BLOCK AND BLEED	113	10	ISO 5208 RATE A	0 drops/min	SATISFACTORY
DOUBLE ISOLATION AND BLEED (DIB-2) seat A	113	10	ISO 5208 RATE A	0 drops/min	SATISFACTORY
DOUBLE ISOLATION AND BLEED (DIB-2) seat B	113	10	ISO 5208 RATE A	0 drops/min	SATISFACTORY
TORQUE TEST WITH FACTORY GEAR					
ΔP PRESSURE	103 bar				SATISFACTORY
TORQUE TEST	ACC. CRITERIA: MAX 350 N		FORCE FOUND: 101 N		SATISFACTORY
TESTING EQUIPMENT	GEAR TYPE : SZX3		HAND WHEEL: diameter 700 mm		
Normativa di Rif.:	TEST ACCORDING TO: API 6D; VITAS SPEC. BV 008 REV. 09				
Applicable code:	SEAT TEST ACCEPTANCE CRITERIA: AS PER ISO 5208 RATE A: NO LEAKAGE				
Attr. Di Collaudo	TEST BENCH NO A2 EQUIPPED WITH MANOMETERS MA 048 AND MA 049				
Testing Equipment	(Expiry date: DEC 21st, 2019)				

NOTE : Valve have been tested internally at 100%: s.n. from 003-005 *

WE DECLARE THAT VISUAL EXAMINATION HAS BEEN CARRIED OUT AT 100% ACCORDING TO ASME V ART. 9 AND VITAS SPEC. IP 021 REV. 03 WITH SATISFACTORY RESULTS.

WE DECLARE THAT DIMENSIONAL INSPECTION HAS BEEN CARRIED OUT ACCORDING TO VITAS DWGS ; ASME B16.10 ; ASME B16.5 ; ASME B16.47 A SERIES AND API 6D WITH SATISFACTORY RESULTS.

VITAS: (Supplier)	Vitas Division of VALVITALIA SPA Quality Department	CLIENT: (Customer)	
Data e Firma Date and Signature:	 24/09/2019	Data e Firma Date and Signature:	





TEST CERTIFICATE

Page 1 of 2

Code: 20916D

Customer
QUARTER TURN RESOURCES INC
P.O. BOX 1455
PONCA CITY, OK 74602 USA

Your purchase order no. Q19-20509		Date 28/12/2018		☒ Partial Order ☐ Balance Order	
Our order no. VTS18-0324		Remarks GATE VALVES STOCK ORDER			
MATERIAL TESTED					
Cust. Line	Q.ty	Part.N. Description	Test		
			☐ PSI	☒ BAR	
			Hydrostatic		
			Shell	Seats & Back	Pneum
4	1	73VV226524L3200RAA00ZS0V 006F 222 ATW BV FABRICATED THROUGH CONDUIT GATE VALVE 22" 600 Lbs - RF 125-250 AARH - BB OS&Y - FIRE SAFE DESIGN - BODY ASTM A516 Gr.70 - SEAT RINGS A350 LF2 + 0,003" E.N.P. - SEAT INSERT NYLON - SLAB ASTM A516 Gr.70 + 0,003" E.N.P. - STEM A564 Gr.630 H1150d - SPRINGS INCONEL X-750 - O' RINGS VITON GLT - GASKETS VITON GLT O' RINGS & CORRUGATED 316 + GRAPHITE - PACKING PTFE CHEVRON + BRAIDED GRAPHITE - LANTERN RING & GREASE INJECTORS - BOLTING L7M/Gr.7M - BAR STEM	156,00	114,00	0,00
Item: 4 Marcatura/TAG: 04052201000 QP2: 578146 S/n 005 - VISUAL EXAMINATION ACCORDING TO MSS SP 55 /ASME V art.9: SATISFACTORY - DIMENSIONAL EXAMINATION HAS BEEN CARRIED OUT WITH SATISFACTORY					



TEST CERTIFICATE
(DECLARATION OF CONFORMITY)

N. 16514

Page 2 of 2

Code: 20916D

Customer
QUARTER TURN RESOURCES INC
P.O. BOX 1455
PONCA CITY, OK 74602 USA

Your purchase order no. Q19-20509		Date 28/12/2018		☒ Partial Order ☐ Balance Order	
Our order no. VTS18-0324	Remarks GATE VALVES STOCK ORDER				

MATERIAL TESTED		Test		COMPONENT		Chemical Analysis											
Cust. Line	Q.ty	Part.N. Description	PSI		BAR		HEAT CODE/MATERIAL		Tensile	Yield	Elongation	Red. Of Area	Mechanical Properties			Hardness	C.E.
			Shell	Seats & Back	Hydrostatic	Seats & Back	Pneum	Seats					1 Joule	2 Joule	3 Joule		
		RESULT - ALL VALVES HAS BEEN MANUFACTURED ACCORDING TO RELEVANT VALVES SPECIFICATION. - TRIM MATERIAL AND BOLTING ARE ACCORDING TO THE P.O. MATERIAL SPECIFICATION. - ALL VALVES HAVE BEEN HYDROTESTED WITH SATISFACTORY RESULT ACCORDING TO API 6D REQUIREMENTS. - ALL MATERIAL IS ACCORDING TO NACE MR.01.75/ISO 15156															

Following Test Result Hydrostatic and Pneumatic Test	SATISFACTORY	Third Authority	Date	Client Inspector	Date	Inspector Dept. FEDERICO SALVATO	Date
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BODY FRONT/BACK
BODY SIDE A/B

20748E

CERTIFICATO DI CONTROLLO 3.1 / INSPECTION CERTIFICATE 3.1 - EN 10204:2004	
 METINVEST METINVEST TRAMETAL SPA	
(A) PROCESSO DI ELABORAZIONE / STEELMAKING PROCESS: E = ELECTRIC ; BO = BASIC OXYGEN (B) STATO DI FORNITURA / DELIVERY CONDITION: AR = GREZZO DI LAMINAZIONE / AS ROLLED ; N = LAMINAZIONE A TEMPERATURA CONTROLLATA / NORMALIZED ROLLING ; N = NORMALIZZATO / NORMALIZED at 910°C, 1,5 min/mm ; ARIA CALMA / STILL AIR ; R = RICOTTO / ANNEALED ; N+R = NORMALIZZATO + RINVENUTO / NORMALIZED + TEMPERED (C) TRATTAMENTO TERMICO DEL CAMPIONE / HEAT TREATMENT OF SAMPLE: N = 910°C, 1,5 min/mm ; ARIA CALMA / STILL AIR R = 650°C, 1,5 min/mm ; ARIA CALMA / STILL AIR (D) Ceq. 1 = C + Mn/6 ; Ceq. 2 = C + Mn/6 + (Cr + Mo + V)/5 + (Nb + Cu)/15 ; Pcm = C + Si/30 + (Mn + Cu + Cr)/20 + Ni/60 + Mo/15 + V/10 + B*5 (1) POSIZIONE / LOCATION: 1 = TESTA / TOP ; 2 = PIEDE / BOTTOM (2) POSIZIONE / LOCATION: C = CUORE / 1/2 THICKNESS ; P = PELLE / SURFACE ; D = 1/4 SPESSORE / THICKNESS (3) DIREZIONE / DIRECTION: L = LONGITUDINALE / LONGITUDINAL ; T = TRASVERSALE / TRANSVERSE (4) FORMA DEL PROVINO / SHAPE OF TEST PIECE: P = PRISMATICO / PRISMATIC ; C = CILINDRICO / CYLINDRICAL (5) ESITO PROVA DI PIEGA / RESULT: OK = COMPLYING ; NO = NOT COMPLYING	
Cliente / Customer	
N° Certificato / Certificate no. 447101	Data / Date 24/10/2018
N° Ordine Trametal / Works order 31804106	N° Ordine cliente / Customer's order 201577
DDT BOL 31819610	del / date 23/10/2018
Pratica / File no. del / date	
Prodotto / Product Lamiere / Hot rolled plates Qualità / Steel grade SAS16GR70MT/LTV Normativa / Specification ASME	

20/03/18 219000 897

ITEM	PLATE	N° INFORM. INTERNAL NUMBER	DIMENSIONI [mm]	MASSA TEORICA [t]	LOTTO BATCH NO.	PROCESSO ELAB. (A)	STATO FORNITURA LAMIERA (B)	CAMPIONE SAMPLE	TRATT. CAMPIONE (C)	CAMPIONE PWHT	N° CICLI / CYCLES	TEMPERATURA FINE °C	END TEMPERATURE	VELOCITA' RAFFREDDAMENTO °C/h	COOLING RATE	PERMANENZA Min	HOLDING TIME	TEMPERATURA (Q) °C	PERMANENZA (Q) Min	RAFFREDDAMENTO	COOLING	PERMANENZA (T) Min	HOLDING TIME	TEMPERATURA (T) °C	TEMPERATURE	RAFFREDDAMENTO	COOLING
9	1NAD020502A	1486582	40,00X3000X12000	11,30	581974	BO	N	GM078																			
11	1NAD110902A	1486604	50,00X3000X10000	11,78	581980	BO	N	GM082																			

C71/C92 COMPOSIZIONE CHIMICA DI COLATA / HEAT CHEMICAL ANALYSIS																								
C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91				
C	Mn	Si	P	S	Cu	Ni	Cr	Mo	Al	V	Nb	Ti	Sn	Ca	N	B	H	Ceq1	Ceq2	Pcm				
%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	% (D)	% (D)	% (I)				
Ordine Min																								
Ordine Max	0,18			0,020	0,005					0,030	0,040									0,43				
Ordine Min																								
Ordine Max	0,18			0,020	0,005					0,030	0,040									0,43				
SAS1670LTV Min 12.60 - 50.00		0,85	0,15																					
SAS1670LTV Max 12.60 - 50.00	0,28	1,20	0,40	0,035	0,035																			
1NAD02	0,17	1,20	0,22	0,011	0,002	0,030	0,020	0,030	<0,005	0,036	<0,005	0,020	<0,005	<0,005	0,0000	0,0060	<0,0005	0,0002	0,41	0,42	0,4			
1NAD11	0,16	1,20	0,20	0,011	0,003	0,070	0,040	0,040	<0,005	0,029	<0,005	0,021	<0,005	<0,005	0,0000	0,0060	<0,0005	0,0002	0,41	0,42	0,4			

CAMPIONE SAMPLE	PROVA DI TRAZIONE TENSILE TEST										PROVA DI RESILIENZA IMPACT TEST - CHARPY V-NOTCH TEST						PROVA DI PIEGA BEND TEST				PROVA DI DUREZZA HARDNESS TEST				PROVA DI STRIZIONE Z% TEST					
	C01	C01	C02	C03	C11	C12	Ref/Rm	C13	C14	C10	C41	C02	C01	C01	C42		C43	C02	C51	C52	C50	C01	C30	C31		C32	C53	C54		
	PROFONDITA' (1) LOCATION	POSIZIONE (2)	DIREZIONE (3)	TEMPERATURA [°C] TEST TEMPERATURE	YIELD STRENGTH [MPa]	TENSILE STRENGTH Rm [MPa]	Ref/Rm	ELONGATION [A%]	PROOF/YIELD STRENGTH Rp 0.2 [MPa]	SHAPE OF TEST PIECE	FORMA PROVINO (4)	DIREZIONE (3)	TEST TEMPERATURE	TEST TEMPERATURE	POSIZIONE (2)	LOCATION	SINGOLI VALORI [J] INDIVIDUAL VALUES	MEAN VALUE	DIREZIONE (3)	MANDREL MANDREL	MANDRINO ANGLE [°]	RESULT	ESITO (5)	POSIZIONE (2)	LOCATION	METODO TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	2% SINGOLI VALORI 2% INDIVIDUAL VALUES
ORDINE Min 11												L						0												
ORDINE Min 9												L						0												
SA51670LTV Min 20.10 - 120.00				20		485		21,0	260																					
SA51670LTV Max 20.10 - 120.00				20		620																								
SA51670LTV Min 25.10 - 50.00												L	-40					20												
GM078	40,00	2	D	T	20	533		36,4	389	C	10,00	T	-50	D	94 91 101	95									HB	156 159 157	157			
GM078	40,00	2											-50	D	185 205 222	204														
GM082	50,00	2	D	T	20	529		35,1	385	C	10,00	T	-50	D	93 95 91	93									HB	161 165 157	161			
GM082	50,00	2											-50	D	202 199 194	198														

