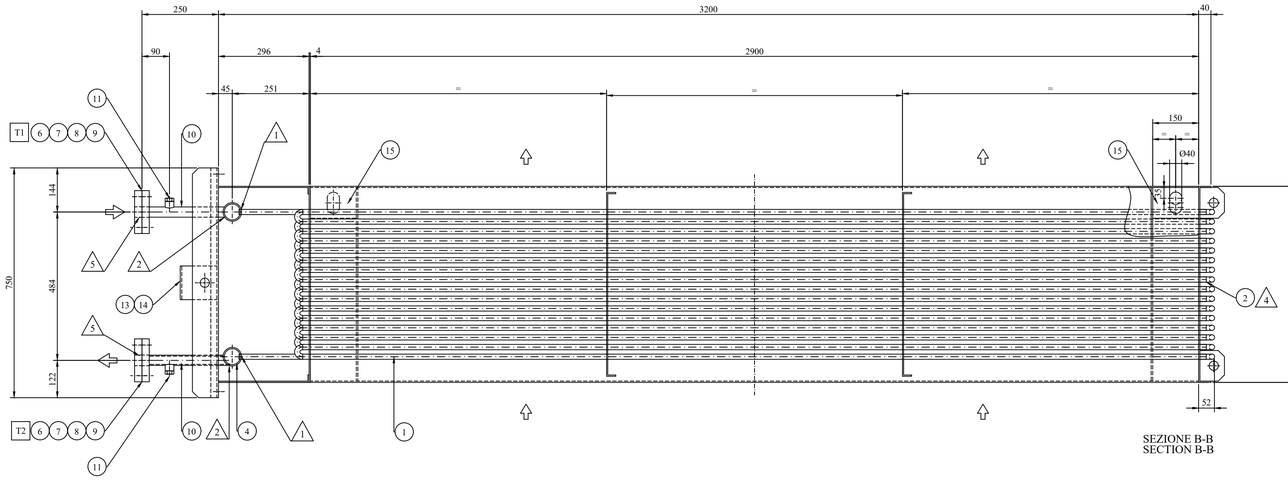
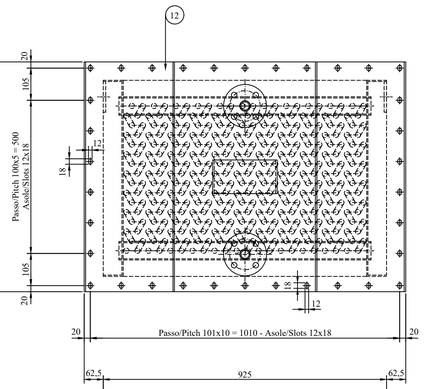
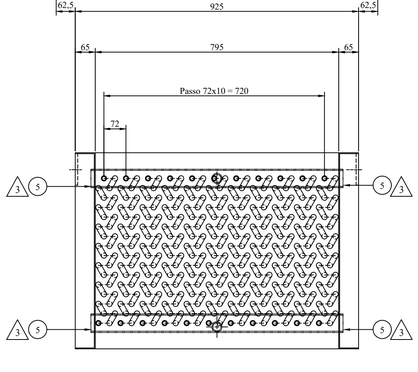
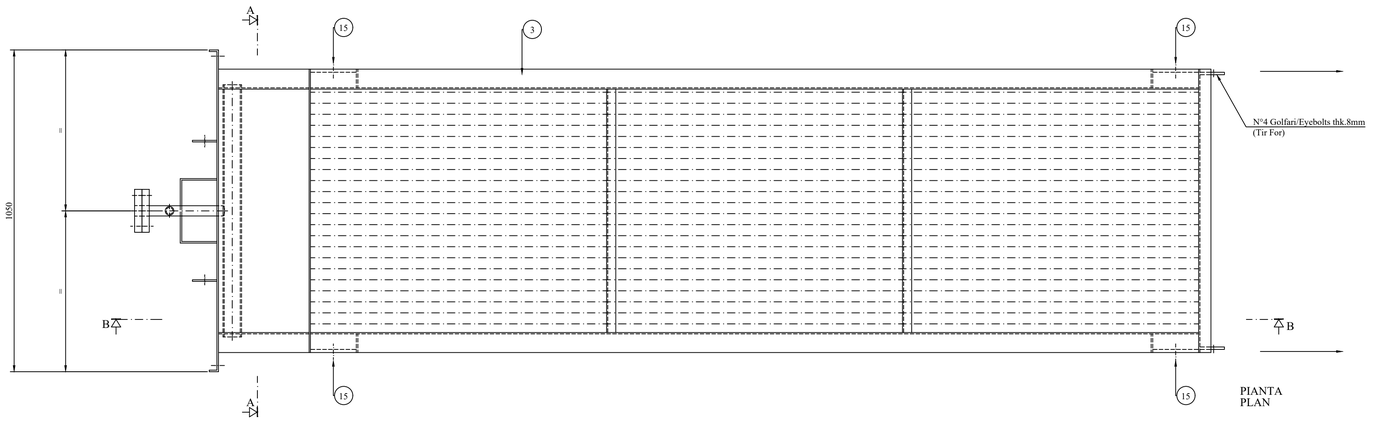
Tolleranza generale di lavorazione (ISO 2768) Dimensioni lineari General allowance Linear dimensions									
Grado di precisione / Degree of accuracy	Oltre/Above	0.5	3	6	30	120	400	1000	2000
	Fino a/Up to	3	6	30	120	400	1000	2000	
C	Scostamenti Deviations	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3	±4