ASME SA-370 FIG. 3 AND FIG. 10 (FIG. 11 a 10x10mm) - SAMPLE TAKEN AFTER PLATE HEAT TREATMENT

D02-D50 CONTROLLO ULTRASONORO / ULTRASONIC EXAMINATION

D02 APPARECCHIATURA EQUIPMENT		D03 N° SERIE SERIAL NO		D04 CONDIZIONI SUPERFICIALI SURFACE CONDITIONS		D05 ACCOPIANTE COUPLANT		D06 MODALITÀ OPERATIVE PROCEDURE		D07 TARATURA CALIBRATION	
GILARDONI RDG450		RDG450-450-140185TC		GREZZO DI LAMINAZIONE AS ROLLED		ACQUA WATER		IN ACCORDO ALLA SPECIFICA ACCORDING TO SPECIFICATION		IN ACCORDO ALLA SPECIFICA ACCORDING TO SPECIFICATION	
B07 LAMIERA PLATE	D08 SONDE PROBE	D09 DIAMETRO DIAMETER MM	D10 FREQUENZA FREQUENCY MHZ	D11 ANGOLO Angle °	D12 NORMA DI RIPERIMENTO STANDARD SPECIFICATION	D13 CLASSE DI ACCETTABILITÀ ACCEPTANCE SPECIFICATIONS	D14 ESITO RESULT	D15 INDICAZIONI INDICATIONS	D16 RETICOLO RETICLE	D17 BORDI EDGES	
1NAD020502A		mm 25	2,25 MHz	0	ASTM A578 LIV. A		OK	NO INDICATIONS FOUND	mm 225x225	50	
1NAD110902A		mm 25	2,25 MHz	0	ASTM A578 LIV. A		OK	NO INDICATIONS FOUND	mm 225x225	50	
D18 NOTE REMARKS						D19 ENTE ISPETTIVO INSPECTOR				D20 FIRMA SIGNATURE	
										METINVEST TRAMETAL S.p.A. F. Andrian III Liv. EN ISO 9742	

Z01 ITEM	TOLLERANZA DI SPESSORE TOLERANCE ON THICKNESS	TOLLERANZE DI LARGHEZZA TOLERANCE ON WIDTH	TOLLERANZE DI LUNGHEZZA TOLERANCE ON LENGTH	CONDIZIONI SUPERFICIALI SURFACE FINISH	PLANARITÀ FLATNESS
9	EN 10029 CL.B	-0+100 MM	-0+200 MM	EN 10163/2 CL B2	EN 10029 CL. N
11	EN 10029 CL.B	-0+100 MM	-0+200 MM	EN 10163/2 CL B2	EN 10029 CL. N

CERTIFICHIAMO che le lamiere elencate sono conformi alla prescrizione dell'ordine, che i controlli della marcatura, dell'aspetto superficiale e dimensionale hanno dato esito positivo.
WE CERTIFY that the above mentioned plates are consistent with the order prescriptions: marking, inspection and measurement without objection.
DICHIARIAMO CHE LE LAMIERE SONO STATE CONTROLLATE IN ACCORDO ALLA NORMATIVA VIGENTE E CHE LE RADIAZIONI IONIZZANTI NON ECCEDONO IL VALORE DEL FONDO NATURALE.
WE DECLARE THAT THE PLATES WERE CONTROLLED ACCORDING TO STANDARD AND RADIATION DO NOT EXCEED THE NATURAL RADIATION.

Z06 HARDNESS IN ACC. TO NACE MR 0175 / ISO15156		
Z07	Z03 ENTE COLLAUDO / INSPECTION BODY	Z02
PRODUCED FROM CONTINUOUS CAST SLAB AND HAVE A MINIMUM REDUCTION RATIO OF 3 TO 1. ACCORDING TO ASME II PART A ED. 2017. FULLY KILLED, FINE GRAIN STEEL. Value of Mn maximum in derogation permitted up to 1.50% Plates acc. to PED 2014/68/EU	TIMBRO DELL'ISPETTORE STAMP OF THE INSPECTION REPRESENTATIVE	METINVEST TRAMETAL S.p.A. F. Andrian CQ Manager



8160451÷452

Order N° 31804106 - Customer Order N° 201577

- DDT N° 31819610 - Certificate N° 447101 - 2 /

OSSITAGLIO S.p.A. Via Ottavio Ricci, 13/14 43030 PAROLA (PR)	ULTRASONIC TEST CERTIFICATE	ALLEGATO 2
		PROCEDURA 4
		REV. 0

CERTIFICATO/CERTIFY N°190042

DATA/DATE : 20-03-2019

 CUSTOMER **VALVITALIA**
ORDER: A190000897 del 20-03-2019

PROCEDURE: UNI EN 10160

ACCEPTABILITY: UNI EN 10160 class S2E3

Lamiera/Sheet: 30x2500x12000	Materiale/Material : A516 gr70	Heat / Colata : A011202
* Vedi riferimento riepilogo certificazioni e controlli UT / See reference certification and UT control summary Pos Item 8		
Lamiera/Sheet: 40x3000x12000	Materiale/Material : A516 gr70	Heat / Colata : 1NAD02
* Vedi riferimento riepilogo certificazioni e controlli UT / See reference certification and UT control summary Pos Item 1-2		
Lamiera/Sheet: 50x3000x10000	Materiale/Material : A516 gr70	Heat / Colata : 1NAD11
* Vedi riferimento riepilogo certificazioni e controlli UT / See reference certification and UT control summary Pos Item 3-6		

SCANNING DIRECTION

 INSTRUMENT : KRAUTKRAMER Couplant Water ☒ Oil Tylose paste

Type USM 32

Serial Nr.36066 - 5704

REFERENCE : Surface condition

 As rolled ☒

As forged

PROBE Type : Straight

Frequency : 2Mhz D.24

EXAMINATION RESULTS

REMARKS :

 Conform ☒

 Not Conform ☐

 UT effectuated by:
 OSSITAGLIO SPA

Sign Operator 2° level

Patteri

Certificate n° 169

Reference : SNT - TC - 1A

Sign Service Quality control

 Crasta Daniele
 RSG e RSGA

 OSSITAGLIO S.p.A.
 Via O. Ricci, 13/14 - 43030 PAROLA (PR)
 P.IVA 04592380345






Riepilogo Certificazioni e Controlli UT / Certifications and UT Controls summary

Cliente / Customer:	Valvitalia S.p.a. Vitas division	Ord N°	A190000897
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Pos. Item	Quantità / Quantity		Colata / Heat	Descrizione / Description	Materiale/ Material	Disegno / Draw
1	N° pezzi/ n° pieces	10	1NAD02	1990x752x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CA01-6F-222-B
2	N° pezzi/ n° pieces	10	1NAD02	1992x130x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CB01-6F-222-C
3	N° pezzi/ n° pieces	5	1NAD11	668x130x50* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CD01-6F-222-B
4	N° pezzi/ n° pieces	20	1NAD02	1042x890x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	P355NH	CE01-6F-222-B
5	N° pezzi/ n° pieces	20	1NAD02	890x267x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	P355NH	CF01-6F-222-B
6	N° pezzi/ n° pieces	5	1NAD11	1010x362x50* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CG01-6F-222-B
8	N° pezzi/ n° pieces	10	A011202	130x100x30* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	TJ01-6F-009-A
9	N° pezzi/ n° pieces	5	1NAC86	900x365x65* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	F2A-6F-222-A
10	N° pezzi/ n° pieces	5	1NAC86	1322x622x90* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	F5B-6F-222-F-A

Operatore Qualificato/ Sign Operator 2° level Ossitaglio Spa Patten Roberto	Data/ Date : 20 03-2019	Timbro Ossitaglio / Company stamp OSSI TAGLIO S.p.A. Via O. Ricci 13/14 12052 VIGORLA (CN) P.IVA 01899380745	Responsabile della Qualità Ossitaglio Sign Service Quality control Ossitaglio
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207486

BONNET

CERTIFICATO DI CONTROLLO 3.1 / INSPECTION CERTIFICATE 3.1 - EN 10204:2004

METINVEST
METINVEST TRAMETAL SPA

Società per azioni con socio unico soggetta a direzione e coordinamento di Metinvest B.V.
Registered office: Via XII Ottobre, 3 - 16121 Genova, Italy
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Cap. Soc. Euro 300.120.000,00 i.v.
C.F., P.IVA e Iscr. Reg. Imp. GE 05956610965 - REA 417720/GE
http://trametal.metinvestholding.com

N° Certificato / Certificate no. 447800
Data / Date 31/10/2018

N° Ordine Trametal / Works order 31804235
N° Ordine cliente / Customer's order 161F/18

DDT del / date 30/10/2018

Pratica / File no. del / date

Prodotto / Product Lamiere / Hot rolled plates
Qualità / Steel grade A516GR70MT/LTV
Normativa / Specification ASTM

Clienta / Customer
OSSITAGLIO SPA
VIA OTTAVIO RICCI 13/14 FRAZ. PAROLA
43030 FONTANELLATO 43030 IT
PR ITALIA

Marchatura di prodotto / Marking of the product
LAMIERA/ORDINE/N° INFORMAMENTO/DIMENSIONI/QUALITÀ/MARCHIO DEL PRODUTTORE
PLATE/ORDER/INTERNAL N°/DIMENSIONS/STEEL GRADE/MANUFACTURER'S MARK

20/03/19 A190000 597

ITEM	807	807	809/811	812	807	804	800	805	800	805 PWHT	800	805 Q+T
	LAMIERA PLATE	N° INFORM. INTERNAL NUMBER	DIMENSIONI [mm]	MASSA TEORICA [t]	LOTTO	STATO FORNITURA LAMIERA (B)	CAMPIONE SAMPLE	TRATT. CAMPIONE (C)	CAMPIONE PWHT	TEMPERATURA INIZIO °C	TEMPERATURA FINE °C	PERMANENZA [h]
1	INAC861003A	1488221	65.00X2450X10000	12,50	583423	BO	N	GM553				
3	INAC861002A	1488201	70.00X2450X8000	10,77	583422	BO	N	GM552				

C71/C92 COMPOSIZIONE CHIMICA DI COLATA / HEAT CHEMICAL ANALYSIS

COLATA HEAT	C	Mn	Si	P	S	CU	NI	CR	MO	AL	V	Nb	TI	Sn	Ca	N	B	H	Ce	Co	Fe
AS1670LTV Min 50,10 - 100,00	1,20	0,15																			
AS1670LTV Max 50,10 - 100,00	0,27	1,20	0,40	0,025	0,025																
Ordine Min	0,85	0,15																			
Ordine Max	0,27	1,20	0,40	0,035	0,035																
Ordine Min	0,85	0,15																			
Ordine Max	0,27	1,20	0,40	0,035	0,035																
INAC86	0,16	1,20	0,20	0,015	0,002	0,040	0,020	0,040	<0,005	0,031	<0,005	0,023	<0,005	<0,005	0,0000	0,0060	0,0005	0,0002	0,40	0,41	0,25

PROVA DI TRAZIONE TENSILE TEST	PROVA DI RESILLENZA IMPACT TEST - CHARPY V-NOTCH TEST	PROVA DI PIEGA BEND TEST	PROVA DI DUREZZA HARDNESS TEST	PROVA DI STRIZIONE Z% TEST
CAMPIONE SAMPLE	TEMPERATURA (1) °C	TEMPERATURA (2) °C	TEMPERATURA (3) °C	TEMPERATURA (4) °C
AS1670LTV Min 20,10 - 120,00	20	485	21,0	260

C00	CAMPIONE SAMPLE	PROVA DI TRAZIONE TENSILE TEST										PROVA DI RESILIENZA IMPACT TEST - CHARPY V-NOTCH TEST						PROVA DI PIEGA BEND TEST				PROVA DI DUREZZA HARDNESS TEST				PROVA DI STRIZIONE 2% TEST				
		C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29
		POSIZIONE (1) LOCATION	POSIZIONE (2) LOCATION	POSIZIONE (3) ORIENTATION	TEMPERATURA (1) TEST TEMPERATURE	TEMPERATURA (2) TEST TEMPERATURE	TEMPERATURA (3) ORIENTATION	TEMPERATURA (4) DIRECTION	TEMPERATURA (5) DIRECTION	TEMPERATURA (6) DIRECTION	TEMPERATURA (7) DIRECTION	TEMPERATURA (8) DIRECTION	TEMPERATURA (9) DIRECTION	TEMPERATURA (10) DIRECTION	TEMPERATURA (11) DIRECTION	TEMPERATURA (12) DIRECTION	TEMPERATURA (13) DIRECTION	TEMPERATURA (14) DIRECTION	TEMPERATURA (15) DIRECTION	TEMPERATURA (16) DIRECTION	TEMPERATURA (17) DIRECTION	TEMPERATURA (18) DIRECTION	TEMPERATURA (19) DIRECTION	TEMPERATURA (20) DIRECTION	TEMPERATURA (21) DIRECTION	TEMPERATURA (22) DIRECTION	TEMPERATURA (23) DIRECTION	TEMPERATURA (24) DIRECTION	TEMPERATURA (25) DIRECTION	
	AS1670LTV Max 20.10 - 120.00																													
	AS1670LTV Min 50.10 - 75.00																													
	ORDINE Min 1																													
	ORDINE Min 3																													
	GM552	70,00	2	D	T	20																								
	GM552	70,00	2																											
	GM553	65,00	2	D	T	20																								
	GM553	65,00	2																											

49

ASME SA-370 FIG. 3 AND FIG. 10 (FIG. 11 a 10x10mm) - SAMPLE TAKEN AFTER PLATE HEAT TREATMENT

201

ASME SA-370 FIG. 3 AND FIG. 10 (FIG. 11 a 10x10mm) - SAMPLE TAKEN AFTER PLATE HEAT TREATMENT

Z01		TOLLERANZA DI SPESSORE TOLERANCE ON THICKNESS		TOLLERANZA DI LARGHEZZA TOLERANCE ON WIDTH		TOLLERANZA DI LUNGHEZZA TOLERANCE ON LENGTH		CONDIZIONI SUPERFICIALI SURFACE FINISH		PLANARITÀ FLATNESS	
ITEM		TOLLERANZA DI SPESSORE TOLERANCE ON THICKNESS		TOLLERANZA DI LARGHEZZA TOLERANCE ON WIDTH		TOLLERANZA DI LUNGHEZZA TOLERANCE ON LENGTH		CONDIZIONI SUPERFICIALI SURFACE FINISH		PLANARITÀ FLATNESS	
1		EN 10029 CL.B		-0+100 MM		-0+200 MM		EN 10163/2 CL.B2		EN 10029 CL. N	
3		EN 10029 CL.B		-0+100 MM		-0+200 MM		EN 10163/2 CL.B2		EN 10029 CL. N	

CERTIFICHIAMO che le lamiere elencate sono conformi alla prescrizione dell'ordine, che i controlli della marcatura, dell'aspetto superficiale e dimensionale hanno dato esito positivo.
WE CERTIFY that the above mentioned plates are consistent with the order prescriptions: marking, inspection and measurement without objection.
DICHIARIAMO CHE LE LAMIERE SONO STATE CONTROLLATE IN ACCORDO ALLA NORMATIVA VIGENTE E CHE LE RADIAZIONI IONIZZANTI NON ECCEDONO IL VALORE DEL FONDO NATURALE.
WE DECLARE THAT THE PLATES WERE CONTROLLED ACCORDING TO STANDARD AND RADIATION DO NOT EXCEED THE NATURAL RADIATION.

Z06		HARDNESS IN ACC. TO NACE MR 0175 / ISO15156	
Z07		Z03 ENTE COLLAUDO / INSPECTION BODY	
PRODUCED FROM CONTINUOUS CAST SLAB AND HAVE A MINIMUM REDUCTION RATIO OF 3 TO 1. ACC. TO ASTM E8. 2017, FULLY KILLED, FINE GRAIN STEEL. Value of Mn maximum in derogation permitted up to 1.50% Plates acc. to PED 2014/68/EU		TIMBRO DELL'ISPETTORE STAMP OF THE INSPECTION REPRESENTATIVE	
		METINVEST TRAMETAL S.p.A. F. Andrian CQ Manager	

8160453



OSSITAGLIO S.p.A. Via Ottavio Ricci, 13/14 43030 PAROLA (PR)	ULTRASONIC TEST CERTIFICATE	ALLEGATO 2
		PROCEDURA 4
		REV 0

CERTIFICATO/CERTIFY N°190042
DATA/DATE : 20-03-2019
CUSTOMER VALVITALIA
ORDER: A190000897 del 20-03-2019
PROCEDURE: UNI EN 10160
ACCEPTABILITY: UNI EN 10160 class S2E3

Lamiera/Sheet: 40x3000x12000	Materiale/Material : P355NH	Heat / Colata : 1NAD02
* Vedi riferimento riepilogo certificazioni e controlli UT / See reference certification and UT control summary Pos Item 4-5		
Lamiera/Sheet: 65x2450x10000	Materiale/Material : A516 gr70	Heat / Colata : 1NAC86
* Vedi riferimento riepilogo certificazioni e controlli UT / See reference certification and UT control summary Pos Item 9		
Lamiera/Sheet: 90x2450x6000	Materiale/Material : A516 gr70	Heat / Colata : 1NAC86
* Vedi riferimento riepilogo certificazioni e controlli UT / See reference certification and UT control summary Pos Item 10		

SCANNING DIRECTION

INSTRUMENT : KRAUTKRAMER	Couplant	Water	☒ Oil	Tylose paste
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Type USM 32
Serial Nr.36066 - 5704
REFERENCE : Surface condition
As rolled ☒
As forged
PROBE Type : Straight
Frequency : 2Mhz D.24
EXMINATION RESULTS
REMARKS :
Conform ☒
Not Conform ☐
UT effectuated by:
OSSITAGLIO SPA
Sign Operator 2° level
Patteri
Certificate n° 169
Reference : SNT - TC - 1A
Sign Service Quality control
Crasia Daniele
RSQ e RSQA
OSSITAGLIO S.p.A.
 Via O. Ricci, 13/14 - 43030 PAROLA (PR)
 Tel. 0521/800000

Riepilogo Certificazioni e Controlli UT / Certifications and UT Controls summary

Cliente / Customer:	Valvitalia S.p.a. Vitas division	Ord N°	A190000897
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Pos Item	Quantità / Quantity		Colata / Heat	Descrizione / Description	Materiale/ Material	Disegno / Draw
1	N° pezzi/ n° pieces	10	1NAD02	1990x752x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CA01-6F-222-B
2	N° pezzi/ n° pieces	10	1NAD02	1992x130x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CB01-6F-222-C
3	N° pezzi/ n° pieces	5	1NAD11	668x130x50* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CD01-6F-222-B
4	N° pezzi/ n° pieces	20	1NAD02	1042x890x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	P355NH	CE01-6F-222-B
5	N° pezzi/ n° pieces	20	1NAD02	890x267x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	P355NH	CF01-6F-222-B
6	N° pezzi/ n° pieces	5	1NAD11	1010x362x50* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CG01-6F-222-B
8	N° pezzi/ n° pieces	10	A011202	130x100x30* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	TJ01-6F-009-A
9	N° pezzi/ n° pieces	5	1NAC86	900x365x65* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	F2A-6F-222-A
10	N° pezzi/ n° pieces	5	1NAC86	1322x622x90* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	F5B-6F-222-F-A

Operatore Qualificato/ Sign Operator 2° level Ossitaglio Spa Patten Roberto	Data/ Date : 20 03-2019	Timbro Ossitaglio / Company stamp Ossitaglio S.p.A. Via O. Rinaldi 13/11 12052 ARONA (VC) P.IVA 01355330033	Responsabile della Qualità Ossitaglio Sign Service Quality Control Ossitaglio
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body pipe

 ASFO S.p.A. 36010 Chiuppano VI - Italy 45030 Villamarzana RO - Italy www.fomasgroup.com		TEST REPORT EN 10204 3.1		No. 01195250 Rev. 0 Page 1 of 2
CUSTOMER: VALVITALIA SPA			ORDER: A190000917 21/03/2019	
MATERIAL: A350LF2 CL.1	STANDARD: ASTM Ed.2015		SPECIFICATION: 0D6 REV.2	
STATE OF DELIVERY: Normalizing			ASFO JOB: 190880	

EXTENT OF MATERIAL DELIVERY

ITEM	Asfo Comm.	Q.ty	ARTICLE	Serial Nbr.	HEAT	TEST
1	S028APC00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-02	107438	192760
1	S028APD00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-03	264529	192761
1	S028APD00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-04	264529	192761
1	S028APD00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-05	264529	192761
1	S028APD00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-06	264529	192761
1	S028APD00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-07	264529	192761
1	S028APD00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-08	264529	192761
1	S028APD00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-09	264529	192761
1	S028APD00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-10	264529	192761

HEAT TREATMENT

Type	Heat Rate	Temperature	Holding Time	Cooling
Normalizing	70 °C/h	910 °C	270 min.	Still Air

LADLE ANALYSIS

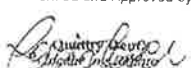
Steelmaker : DUFERDOFIN-NUCOR SRL

Heat : 107438

Method of manufacture : EAF + Fully Killed/fine grained + VD

C [%]	Mn [%]	P [%]	S [%]	Si [%]	Ni [%]	Cr [%]	Mo [%]	V [%]	Nb [%]	Cu [%]	(1) [%]	Cr+Mo [%]	(2) [%]
0,16	1,23	0,0150	0,0020	0,26	0,09	0,10	0,020	0,0010	0,0010	0,16	0,41	0,12	0,37

ASFO declares that the products supplied are in compliance with the requirements of the order

DATE 19 Jun 2019	Performed by  Quality Department Olimpia Golf Club, Albano	ASFO S.P.A.	Verified and Approved by  INSPECTORS	COMPANY WITH MANAGEMENT SYSTEM CERTIFIED BY DNV GL = ISO 9001 = = ISO 14001 = = OHSAS 18001 =
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 ASFO S.p.A. 36010 Chiuppano VI - Italy 45030 Villamarzana RO - Italy www.fomasgroup.com	TEST REPORT EN 10204 3.1		No. 01195250 Rev. 0 Page 2 of 2
CUSTOMER: VALVITALIA SPA		ORDER: A190000917 21/03/2019	
MATERIAL: A350LF2 CL.1	STANDARD: ASTM Ed.2015	SPECIFICATION: 0D6 REV.2	
STATE OF DELIVERY: Normalizing		ASFO JOB: 190880	

Steelmaker : ACCIAIERIE VENETE S.P.A.

Heat : 264529

Method of manufacture : EAF + Fully Killed/fine grained + VD

C [%]	Mn [%]	P [%]	S [%]	Si [%]	Ni [%]	Cr [%]	Mo [%]	V [%]	Nb [%]	Cu [%]	(1) [%]	Cr+Mo [%]	(2) [%]
0,17	1,24	0,0100	0,0020	0,23	0,10	0,13	0,028	0,0040	0,0040	0,12	0,42	0,15	0,53

 (1) $Ceq = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$

 (2) $Cu + Ni + Cr + Mo + V$

TENSILE TEST

Test Requested	σ Prov.[mm]	Leng.[mm]	Direc. Tang	Temp.[°C]	Rp0,2% [MPa]	R [MPa]	A [%]	Z [%]
	12,50	50,00		20	min. 275,0	485,0-655,0	min. 22,0	min. 30,0
192760	12,50	50,00	Tang	20	320,0	545,0	31,0	70,0
192761	12,50	50,00	Tang	20	325,0	549,0	32,0	73,0

IMPACT TEST

Test Requested	Type KV	Dir. Tang	Temp [°C]	Av.Ener. [J]	Sing.Ener. [J]
			-46	min. 28	min. 22
192760	KV	Tang	-46	108	106-104-115
192761	KV	Tang	-46	119	125-117-116

HARDNESS TEST

Test Requested	Type HBW 10 3000	Range HBW 10 3000
		0-190
192760	HBW 10 3000	158-158
192761	HBW 10 3000	155-155

NOTES:

Material comply with technical specification and purchase order.

Quality Assurance System in accordance with the Pressure Equipment Directive 2014/68/UE (PED) (TÜV certificate No. DGR-0036-QS-W 004/2004/MUC).

8161062÷063



ASFO declares that the products supplied are in compliance with the requirements of the order

DATE	Performed by	ASFO S.P.A.	Verified and Approved by	INSPECTORS	COMPANY WITH MANAGEMENT SYSTEM CERTIFIED BY DNV GL = ISO 9001 = = ISO 14001 = = OHSAS 18001 =
19 Jun 2019	 Quality Department Olimpia Golf S.p.A. Albino		 Inspector		

BODY PIPE

 ASFO S.p.A. 36010 Chluppano VI - Italy 45030 Villamarzana RO - Italy www.fomasgroup.com	TEST REPORT EN 10204 3.1	No. 01193467 Rev. 0 Page 1 of 2
CUSTOMER: VALVITALIA SPA		ORDER: A190000917 21/03/2019
MATERIAL: A350LF2 CL.1	STANDARD: ASTM Ed.2015	SPECIFICATION: 0D6 REV.2
STATE OF DELIVERY: Normalizing		ASFO JOB: 190880

EXTENT OF MATERIAL DELIVERY

ITEM	Asfo Comm.	Q.ty	ARTICLE	Serial Nbr.	HEAT	TEST
1	S028APB00	1	TUBO CORPO dwg.CC01-6F-222-R-A 880x518x551 code 73FB2260000D6AARAS000D0V OdV VTS18-0324-4	A190000917-1-01	107437	192759

HEAT TREATMENT

Type	Heat Rate	Temperature	HoldingTime	Cooling
Normalizing	70 °C/h	910 °C	270 min.	Still Air

LADLE ANALYSIS

Steelmaker : DUFERDOFIN-NUCOR SRL

Heat : 107437

Method of manufacture : EAF + FullyKilled/fine grained + VD

C [%]	Mn [%]	P [%]	S [%]	Si [%]	Ni [%]	Cr [%]	Mo [%]	V [%]	Nb [%]	Cu [%]	(1) [%]	Cr+Mo [%]	(2) [%]
0,16	1,27	0,0140	0,0020	0,25	0,08	0,09	0,010	0,0010	0,0020	0,15	0,41	0,01	0,24

 (1) $Ceq = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15$

 (2) $Cu + Ni + Cr + Mo + V$

TENSILE TEST

Test Requested	σ Prov.[mm]	Leng.[mm]	Direc. Tang	Temp.[°C]	Rp0.2% [MPa]	R [MPa]	A [%]	Z [%]
192759	12,50	50,00	Tang	20	min. 275,0	485,0-655,0	min. 22,0	min. 30,0
	12,50	50,00	Tang	20	323,0	541,0	31,0	72,0

IMPACT TEST

Test Requested	Type KV	Dir. Tang	Temp [°C]	Av.Ener. [J]	Sing.Ener. [J]
192759	KV	Tang	-46	min. 28	min. 22
	KV	Tang	-46	104	95-105-111

ASFO declares that the products supplied are in compliance with the requirements of the order

DATE	Performed by	ASFO S.P.A.	Verified and Approved by	INSPECTORS	COMPANY WITH MANAGEMENT SYSTEM CERTIFIED BY DNV GL
11 Jul 2019	 Quality Department Olimpia Gatti Ing. Alberto		 Quality Department Olimpia Gatti Ing. Alberto		■ ISO 9001 = ■ ISO 14001 = ■ OHSAS 18001 =

 ASFO S.p.A. 36010 Chluppano VI - Italy 45030 Villamarzana RO - Italy www.fomasgroup.com		TEST REPORT EN 10204 3.1		No. 01193467 Rev. 0 Page 2 of 2
CUSTOMER: VALVITALIA SPA			ORDER: A190000917 21/03/2019	
MATERIAL: A350LF2 CL.1	STANDARD: ASTM Ed.2015	SPECIFICATION: 0D6 REV.2		
STATE OF DELIVERY: Normalizing			ASFO JOB: 190880	

HARDNESS TEST

Test Requested	Type HBW 10 3000	Range HBW 10 3000 0-190
192759	HBW 10 3000	162-162

NOTES:

Material comply with technical specification and purchase order.