Tolleranza generale di lavorazione (ISO 2768) Dimensioni angolari General allowance Angular dimensions									
Grado di precisione / Degree of accuracy	Oltre/Above		10	50	120	400			
	Fino a/Up to	10	50	120	400				
C	Scostamenti Deviations	±1°30'	±1°	0°30'	±0°15'	±0°10'			



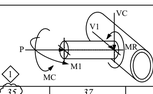






T4	1/2"	NPT	3000	-	-	-	-	SFIATO/VENT
T3	1/2"	NPT	3000	-	-	-	-	SCARICO/DRAIN
T2	25	EN 1092-1 TYPE 01-A	PN100	-	Ø33.4x3.38	-	-	USCITA CONDENSA/OUTLET CONDENSATE
T1	25	EN 1092-1 TYPE 01-A	PN100	-	Ø33.4x3.38	-	-	INGRESSO CONDENSA/INLET CONDENSATE
SIGLA Pos.	DN size	TIPO type	SERIE rating	FACCIA facing	TRONCHETTO nozzle	SPORG. distances	RINFORZO reinforcement	SERVIZIO service

ELENCO CONNESSIONI - list of connections



25	1 (35)	1 (35)	37	62	62	160
D.N.	MC	M1	MR	VC	V1	P
N°size	MOMENTI(Nm) moments (Nm)			FORZE(N) forces(N)		

CARICHI MAX.SUI BOCCHELLI *max.allowable nozzle loads*

OGGETTO	*Item*	
NORME DI CALCOLO	*Design specification*	EN 13445 - 2014/68/UE
APPROVAZIONE	*Approval*	0496
OVALIZZAZIONE	*Ovalization*	-
MATERIALI	*Material specification*	EN13445-2
SALDATURE	*Welding specification*	EURONORM
TALLONE	*Sample*	-
PROVE SULLE SALDATURE	*Welding test*	(100% PT ON HEADER) EN 13445-5 (100% LP SU COLLETT.) EN 13445-5
PROCEDIMENTO DI SALDATURA	*Welding process*	vedi/see WPS
QUALIFICA PROCEDIMENTO	*Process qualification*	EN 15614-1/EN 288
QUALIFICA SALDATORI	*Welder qualification*	EN ISO 9606-1
ELETTRODI	*Electrodes*	vedi/see WPS
TRATTAMENTO TERMICO	*Heat treatment*	-

PESO A VUOTO shell and bundle weight	PESO FASCIO 1/2 bundle weight 1/2	PESO PIENO ACQUA weight full of Water	SUPERFICIE LATO TUBI surface 1/2	TEMA TYPE
kg 1250	kg	kg 1385	m^2 54.8	-