Quality Assurance System in accordance with the Pressure Equipment Directive 2014/68/UE (PED) (TÜV certificate No. DGR-0036-QS-W 004/2004/MUC).

8161584



ASFO declares that the products supplied are in compliance with the requirements of the order

DATE 11 Jul 2019	Performed by Quality Department Olimpia Gatti Ing. Alberto	ASFO S.P.A.	Verified and Approved by 	INSPECTORS	COMPANY WITH MANAGEMENT SYSTEM CERTIFIED BY DNV GL = ISO 9001 = = ISO 14001 = = OHSAS 18001 =
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SLAB

20748E

CERTIFICATO DI CONTROLLO 3.1 / INSPECTION CERTIFICATE 3.1 - EN 10204:2004	
 METINVEST METINVEST TRAMETAL SPA	
(A) PROCESSO DI ELABORAZIONE / STEELMAKING PROCESS: E = ELETTRIC / BO = BASIC OXYGEN (B) STATO DI FORNITURA / DELIVERY CONDITION: AR = GREZZO DI LAMINAZIONE / AS ROLLED; N = LAMINAZIONE A TEMPERATURA CONTROLLATA / NORMALIZING ROLLING; R = NORMALIZZATO / NORMALIZED at 910°C, 1.5 min/mm; ARIA CALMA / STILL AIR; R = RICOTTO / ANNEALED; N+R = NORMALIZZATO + RINVENUTO / NORMALIZED + TEMPERED (C) TRATTAMENTO TERMICO DEL CAMPIONE / HEAT TREATMENT OF SAMPLE: N = 910°C, 1.5 min/mm; ARIA CALMA / STILL AIR R = 650°C, 1.5 min/mm; ARIA CALMA / STILL AIR (D) Ceq ₁ = C + Mn/6; Ceq ₂ = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15; Pcm = C + Si/30 + (Mn + Cu + Cr)/20 + Ni/60 + Mo/15 + V/10 + B*5 (1) POSIZIONE / LOCATION: 1 = TESTA / TOP; 2 = PIEDE / BOTTOM (2) POSIZIONE / LOCATION: C = CUORE / 1/2 THICKNESS; P = PELLE / SURFACE; D = 1/4 SPESSORE / THICKNESS (3) DIREZIONE / DIRECTION: L = LONGITUDINALE / LONGITUDINAL; T = TRASVERSALE / TRANSVERSE (4) FORMA DEL PROVINO / SHAPE OF TEST PIECE: P = PRISMATICO / PRISMATIC; C = CILINDRICO / CYLINDRICAL (5) ESITO PROVA DI PIEGA / RESULT: OK = COMPLYING; KO = NOT COMPLYING	
408 Cliente / Customer Ossitaglio Spa VIA OTTAVIO RICCI 13/14 FRAZ. PAROLA 43030 FONTANELATO PR ITALY	
406 Marcatura di prodotto / Marking of the product LAMIERA/ORDINE/N° INFORMAMENTO/DIMENSIONI/QUALITÀ/MARCHIO DEL PRODUTTORE PLATE/ORDER/INTERNAL N°/DIMENSIONS/STEEL GRADE/MANUFACTURER'S MARK	
407 N° Certificato / Certificate no. 447771	
407 Data / Date 31/10/2018	
407 N° Ordine Trametal / Works order 31804244	
407 N° Ordine cliente / Customer's order 161F/18	
DDT del / date BOL 31820146 30/10/2018	
Pratica / File no. del / date	
Prodotto / Product Lamiere / Hot rolled plates Qualità / Steel grade AS16GR70MT/LTV Normativa / Specification ASTM	

20/03/19 A 190000897

807 B07		807		809/811		812		807		804		800		805 PWHT		800		805 Q+T		800		805	
ITEM	LAMIERA PLATE	N° INFORM. INTERNAL NUMBER	DIMENSIONI [mm] DIMENSIONS	MASSA TEORICA [t] THEORETICAL WEIGHT	LOTTO BATCH NO.	PROCESSO ELAB. (A) STEELMAKING PROCESS	STATO FORNITURA LAMIERA (B) DELIVERY CONDITION	CAMPIONE SAMPLE	TRATT. CAMPIONE (C) HEAT TREATMENT	CAMPIONE PWHT SAMPLE	TEMPERATURA FINE °C END TEMPERATURE	VELOCITA' RAFFREDDAMENTO °C/h COOLING RATE	PERMANENZA Min HOLDING TIME	TEMPERATURA TRATTAMENTO °C TEMPERATURE TREATMENT	VELOCITA' RISCALDO °C/h HEATING RATE	TEMPERATURA INIZIO °C BEGINNING TEMPERATURE	CAMPIONE PWHT SAMPLE	N° CICLI / CYCLES	PERMANENZA (Q) Min HOLDING TIME	TEMPERATURA (Q) °C TEMPERATURE	CAMPIONE Q+T SAMPLE	PERMANENZA (T) Min HOLDING TIME	TEMPERATURA (T) °C TEMPERATURE
2	1NAC860801A	1488197	90.00X2450X6000	10,39	583427	BO	N	GM557															
2	1NAC860802A	1488191	90.00X2450X6000	10,39	583428	BO	N	GM558															

C71/C92 COMPOSIZIONE CHIMICA DI COLATA / HEAT CHEMICAL ANALYSIS																					
807	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91
COLATA HEAT	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	Al	V	Nb	Ti	Sn	Ca	N	B	H	Ceq1	Ceq2	Pcm
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	% (D)	% (D)	% (D)
AS1670LTV Min 50.10 - 100.00		0,85	0,15																		
AS1670LTV Max 50.10 - 100.00	0,30	1,20	0,40	0,025	0,025																
Ordine Min 2		0,85	0,15																		
Ordine Max 2	0,27	1,45	0,40	0,035	0,035							0,040								0,43	
1NAC86	0,16	1,20	0,20	0,015	0,002	0,040	0,020	0,040	<0,005	0,031	<0,005	0,023	<0,005	<0,005	0,0000	0,0060	0,0005	0,0002	0,40	0,41	0,25

PROVA DI TRAZIONE TENSILE TEST										PROVA DI RESILIENZA IMPACT TEST - CHARPY V-NOTCH TEST						PROVA DI PIEGA BEND TEST			PROVA DI DUREZZA HARDNESS TEST			PROVA DI STRIZIONE Z% TEST									
										C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	C12	C13	C14								
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
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										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
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										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [MPa]	YIELD STRENGTH	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEMPERATURA [°C]	TEST TEMPERATURE	ORIENTAZIONE	ORIENTATION	POSIZIONE (2)	LOCATION	TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% VALORE MEDIO 2% MEAN VALUE	25% SINGOLI VALORI 25% INDIVIDUAL VALUES
										REH/Rm	REH [MPa]	TENSILE STRENGTH	RAH [																		

		PROVA DI TRAZIONE TENSILE TEST										PROVA DI RESILLENZA IMPACT TEST - CHARPY V-NOTCH TEST						PROVA DI PIEGA BEND TEST				PROVA DI DUREZZA HARDNESS TEST				PROVA DI STRIZIONE Z% TEST	
C00		C01	C01	C02	C03	C11	C12		C13	C10	C14	C02	C03	C42	C43	C02	C31	C32	C50	C01	C30	C31	C12	C53	C54		
CAMPIONE SAMPLE	SPESORE LAMIERA PLATE THICKNESS	POSIZIONE (1) LOCATION	POSIZIONE (2) LOCATION	DIREZIONE ORIENTATION (3)	TEMPERATURA [°C] TEST TEMPERATURE	YIELD STRENGTH	TENSILE STRENGTH	Rm [Mpa]	ELONGATION A2%	FORMA PROVINO (4) SHAPE OF TEST PIECE	R _{p0.2} [Mpa]	DIREZIONE ORIENTATION (3)	TEST TEMPERATURE	LARGHEZZA [mm] WIDTH	MEDIA [J] SINGOLI VALORI [J] INDIVIDUAL VALUES	DIREZIONE ORIENTATION (3)	MANDREL MANDREL [mm]	ANGOLO [°] ANGLE	ESITO (3) RESULT	POSIZIONE (2) LOCATION	METODO TEST METHOD	SINGOLI VALORI INDIVIDUAL VALUES	MEAN VALUE	2% STINGOLI VALORI 2% INDIVIDUAL VALUES	2% VALORE MEDIO 2% MEAN VALUE		
ORDINE Min 2												L	-46	16	20												
GM557	90,00	2	D	T	20		518		37,7	343	C	10,00	L	-46	D	238	259	250	249								
GM557	90,00	2										10,00	T	-50	D	161	147	179	162			HRC <	22				
GM558	90,00	2	D	T	20		515		33,6	363	C	10,00	L	-46	D	230	204	215	216								
GM558	90,00	2										10,00	T	-50	D	149	145	143	146								
C10																											
ASME SA-370 FIG. 3 AND FIG. 10 (FIG. 11 a 10x10mm) - SAMPLE TAKEN AFTER PLATE HEAT TREATMENT																											
Z01																											

ASME SA-370 FIG. 3 AND FIG. 10 (FIG. 11 a 10x10mm) - SAMPLE TAKEN AFTER PLATE HEAT TREATMENT

Z01					
ITEM	TOLLERANZA DI SPESSORE TOLERANCE ON THICKNESS	TOLLERANZE DI LARGHEZZA TOLERANCE ON WIDTH	TOLLERANZE DI LUNGHEZZA TOLERANCE ON LENGTH	CONDIZIONI SUPERFICIALI SURFACE FINISH	PLANARITÀ FLATNESS
2	EN 10029 CL.8	-0+100 MM	-0+200 MM	EN 10163/2 CL. B2	EN 10029 CL. N

CERTIFICHIAMO che le lamiere elencate sono conformi alla prescrizione dell'ordine, che i controlli della marcatura, dell'aspetto superficiale e dimensionale hanno dato esito positivo.
WE CERTIFY that the above mentioned plates are consistent with the order prescriptions: marking, inspection and measurement without objection.
DICHIARIAMO CHE LE LAMIERE SONO STATE CONTROLLATE IN ACCORDO ALLA NORMATIVA VIGENTE E CHE LE RADIAZIONI IONIZZANTI NON ECCEDONO IL VALORE DEL FONDO NATURALE.
WE DECLARE THAT THE PLATES WERE CONTROLLED ACCORDING TO STANDARD AND RADIATION DO NOT EXCEED THE NATURAL RADIATION.

Z06		
HARDNESS IN ACC. TO NACE MR 0175 / ISO15156		
Z07	Z03 ENTE COLLAUDO / INSPECTION BODY	Z02
PRODUCED FROM CONTINUOUS CAST SLAB AND HAVE A MINIMUM REDUCTION RATIO OF 3 TO 1. ACC. TO ASTM ED. 2017. FULLY KILLED, FINE GRAIN STEEL. Value of Mn maximum in derogation permitted up to 1.50% Plates acc. to PED 2014/68/EU	TIMBRE DELL'ISPETTORE STAMP OF THE INSPECTION REPRESENTATIVE	METINVEST TRAMETAL S.p.A. F. Andrian CQ Manager

8160454



OSSITAGLIO S.p.A. Via Oltavio Ricci, 13/14 43030 PAROLA (PR)	ULTRASONIC TEST CERTIFICATE	ALLEGATO 2
		PROCEDURA 4
		REV 0

CERTIFICATO/CERTIFY N°.190042

DATA/DATE : 20-03-2019

 CUSTOMER **VALVITALIA**
ORDER: A190000897 del 20-03-2019

PROCEDURE: UNI EN 10160

ACCEPTABILITY: UNI EN 10160 class S2E3

Lamiera/Sheet: 40x3000x12000	Materiale/Material : P355NH	Heat / Colata : 1NAD02
* Vedi riferimento riepilogo certificazioni e controlli UT / See reference certification and UT control summary Pos Item 4-5		
Lamiera/Sheet: 65x2450x10000	Materiale/Material : A516 gr70	Heat / Colata : 1NAC86
* Vedi riferimento riepilogo certificazioni e controlli UT / See reference certification and UT control summary Pos Item 9		
Lamiera/Sheet: 90x2450x6000	Materiale/Material : A516 gr70	Heat / Colata : 1NAC86
* Vedi riferimento riepilogo certificazioni e controlli UT / See reference certification and UT control summary Pos Item 10		

SCANNING DIRECTION

 INSTRUMENT : KRAUTKRAMER Couplant Water ☒ Oil Tylose paste

Type USM 32

Serial Nr.36066 - 5704

REFERENCE : Surface condition

 As rolled ☒

As forged

PROBE Type : Straight

Frequency : 2Mhz D.24

EXAMINATION RESULTS

REMARKS :

 Conform ☒

 Not Conform ☐

 UT effectuated by:
 OSSITAGLIO SPA

 OSSITAGLIO S.p.A.
 Via O. Ricci, 13/14 - 43030 PAROLA (PR)
 Tel. 0521/400000

 Sign Operator 2° level
 Patteri
 Certificate n° 169
 Reference SNT - TC - 1A

Sign Service Quality control

 Crasta Daniele
 RSQ e RSQA

Riepilogo Certificazioni e Controlli UT / Certifications and UT Controls summary

Cliente / Customer:	Valvitalia S.p.a. Vitas division	Ord N°	A190000897
------------------------	----------------------------------	--------	------------

Pos. Item	Quantità / Quantity		Colata / Heat	Descrizione / Description	Materiale/ Material	Disegno / Draw
1	N° pezzi/ n° pieces	10	1NAD02	1990x752x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CA01-6F-222-B
2	N° pezzi/ n° pieces	10	1NAD02	1992x130x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CB01-6F-222-C
3	N° pezzi/ n° pieces	5	1NAD11	668x130x50* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CD01-6F-222-B
4	N° pezzi/ n° pieces	20	1NAD02	1042x890x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	P355NH	CE01-6F-222-B
5	N° pezzi/ n° pieces	20	1NAD02	890x267x40* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	P355NH	CF01-6F-222-B
6	N° pezzi/ n° pieces	5	1NAD11	1010x362x50* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	CG01-6F-222-B
8	N° pezzi/ n° pieces	10	A011202	130x100x30* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	TJ01-6F-009-A
9	N° pezzi/ n° pieces	5	1NAC86	900x365x55* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	F2A-6F-222-A
10	N° pezzi/ n° pieces	5	1NAC86	1322x622x90* Vedi Riferimento Certificato/ See Reference Certificate UT n°190042	A516GR70	F5B-6F-222-F-A

Operatore Qualificato/ Sign Operator 2° level Ossitaglio Spa Paffer Roberto	Data/ Date : 20 03-2019	Timbro Ossitaglio / Company stamp Ossitaglio S.p.A. Via O. Rinaldi 17/11 - 47039 FANO (PU) P.IVA 01550360245	Responsabile della Qualità Ossitaglio Sign Service Quality control Ossitaglio
--	----------------------------	--	---



ENP and VACUUM - CODEPOSITION TECHNOLOGIES

Via F.lli Rosselli 10 20068 Peschiera Borromeo (MI)

Tel. +39.02.55305457 - Fax +39.02.55305883

www.deltar.it - info@deltar.it

CERTIFICATO CONTROLLO QUALITA'
QUALITY CONTROL CERTIFICATE

EN 10204 3.1



AZIENDA CERTIFICATA
UNI EN ISO 9001: 2008
UNI EN ISO 14001: 2004
OHSAS 18001: 2007

DATI GENERALI / GENERAL INFORMATION

Certificato N° / Data Rep N°	190003337-01/012	Data / Date	11/09/2019
Ddt Cliente / Customer delivery	NR.1900712 DEL 07/08/19		
Ddt DELTA / DELTA delivery	N. 0002349 - Del 06/09/2019		
Cliente / Customer	VALVITALIA SPA VITAS DIVISION		
Descrizione / Description	5B-6F-222-F-A OTTURAT.22" *75u		
Materiale base / Base material	Ferro	Tipo processo / Process type	ENP-1012
Specif. di riferim. / Ref. specif.	DE-LS001-REV.7 STD		
Q.tà / Q.ty	Imp n° / Planet n°	Bagno n° / Bath n°	Barra n° / Rack n°
5,00	A	413	12
			M.T.O.
			0,28

RIFERIMENTI DOCUMENTI / DOCUMENTARY REFERENCES

IN A516 Gr.70
VS.ORD.NR.A190001690 POS.1
RIF.ODL: J000051585-4
RIF.ODV: VTS18-0324-4

CONTROLLI EFFETTUATI / PERFORMED TEST

Controllo Test	Metodo Method	Su Particolare On Parts	Su Provino On Coupon	N° Provino Coupon s.n.	Specifica di rif. Ref. Spec.
ADHESION	IMPACT TEST	Conform			ASTM B571
VISUAL INSPECTION	CONTROLLO VISIVO FINE PRODUZIONE	Conform			ASTM B733
ADHESION	BURNISCHING TEST	Conform			ASTM B571
THICKNESS	THICKNESS BY WEIGHT		µm 75,390	112400	ASTM B733



Note / Notes

Emesso da / Issue by

WALTER MANSTRETTA

Approvato da / Approved by

SEAT

103070

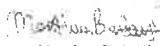
 IRE- OMBA S.p.a Cert. ISO 9001		Test certificate / Certificato Prove Materiale 3.1 EN 10204 IRE193307/1 		N° - Rev 193307/1									
Customer/Cliente: CARRARA S.P.A.													
Order/Ordine: 1910945		Inspection/Collaudo: IRE OMBA		Job/Comm.: 193307									
Mater./Spec.: Forging ratio / Rapporto di Fucinatura $\geq 4:1$ LF2 CL1 ASTM A350/15 Manufactur. process: forged+rolled rings Manufactur. process: Forged + rolled rings													
Prova n° Test-Batch	Item Pos.	Pieces n° Pezzi	ϕ est mm	ϕ int mm	h mm	Identification/Identificazione	HBW1	HBW2					
108360	010	10	635	540	56	312118	141						
Chemical analysis % / Analisi chimica Heat n° / Colata: 190783 Steel mill / Acciaieria: RUBIERA SPECIAL STEEL - ITALY - (IT) Cert. orig.: C-0076842 Vacuum degassed													
C	Mn	Si	P	S	Cu	Cr	Ni	Mo	Al				
0.170	1.18	0.22	0.010	0.004	0.13	0.10	0.09	0.02	0.022				
V	Nb	Ti	Sn	B	H	N	Ceq	P+S	Nb+V+Ti				
0.004	0.001	0.001	0.007	0.0005	0.00017	0.0089	0.406	0.014	0.006				
Cu+6Sn	Cr+Mo	CuCrMo	CuNiCrMo	CuNiCrMoV									
0.172	0.12	0.25	0.34	0.344									
Heat treatment / Trattamento termico Normal. 900°C 1.5H Air													
Tension Test/Trazione +20°C ASTM E8 $s=12.5\text{mm}$ $L_0=50\text{mm}$													
Required values/Valori richiesti													
Rp .2% N/mm2		Rp 1% N/mm2		Rm N/mm2		A4d %		A5d %		Z %			
Sense/Senso	min	max	min	max	min	max	min	max	min	max	min		
TANG	275				485	655	22				30		
Obtained values/Valori rilevati													
Test n°	Sense/Senso	Rp .2% N/mm2		Rp 1% N/mm2		Rm N/mm2		A4d %		A5d %		Z %	
108360	TANG	338				510		32.7				70.3	
Impact test/Resilienza ASTM A370/ ASTM E23 10x10mm													
Required values/Valori richiesti													
Sense/Senso	Type/tipo	T°C	Med./Av.	Min.	U.M	Obtained values/Valori rilevati							
TANG	KV	-46	28	22	J	Test/Prova	Val1	Val2	Val3	Med./Av.			
						108360	118	103	98	106.33			
Hardness test / Durezza: ASTM E10													
Required values/Valori richiesti													
Min		Max		Type/tipo		Obtained values/Valori rilevati							
		187		HBW		Test/Prova	Val1		Val2				
						108360	141		146				
Spec./Note DD4 Rev.3													

8161975



CARRARA SPA
 Q.C. DEPT.
 TRUE CERTIFIED COPY
 PROT. N. 251-19 DATA 20-5-19

Data / Date (d/m/y)
 20/05/19

Q.C. DEPT.

 Martina Belotti

Pag. 1 di 1

Società soggetta all'attività di direzione e coordinamento di RING MILL S.p.A.
iscritta al Registro Imprese di Sondrio al numero 00122100142



Lorenzi
Claudia



Gaser Technical Coating
Gruppo **GASER**

CERTIFICATO DI CONFORMITA' E COLLAUDO EN 10204 3.1
Certificate of conformity and testing EN 10204 3.1

Cliente Customer

CARRARA S.P.A.

Descrizione Articolo Item Description

312952/75 SEAT 22" 600 LF2 631x540x56.3mm dwg.4B-6F-222-BHAB-A REV0. Nichelatura 75 um

Materiale base Raw material

LF2

Numero Vs. DDT	Number of your document	Data Vs. DDT	Date of your document	Nr. Ordine Cliente	Number Customer Order
264		24/06/2019		1911257-1	

Numero Ns. DDT	Number of our document	Data Ns. DDT	Date of our document
002599		02/07/2019	

Numero pezzi	Number of pieces	Rapporto di controllo	Control report number
10,00		19/02674	

Specifica di riferimento Ref. Specification

Trattamento Treatment

ENP 10+13% P

Metal Turn Over

≤3

Tipo prova	Test type	Valore riscontrato	Recording of value	Norma	Standard
VISUAL INSPECTION		PASSED		ASTM B 733 paragraph 7.2.1	
THICKNESS		75,00 µm		ASTM B 733 paragraph 9.3.5	
ADHESION		PASSED		WEIGHT METHOD	
ADHESION		PASSED		ASTM B 571 paragraph 9.4.2	
HARDNESS		>550 HV		IMPACT TEST	
POROSITY		PASSED		ASTM B 571 paragraph 3	
				BEND TEST	
				ASTM B 733 paragraph 9.5	
				MICRODUROMETER	
				ASTM B 733 paragraph 9.6.1	
				FERROXYL TEST	

Note Notes

H.190783

COUPON F314

Firma responsabile controllo Responsible signature

GTC 3.1 REED 2 REV 1 del 06/12/10

Gaser Technical Coating
C.s.p. **GASER**
Via Enzo Ferrari, 3
16033 Isola Vicentina (VI)
P.I. e C.F. 01505620244
Tel. 0444976937 - Fax 0444976929

STEM

Seite 1 / 3
Page

BGH

35610

BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH

Handelslager

Hüttenstraße

01705 Freital

Deutschland

Zeugnis-Nr. 445193 Rev.1 12.01.2018
Certificate no.
No. de certificatBescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 3.1
Certificat des essais des matériaux selon DIN EN 10204Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.Zeichen des Lieferwerkes
Trade mark
Signe du fournisseurStempel des Werkssachverständigen
Inspector's stamp
Poinçon de l'inspecteurKunden-Bestell-Nr. 226871001
Customer order no.
Cde. no. du clientBGH-Auftrags-Nr. 04741001/226871
BGH works no.
BGH référence

Erzeugnisform Product	Stab, rund, gewalzt, geschält round bars, rolled, peeled				
Werkstoff / Quality	UNS S17400-Type 630-H1150D				
Anforderungen Requirements	UNS S17400-Type 630-H1150D ASTM A 564 /A 564M - 13 UNS S17400 -Type 630 ASTM A 564 /A 564M - 13 UNS S17400 (Type 630)-H1150D ASME BPVC.II.A SA-564/SA-564M 2015 UNS S17400 - Type 630 ASME BPVC.II.A SA-564/SA-564M 2015 17-4 PH DBL H1150 EAGL- 624 Rev. 11 06/05/16 UNS S17400 ANSI/NACE MR 0175/ISO15156-3 2015 1.4542 X5CrNiCuNb16-4 DIN EN 10088 -3 12/14 630 (17-4PH) DBH 1150 ESP SS12 Rev. 6 01/17 17-4PH MPS 0106. R Rev. 5 06/11 17-4PH (H1150D) DSS 4542 Rev. 0 date 02-2007 17-4PH UNS S 17400 API 6A 20.Ed. Errata 10 2016/ISO10423 X5CrNiCuNb16-4 N° 17400 Rev. 11 03/17 BGH Freital verfügt über eine Zertifizierung nach Richtlinie 2014/68/EU Anhang I, Absatz 4.3 Kenn-nr. DGR-0036-QS-W013/2015/DD1-LEI, AD2000 W0 der Druckgeräterichtlinie Die Anwendung des Materials nach DGR1 erfordert ein Einzelgutachten. Wunschgemäß haben wir für die Attestierung die Druckgeräterichtlinie vorgesehen. Die Weiterverwendung des Materials muss jedoch durch Sie, je nach Anwendungsbereich und Regelwerk, geprüft und bewertet werden. UNS S17400 (H1150D) NACE MR0103/ISO17945:2015 (nicht für drucktragende Verschraubungen) Die Verwendung dieses Materials in Luftfahrzeugen ist vom Hersteller BGH untersagt. Bei Zuwiderhandlung kann im Haftungsfall kein Haftungsanspruch gegenüber BGH geltend gemacht werden. BGH Freital is qualified in accordance with PED 2014/68/EC Annex I, Paragraph 4.3 Pressure Equipment Directive Notified Body DGR-0036-QS-W013/2015/DD1-LEI AD2000 W0 The application of the material according PED requires a Particular Material Appraisal (PMA). As requested, we have provided for the Certification of the Pressure Equipment Directive. However, the re-use of the material has to be according to the context and rules, tested and rated by you. UNS S17400 (H1150D) NACE MR0103/ISO17945:2015 (not for pressure-retaining bolting applications) The use of this material in aircraft is forbidden by the producer BGH. In case of violation, BGH will exclude total liability in the event of damage.				
Besichtigung und Maßnachprüfung Inspection and dimensional control Inspection et contrôle de dimension ohne Beanstandung without objection	Erschmelzung/Nachbehandlung Meltingprocess/secondary refining Mode d'élaboration/traitement ultérieur E- AOD/LF/VD		Verwechslungsprüfung (spectroanalytisch) Identification test (spectral-analysis) examination d'identification (analyse spectrale) ohne Beanstandung without objection		
Pos. Item Poste	Anzahl Quantity Quantité	Abmessung Dimension Dimensions	Gewicht Weight Poids	Schmelz-Nr. Heat-No. No. de coulée	
1	16	80,00 RD (+0,30/-0,00) DIN EN ISO 286-2/k12	3240 kg	723810	
Schmelze Heat %	C	Si Mn P S Cr Mo Ni Cu Nb Al N			
723810	0,036	0,31 0,63 0,020 0,0010 15,73 0,30 4,23 3,18 0,240 0,025 0,0450			
Anlagen Encl. Annexe	US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph		Freital, den Place and date Lieu et date 29.09.2017		Abnahmebeauftragter Inspector representative Inspecteur de réception Müller
Das Zeugnis wurde maschinell erstellt und ist auch ohne Unterschrift gültig.			This certificate was generated by data system and it is valid without signature as well. Ce certificat a été établi sur système informatique et est valable sans signature aussi.		

CERTIFIED COPY
Special Steel Stock
S.S.C. SpA



BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH

Handelslager

Hüttenstraße

01705 Freital

Deutschland

Zeugnis-Nr. 445193 Rev.1 12.01.2018
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Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.Zeichen des Lieferwerkes Stempel des Werkssachverständigen
Trade mark Inspector's stamp
Signe du fournisseur Poinçon de l'inspecteurKunden-Bestell-Nr. 226871001
Customer order no.
Cde. no. du clientBGH-Auftrags-Nr. 04741001/226871
BGH works no.
BGH référence

Co	Ta	Fe	Nb/C	(Nb+Ta) /C	Nb+Ta					
0,023	0,005	75,11	6,667	6,806	0,245					
Wärmebehandlungszustand lösungsgeglüht + 2x ausgehärtet Condition of heat treat solution annealed + 2x precipitation hardening										
Probe-Nr.	Lage	Temp.	Rp0,2	Rp0,1	Rm	A4/A5	Z	Kerbschlagarbeit Impact value	Probenform Shape of test piece	Härte Hardness
Test-No.	loc.	°C	ksi	ksi	ksi	%	%	J	Charpy-V °C	HRC /HBW
Soll/Req.	L	RT	>=110		>=135	>=18	>=55	>=41	23	>=29 />=277
	L	RT						>=40	-10	<=33 /<=311
	L							>=42	-46	
	L							>=27	-60	
309ID1	L	RT	126	121	142	24/21	67	172 168 175 23		32/- (1)
309ID1	L							170 175 177 -10		32/309 (2)
309ID1	L							140 122 109 -46		
309ID1	L							113 114 102 -60		
309ID2										32/- (1)
309ID2										32/310 (2)

Prob-Nr	Temp	later.Breitung mm	Scherbruchant. %
Test-No	°C	later.expansion	shear fracture
309ID1	23	1,6 1,7 1,8	100 100 100 (längs/longitudinal)
309ID1	-10	1,7 1,7 1,7	100 100 100 (längs/longitudinal)
309ID1	-46	1,4 1,3 1,2	80 80 80 (längs/longitudinal)
309ID1	-60	1,1 1,2 1,1	75 70 70 (längs/longitudinal)

Zugprobenform/typ tensile specimen

ASTM A 370: Lo = 50 mm ; Do = 12,5 mm

Charpy-V 10 x 10 V = 2 mm

Längsproben/longitudinal test specimen Prüfort/test location: D/4 / mid radius

Härteprüfung/Hardness test: (1) Rand / near surface
(2) D/4 / mid radius

Deltaferrit/ferrite delta ASTM E 562: 1,0%

Deltaferrit/ferrite delta (metallographisch/metallographic): <2,0%

Korngröße/grain size ASTM E 112: 7.0

Anlagen US-Protokoll/UT report
Encl. Glühbesch./Heat treatment cer.
Annexe Gefügaufnahme/micrographFreital, den
Place and date
Lieu et date
29.09.2017Abnahmebeauftragter
Inspector representative
Inspecteur de réception
Müller

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Special Steel Stock
C.S.C. SpA



BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH

Handelslager

Hüttenstraße

01705 Freital

Deutschland

Zeugnis-Nr. 445193 Rev.1 12.01.2018
Certificate no.
No de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 3.1
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes
Trade mark
Signe du fournisseur

Stempel des Werkstoffverständigen
Inspector's stamp
Poinçon de l'inspecteur



Kunden-Bestell-Nr. 226871001
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. 04741001/226871
BGH works no.
BGH référence

Reinheitsgrad nach BS 5S100 / Cleanness acc. to BS 5S100
Reinheitsgrad/micro purity
A dünn/thin: 0 A dick/heavy: 0
B dünn/thin: 0,5 B dick/heavy: 0
C dünn/thin: 0 C dick/heavy: 0
D dünn/thin: 0,8 D dick/heavy: 0,3

Umformgrad/reduction ratio: 28:1

Material wurde nicht reparaturgeschweißt./Material no weld repaired.

Material ist frei von Quecksilberverunreinigungen./
Material is free from mercury contamination.

Proben wurden gemäß ASTM A 370 von der Stabverlängerung entnommen.
Probestücke von Stabverlängerung, Prüfort - D/4
Test pieces taken from actual bar prolongation in according to ASTM A 370.
Test pieces taken from barprolongation, test position - mid radius

AMS 2303C (Mag particle test): ohne Befund/
AMS 2303C (Mag particle test): without objection

Makrostruktur ASTM E340: keine Risse / Macrostructure ASTM E340: no cracks

Die gelieferten Produkte entsprechen den Qualitätsanforderungen der Bestellung und den genannten Spezifikationen./
The products supplied are in compliance with the quality requirements of the purchase order and specifications noted.

Ursprungsland (Erschmelzung und Fertigung): Deutschland
Country of origin (Melting and manufacturing): GERMANY

Fertigung nach QM-System ISO 9001: 2008/ QM system in effect is ISO 9001: 2008

Kontrolle auf Radioaktivität ohne Befund, der Messwert liegt unter der Nachweisgrenze von 0,1 Bq/g.

Radioactivity inspection without objection, the measured value is below the detection limit of 0.1 Bq/g.

CERTIFIED COPY
Special Steel Stock
S.S.C. SpA

Anlagen US-Protokoll/UT report
Encl. Glühbesch./Heat treatment cer.
Annexe Gefügeaufnahme/micrograph

Freital, den
Place and date
Lieu et date
29.09.2017

Abnahmebeauftragter
Inspector representative
Inspecteur de réception
Müller

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Gefügaufnahmen zum Zertifikat Nr. / Microstructure to certificate No.:

445193

Besteller/Purchaser: **BGH Edelstahl Freital GmbH**

Bestell-nr./Order-No.: **226871001**

Werkstoff/Quality: **UNS S17400-Type 630-H1150D**

Chargen-nr./Cast-No.: **723810**

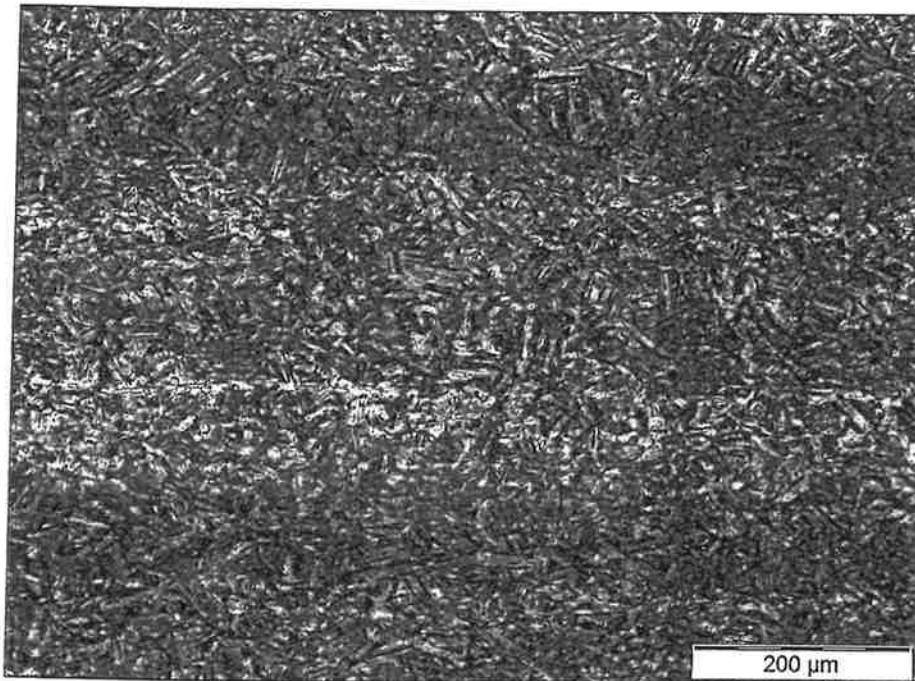
Erzeugnisform/Product: **Stab, rund, gewalzt, geschält / round bars, rolled, peeled**

Abmessung/Dimension: **80,00 RD (+0,30/-0,00) DIN EN ISO 286-2/k12**

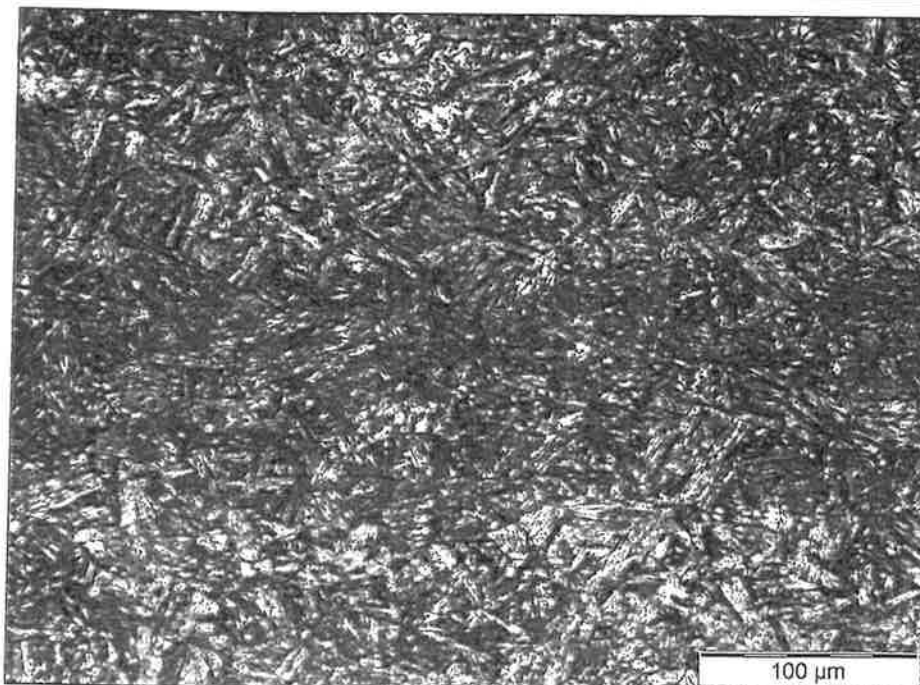
Komm.-nr./Work-No.: **04741001**

Proben-nr./Test-No.:

309ID1



100:1



200:1

CERTIFIED COPY
Special Steel Stock
C.S.C. SpA

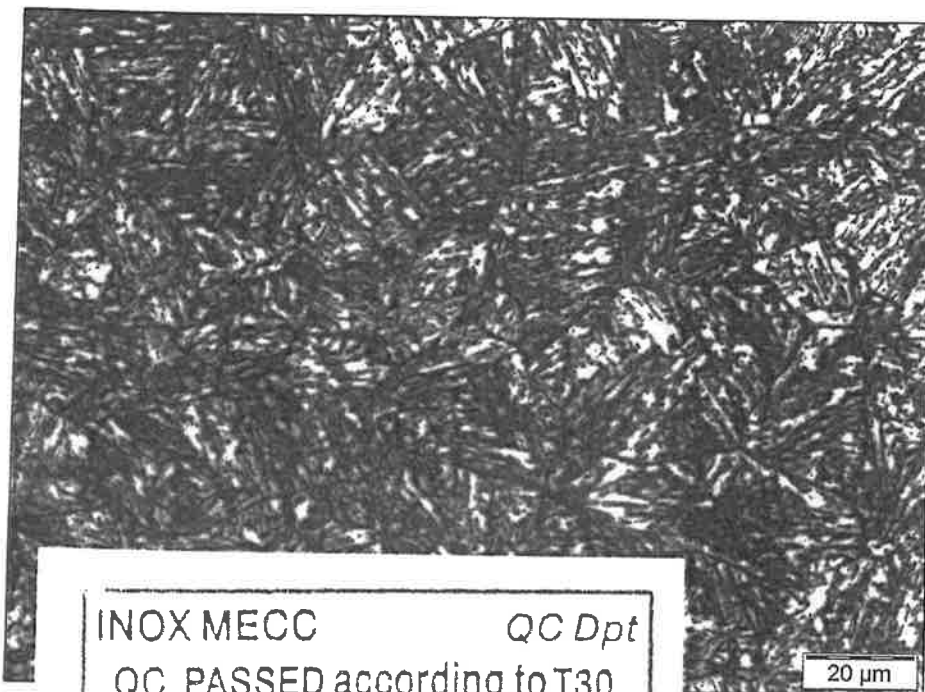
Gefügeaufnahmen zum Zertifikat Nr. / Microstructure to certificate No.:

445193

Besteller/Purchaser: **BGH Edelstahl Freital GmbH**
Bestell-nr./Order-No.: **226871001**
Werkstoff/Quality: **UNS S17400-Type 630-H1150D**
Chargen-nr./Cast-No.: **723810**
Erzeugnisform/Product: **Stab, rund, gewalzt, geschält / round bars, rolled, peeled**
Abmessung/Dimension: **80,00 RD (+0,30/-0,00) DIN EN ISO 286-2/k12**
Komm.-nr./Work-No.: **04741001**

Proben-nr./Test-No.:

309ID1



500:1

INOX MECC QC Dpt
QC PASSED according to T30

06 JUN 2019

HEAT CODE:

Approved:

CERTIFIED COPY
Special Steel Stock

C.S.C. SpA

Wärmebehandlungsbescheinigung
Heat treatment certificate
Attestation de traitement thermique



BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. 226871001
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. 04741001
BGH works no.
BGH référence

Zeugnis-Nr. 445193
Certificate no.
No. de certificat

Wärmebehandlungszustand: lösungsgeglüht + 2x ausgehärtet
Condition of heat treatment: solution annealed + 2x precipitation hardening
État de traitement thermique: recuit de mise en solution + durci précipité 2x

Datum:
Date: 10.09.2017
Date:

Ofen-Nr.:
Furnace no.: 474
No. du four:

Aufheizzeit:
Heating up time: 4,5 h
Temps de montée en température:

Haltezeit:
Holding temperature: 1040 °C
Température de maintien:

Haltezeit:
Holding time: 4,5 h
Temps de maintien

Abkühlmedium:
Quenching medium: Luft / air / air(<32°C)
Moyen de refroidissement:

Datum:
Date: 13.09.2017 20.09.2017
Date:

Ofen-Nr.:
Furnace no.: 413 405
No. du four:

Aushärtetemperatur:
Prec. hardening temp.: 620 °C 620 °C
Temp. de durcissement:

Haltezeit:
Holding time: 10 h 10 h
Temps de maintien:

Abkühlmedium:
Quenching medium: Luft / air / air(<32°C) Luft / air / air(<32°C)
Moyen de refroidissement:

Wärmebehandlungs-Nr.: 405/2895 (309ID)
Heat treatment lot no.:
No. du lot de traitement thermique:

Method of temperature monitoring: Furnace atmosphere thermocouple. Furnace calibration in accordance with API 6A 20th Ed. Annex M. P930/H1150D

CERTIFIED COPY
Special Steel Stock
FSC SpA

Diagramm:
Diagram:
Diagramme: X

Datum:
Date: 29.09.2017
Date:

Abnahmebeauftragter
Inspector representative
Inspecteur de réception
Pfennig

BGH
Q454

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PRESSBOLT

Pressbolt s.r.l. con unico socio
Partita Iva 03231770136
Via dell'Artigianato, 12 - 22078 - Turate (CO)
Tel. +39 02 96.97.98.50 - Fax +39 02 96.97.98.29
email qualita@pressbolt.com

VALVITALIA SPA-DIV. VITAS
VIA SOASTENE. 24
36040 - BRENDOLA(VI)

STUDBOLT

Inspection Certificate EN 10204 3.1

Number	Rev.	Date
3104510	0	11 July 2019

Your Order		Our References	
Number	A190001692 of 13 May 2019	Number	2902502
Reference			
Item	6 - PCTR2541800RMAAR0A 647029	Item	60
Job		Shipping ref.	2909432 of 11 July 2019

Standard			
ASTM A320(M)-18 / ASME SA320(M) BPVC-IIA-19 - L7M			
PED 2014/68/EU A% according to 5.65 SQR (Speciment Area)			
Item Description		Heat Treatment	
STUDBOLT ASME B16.5		QUENCHED AND TEMPERED 620 C	
A/SA 320 L7M			
1"-8 UNC X0180			
Heat	Quantity	Lot	Job PB
BC7963	140	P1435240	0000752858

Chemical Analysis " % "								
Required	C	Mn	Si	P	S	Cr	Mo	
Actual	0.38 - 0.48	0.75 - 1	0.15 - 0.35	max 0.035	max 0.04	0.8 - 1.1	0.15 - 0.25	
	0.420	0.860	0.190	0.015	0.007	0.980	0.170	
Tensile Test								
Required	Rm " Mpa"		Rp02 " Mpa"		A " % "		Z " % "	
Actual	min 690		min 550		min 18		min 50	
	708		554		19.57		51.85	
Required	Elongation % EN 5 D							
Actual	Min 14							
	17.2							
Required	Hardness " HB "		Impact Test -73 C "J"					
Actual	200 - 235		min 27					
	214;202;207		30;44;39					
Mechanical tests are longitudinal performed: at the center for product diameter 1.1/2" - 40mm or less; at mid of radius for product diameter over 1.1/2" - 40mm.								
Macroetch Examination				Positive		Visual and dimensional test		
						Positive		

Hardness: 100% electromagnetic testing

We state that the bolting material were manufactured, sampled, tested and inspected in accordance with the specification and any other requirements designated in the purchase order or contract and it was found to meet those requirements



Duilio Piras
Quality control manager



PRESSBOLT

Pressbolt s.r.l. con unico socio
Partita Iva 03231770136
Via dell'Artigianato, 12 - 22078 - Turate (CO)
Tel. +39 02 96.97.98.50 - Fax +39 02 96.97.98.29
email qualita@pressbolt.com

VALVITALIA SPA-DIV. VITAS
VIA SOASTENE. 24
36040 - BRENDOLA(VI)

NUTS

Inspection Certificate EN 10204 3.1

Number	Rev.	Date
3104368	0	09 July 2019

Your Order		Our References	
Number	A190001692 of 13 May 2019	Number	2902502
Reference			
Item	3 - PCDA2540000SVAAR0A 641464	Item	30
Job		Shipping ref.	2909260 of 09 July 2019

Standard			
ASTM A194(M)-18 / ASME SA194(M) BPVC-IIA-19 / NACE MR0103/ISO 17945-15 / MR0175/ISO 15156-15 - Gr.7M S3			
PED 2014/68/EU			
Item Description	Heat Treatment		
HEAVY HEX NUT H=d ANSI B18.2.2. Tab 10	QUENCHED AND TEMPERED 620 C		
A/SA 194 7M-S3			
1"-8 UNC			
Heat	Quantity	Lot	Job PB
559526	238	P1437989	0000751813

Chemical Analysis " % "								
	C	Mn	Si	P	S	Cr	Mo	
Required	0.38 - 0.48	0.75 - 1.0	0.15 - 0.35	max 0.035	max 0.04	0.80 - 1.1	0.15 - 0.25	
Actual	0.400	0.810	0.220	0.014	0.005	0.990	0.160	
Required		Proof Load			Hardness " HB "		HB after T.T. 24h	
Actual		Positive			159 - 235		min 159 HB	
		Positive			224;227;223		213;217;215	
Required		Impact Test -73 C "J"						
Actual		min 27 J						
		50;62;68						
Mechanical tests are longitudinal performed: at the center for product diameter 1.1/2" - 40mm or less; at mid of radius for product diameter over 1.1/2" - 40mm.								
Macroetch Examination				Positive		Visual and dimensional test		Positive

Hardness: 100% electromagnetic testing

We state that the bolting material were manufactured, sampled, tested and inspected in accordance with the specification and any other requirements designated in the purchase order or contract and it was found to meet those requirements



Duilio Piras
Quality control manager



		RAPPORTO DI CONTROLLO CON ULTRASUONI ULTRASONIC TEST REPORT				N° 171 / VITAS / 19	
						DATA 12/09/2019	
						FOGLIO 1/1	
						Sheet	
DATI GENERALI / general data							
CLIENTE Client		VITAS		LUOGO Place		CARMEC TREZZANO SULL'ADDA (VI)	
				COMMESSA Job		VTS18-0324	
DESCRIZIONE ESAME Test Details				UT ON PUP VALVE 22" CL. 600		ORD order	//
						Q.TA' Q.ty	10
DOC. DI RIFERIMENTO Reference Documents				ASTM A435		ACCETTABILITA' Acceptance Criteria	
						ASTM A435	
COSTRUTTORE Manufacturer				CARMEC		ENTE DI COLLAUDO Inspecting Authority	
						//	
COMPONENTE ESAMINATO / examined part							
NUMERO DI FABBRICA Serial Number		VTS18-0234 ITEM 4		COLATA Heat N.	H:264529 / H:107438+107437	MATERIALE Material	A350 LF2
						DIS. Dwg	//
ESECUZIONE DEL TEST Test Carried Out		☐ PRIMA PWHT Before PWHT		☐ DOPO PWHT After PWHT		☒ PRIMA PROVA IDRAULICA Before Hydraulic Test	
						☐ DOPO PROVA IDRAULICA After Hydraulic Test	
SUPERFICIE Surface		☐ LAMINATA As Rolled		☐ GREZZA Rough		☐ MOLATA Ground	
						☐ SABBIAIA Sand Blasted	
						☐ LAVORATA DI MACCHINA Machined	
SOVRAMETALLO SALDATURA Welding Reinforcement		☐ COME SALDATO As Welded		☒ LAVORATO DI MACCHINA Machined		☐ MOLATO Ground	
						☐ RACCORDATO Blended	
TECNICA / technique							
STRUMENTO Instrument	N	TIPO Type	MISURA Size	ANGOLO Angle	FREQUENZA Frequency		
EPOCH LT	1	IMG	Ø10	0	4 MHz		
	2	IMG	8x9	45°	4 MHz		
							
CONDIZIONI D'ESAME / test conditions							
SUPERFICIE DI SCANSIONE Scanning Surface		☒ ESTERNA External		☐ INTERNA Internal		AMPLIFICAZIONE Scanning Amplitude	
						+ 6 DB	
TARATURA STRUMENTO Instrument Calibration		☐ V1		☒ V2		MATERIALE BLOCCO CAMPIONE Sample Block Material	
						SPESS. BLOCCO CAMPIONE Sample Block Thickness	
						DGS	
ASSE DEI TEMPI Time Base Calibration		125 / 400 mm		RIFLETTORI Reflectors		☐ FORI Holes	
						☐ INTAGLI Notches	
						☐ FORI A FONDO PIATTO Flat Bottom Holes	
INDICAZIONI DA REGISTRARE / Indications to be Recorded							
DISEGNO DWG	LUNGHEZZA Length	PROFONDITA' Depth	% DAC DAC %	SPESSORE Thickness	SONDA Probe	NOTE Remarks	
NOTE Remarks							
☒ RISULTATI CONFORMI AI REQUISITI Results Conforming to the Specified Requirements							
☐ RISULTATI NON CONFORMI AI REQUISITI Results Not Conforming to the Specified Requirements							
DATA Date		12/09/2019		LUOGO Place		CARMEC TREZZANO SULL'ADDA (VI)	
				OPERATORI Operators		LATINI R.	
II LEVEL SGS CTR		SUPERVISOR SGS CTR		CLIENTE Customer		ENTE DI COLLAUDO Inspecting Authority	
							
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		RAPPORTO DI CONTROLLO CON PARTICELLE MAGNETICHE MAGNETIC PARTICLE TEST REPORT		N° 170 / VITAS / 19	
				DATA 12/09/2019	
				Date	
				FOGLIO 1/1	
DATI GENERALI general data					
CLIENTE Client	VITAS	LUOGO Place	CARMEC TEZZE SUL BRENTA (VI)	COMMESSA Job	VTS18-0324
DESCRIZIONE ESAME Test Details	MT ON REINFORCING PLATES AND SOCKET WELD OF TCF 22" 600			ORD order	// Q.TA' Q.ty 5
DOC. DI RIFERIMENTO Reference Documents	ASME V art. 7		ACCETTABILITA' Acceptance Criteria ASME VIII Div. 1 App. 6		
COSTRUTTORE Manufacturer	CARMEC		ENTE DI COLLAUDO Inspecting Authority //		
COMPONENTE ESAMINATO examined part					
NUMERO DI FABBRICA Serial Number	VTS18-0324 ITEM 4 S.N. 1-2-3-4-5	COLATA Heat N.	SEE NOTE	MATERIALE Material	SEE NOTE DIS. Dwg //
ESECUZIONE DEL TEST Test Carried Out	☐ PRIMA PWHT Before PWHT ☐ DOPO PWHT After PWHT ☒ PRIMA PROVA IDRAULICA Before Hydraulic Test ☐ DOPO PROVA IDRAULICA After Hydraulic Test				
SUPERFICIE Surface	☒ LAMINATA As Rolled ☐ GREZZA Rough ☐ MOLATA Ground ☐ SABBIATA Sand Blasted ☐ LAVORATA DI MACCHINA Machined				
SOVRAMETALLO SALDATURA Welding Reinforcement	☒ COME SALDATO As Welded ☐ LAVORATO DI MACCHINA Machined ☐ MOLATO Ground ☐ RACCORDATO Blended				
TECNICA technique					
APP. : SILVER YOKE Nr 10202 Equipment	☒ GIOGO MAGNETICO Yoke ☐ CONDUTTORE CENTRALE Central conductor ☐ PUNTALI Prods ☐ BOBINA Coil				
PARTICELLE MAGNETICHE: ELITE Magnetic particles	☐ POLVERE A SECCO Dry powder ☒ LIQUIDO MAGNETICO NERO Black Magnetic liquid ☐ LIQUIDO MAGNETICO FLUORESCENTE Fluorescent magnetic liquid				
CORRENTE Current	☒ AC ☐ DC VOLTAGGIO 48 V DISTANZA PUNTALI 150mm Voltage Distance				
SMAGNETIZZAZIONE Demagnetization	☐ RICHIESTA Required ☒ NON RICHIESTA Not required LOTTO LIQUIDO MAGNETICO Magnetic liquid Batch nr. LOTTO LACCA CONTRASTO White Lacquer Batch nr.				
CONDIZIONI DI ILLUMINAMENTO Lighting conditions	☐ LUCE NERA Black light ☒ LUCE BIANCA Light ☐ NATURALE Natural 1000 LUX ☐ ARTIFICIALE Artificial lux				
INDICAZIONI DA REGISTRARE Indications to be Recorded					
COMPONENTE Item			NOTE Remarks		
NOTE Remarks					
BODY FRONT/BACK		BODY SIDE A/B		BODY PIPE	
A516 GR.70		A516 GR.70		A350 LF2	
H: 1NAD02		H: 1NAD02		H:264529 / H:107438+107437	
☒ RISULTATI CONFORMI AI REQUISITI Results Conforming to the Specified Requirements			☐ RISULTATI NON CONFORMI AI REQUISITI Results Not Conforming to the Specified Requirements		
DATA Date	12/09/2019	LUOGO Place	CARMEC TEZZE SUL BRENTA (VI)	OPERATORI Operators	LATINI R.
II LEVEL SGS CTR		SUPERVISOR SGS CTR		CLIENTE Customer	ENTE DI COLLAUDO Inspecting Authority
					
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SGS		CTR		RAPPORTO DI CONTROLLO CON ULTRASUONI		N° 169 / VITAS / 19	
				DATA 12/09/2019			
				Date			
				FOGLIO 1/1			
				Sheet			
DATI GENERALI / general data							
CLIENTE VITAS		LUOGO CARMEC		COMMESSA VTS18-0324			
Client		Place TEZZE SUL BRENTA (VI)		Job			
DESCRIZIONE ESAME UT ON LONGITUDINALS, CIRCUMFERENTIALS, FLANGE WELDS AND PIPES WELD OF TCF VALVE 22" CL. 600				ORD //		Q.TA' 5	
Test Details				order		Q.ly	
DOC. DI RIFERIMENTO ASME V art.4				ACCETTABILITA' ASME VIII Div 1 app.12			
Reference Documents				Acceptance Criteria			
COSTRUTTORE CARMEC				ENTE DI COLLAUDO //			
Manufacturer				Inspecting Authority			
COMPONENTE ESAMINATO / examined part							
NUMERO DI FABBRICA VTS18-0324 ITEM 4		COLATA SEE NOTE		MATERIALE SEE NOTE		DIS. //	
Serial Number S.N. 1-2-3-4-5		Heat N.		Material		Dwg	
ESECUZIONE DEL TEST							
Test Carried Out							
☐ PRIMA PWHT Before PWHT ☐ DOPO PWHT After PWHT ☒ PRIMA PROVA IDRAULICA Before Hydraulic Test ☐ DOPO PROVA IDRAULICA After Hydraulic Test							
SUPERFICIE							
Surface							
☐ LAMINATA As Rolled ☐ GREZZA Rough ☐ MOLATA Ground ☐ SABBIAIA Sand Blasted ☐ LAVORATA DI MACCHINA Machined							
SOVRAMETALLO SALDATURA							
Welding Reinforcement							
☒ COME SALDATO As Welded ☐ LAVORATO DI MACCHINA Machined ☐ MOLATO Ground ☐ RACCORDATO Blended							
TECNICA / technique							
STRUMENTO		N	TIPO	MISURA	ANGOLO	FREQUENZA	
Instrument			Type	Size	Angle	Frequency	
EPOCH LT		1	MWB	8 x 9	60°	4 MHz	
		2	MWB	8 x 9	45°	4 MHz	
		3	MSEB	Ø10	0°	4 MHz	
CONDIZIONI D'ESAME / test conditions							
SUPERFICIE DI SCANSIONE		☒ ESTERNA External		☐ INTERNA Internal		AMPLIFICAZIONE + 6 DB	
Scanning Surface						ACCOPIAMENTO CELLULOSE PAST	
TARATURA STRUMENTO		☒ V1 ☐ V2		MATERIALE BLOCCO CAMPIONE CARBON STEEL		SPESS. BLOCCO CAMPIONE 38 mm	
Instrument Calibration				Sample Block Material		Sample Block Thickness	
ASSE DEI TEMPI		125 / 150 mm		RIFLETTORI ☒ FORI 3 mm		☐ INTAGLI	
Time Base Calibration				Reflectors Holes		Notches	
INDICAZIONI DA REGISTRARE / Indications to be Recorded							
DISEGNO	LUNGHEZZA	PROFONDITA'	% DAC	SPESSORE	SONDA	NOTE	
DWG	Length	Depth	DAC %	Thickness	Probe	Remarks	
NOTE Remarks							
BODY FRONT/BACK		BODY SIDE A/B		BODY PIPE			
A516 GR.70		A516 GR.70		A350 LF2			
H: 1NAD02		H: 1NAD02		H:264529 / H:107438+107437			
☒ RISULTATI CONFORMI AI REQUISITI				☐ RISULTATI NON CONFORMI AI REQUISITI			
Results Conforming to the Specified Requirements				Results Not Conforming to the Specified Requirements			
DATA 12/09/2019		LUOGO CARMEC		OPERATORI LATINI R.			
Date		Place TEZZE SUL BRENTA (VI)		Operators			
II LEVEL SGS CTR		SUPERVISOR SGS CTR		CLIENTE Customer		ENTE DI COLLAUDO Inspecting Authority	
II LEV. SNT. TC. 1A UN. EN ISO 9712		II LEV. SNT. TC. 1A UN. EN ISO 9712					
RT-UT-MT-PT-VT		RT-UT-MT-PT-VT					

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RIME SRL VIA DELLA MECCANICA, 1 35014 FONTANIVA (PD)			CERTIFICATO COLLAUDO VERNICIATURA PAINTING INSPECTION CERTIFICATE			Certificate No 843/19 Sheet 1 of 1		
CLIENTE: <i>Customer:</i>		QUARTER TURN RESOURCES INC ✓			ORDINE: <i>Order:</i>		Q19-20509 ✓	
PROGETTO: <i>Project:</i>		GATE VALVES STOCK ORDER ✓			RIF. VITAS: <i>Vitas ref:</i>		VTS 18-0324 ✓	
ITEM VITAS: <i>Item Vitas:</i>		4 ✓		ITEM CLIENTE: <i>Item Customer:</i>		4 ✓		Q.TA: <i>Q.ty</i>
TIPO VALVOLA: <i>Type Valves:</i>		FABRICATED THROUGH CONDUIT GATE VALVE 22"600 ✓		TAG NO: <i>Tag Number:</i>		04052201000 QTR STOCK		

PREPARAZIONE SUPERFICIE / SURFACE PREPARATION			
SABBIATURA / SANDBLASTING		LAVAGGIO / WASHING	
MANUALE <i>MANUAL</i>	☒	GARNET <i>GARNET</i>	☒
AUTOMAT. <i>AUTOMATIC</i>	☐	GRANIGLIA <i>STEEL GRIT</i>	☐
FINITURA SUPERFICIE: SA 2,5 <i>SURFACE GRADE:</i>		NORMA DI RIFERIMENTO: ISO 8501-1 <i>IN ACCORDING TO:</i>	
PULIZIA ARIA COMPRESSA: <i>BLOTTER TEST: in according to ASTM D 4285</i>		Satisfactory	
LAVAGGIO / SGRASSAGGIO <i>MATERIAL WASHING/ DEGREASING</i>		☒	
RUGOSITA': RZ=62 µm <i>ROUGHNESS:</i>			

LUOGO DI LAVORO / LOCATION OF PAINTING			
STABILIMENTO <i>FACTORY</i>	☒	CANTIERE <i>SITE</i>	☐
		ALTRO <i>OTHER</i>	☐

CICLO DI VERNICIATURA / PAINTING SEQUENCE										
MANO <i>COAT</i>	PRODUTTORE VERNICE <i>PAINT PRODUCER</i>	TIPO DI VERNICE <i>PAINT TYPE</i>	METODO APPLICAZ. <i>APPLICAT. METHOD</i>	SPESSORE SECCO <i>DRY FILM THICKNESS</i>	DATA <i>DATE</i>	TEMP. <i>TEMP.</i>	TEMP. SUPERFICIE <i>SURFACE TEMP.</i>	UMIDITA' <i>HUMIDITY</i>	PUNTO RUGIADA <i>DEW POINT</i>	RAL/ COLORE <i>RAL/ COLOUR</i>
PRIMER	CARBOLINE	CARBONZINC 11	AIRLESS	75 MICRON	27/09/2019	24,6	23,9	62	16,8	
						FINAL COLOUR:		GREY		
CUSTOMER SPECIFICATION:										
VITAS SPECIFICATION:		According to VTS18-0324 BV 015 - sheet N. E02 rev. 8								

CONTROLLI / CHECKS											
CONTROLLO VISIVO / VISUAL CHECK :					OK						
SPESSORE FINALE VALOLE / FINAL THICKNESS: <i>in according to ISO 2808</i>					S.N. 001	S.N. 002	S.N. 003	S.N. 004	S.N. 005		
					98	102	104	96	90		
					µm	µm	µm	µm	µm		

STRUMENTI / INSTRUMENTS			THICKNESS METER ELCOMETER E456 sn:NE05278 scad/expiry: 20/09/2020		
NOTE / REMARKS :			ROUGHNESS METER ELCOMETER E124 sn:SD25489 scad/expiry: 20/09/2020		

RI-ME SRL	VALVITALIA SPA - VITAS DIVISION	ISPETTORE / INSPECTOR
DATA / DATE 30/09/2019	DATA / DATE	DATA / DATE
FIRMA / SIGNATURE	FIRMA / SIGNATURE	FIRMA / SIGNATURE
 RI-ME SRL Via della Meccanica, 1 - 35014 Fontaniva (PD) Tel. 049 9420200 - Fax 049 9420232 E-mail: info@ri-me.it C.F. 04940430288		