IDENTIFICAZIONE *identification*

N° DI FABBRICA	*Serial number*		24280 (LINE 1) - 24281 (LINE 2)	
ANNO DI COSTRUZIONE	*Year of manifacture*		2017	
QUANTITA' APPARECCHI RICH.	*Quantity required*		2	
CATEGORIA/MODULO	*Category/Module*			IV/H1
PRESSIONE DI PROGETTO	*Design pressure*	bar(g)	0.15	63
PRESSIONE DI ESERCIZIO	*Working pressure*	bar(g)		
PRESSIONE DI PROVA	*Test pressure*	bar(g)		101.3
TEMPER. PROGETTO	*Design temperature*	°C	0/+210	0/+285
TEMPER. ESERCIZIO (IN/OUT)	*Working temperature*	°C	+5/+66	+265.2/+80
CONTENUTO/STATO FISICO	*Contents/Physic state*		ARIA/AIR	CONDENSA CONDENSATE
CAPACITA'	*Capacity*	lt	-	135
SUPERFICIE	*Surface*	m^2		54.8
EFFICIENZA GIUNTI	*Joint Efficiency*			VEDERE CALCOLI /SEE CALCULATION
SOVRASPESSORE DI CORROSIONE	*Corrosion allowance*	mm	0	0
COLLAUDO	*Test by*			
DATI DI PROGETTO	design data		LATO MANTELLO shell side	POS.1 LATO TUBI 1 tube side 1

REV.	DATA ISSUE DATE	KOD. WYDANIA ISSUE CODE	OPIS REWZJI REVISION DESCRIPTION	PRZYGOTOWANY PRZEZ PREPARED BY	SPRAWDZONY PRZEZ CHECKED BY	ZATWIERDZONY PRZEZ APPROVED BY
01	15/03/2017	-	WYDANIE DRUGIE SECOND ISSUE	.	.	.
00	01/03/2017	-	PIERWSZE WYDANIE FIRST ISSUE	.	.	.
1	15/03/17	ISSUED FOR CONSTRUCTION		VA	RM	
0	01/03/17	ISSUED FOR APPROVAL		VA	RM	

AUTORYZACJA WYDANIA/APPROVAL ISSUE

3				BATTERIA A CONDENSA DI RICAMBIO (ARIA PRIMARIA)	UNITERM
2				SPEAR PART CONDENSATE AIR HEATER (PRIMARY AIR)	
DES.	DESCRIPTION DESCRIZIONE	APP.		TITLE /TITOLO	DRW. DIS.N° 16350
EMPTY WEIGHT/ PESO A VUOTO	Kg 1250 ~	scale 1:10		JOB/COMMESSA 17021	PIECES/PEZZI 2

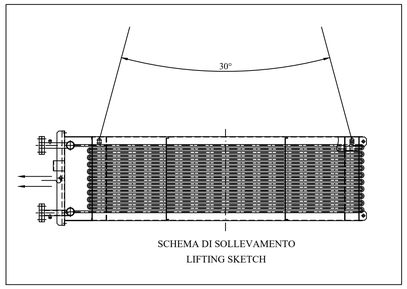
Questo disegno è nostra proprietà e non deve venire consegnato o mostrato a terze persone né in originale né in copie (Art.1153,53 C. C. 298 C. P.)

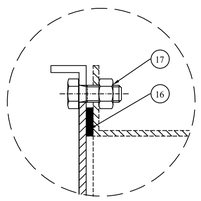
MANUFACTURER	ITEM	
UNITERM	SERIAL No/YEAR	24280 /2017
SRL via Cilea - 20090 Cologno Monzese-ITALY	DESIGN TEMP./TS C°	0/+285
	DESIGN PRESS./PS bar (g)	63
	TEST PRESS./PT bar (g)	101.3
	FLUID/GROUP	CONDENSATE
	CAPACITY/V. L	135
	OUTPUT kw	751
	TARE MASS kg	1250

14 LINE 1

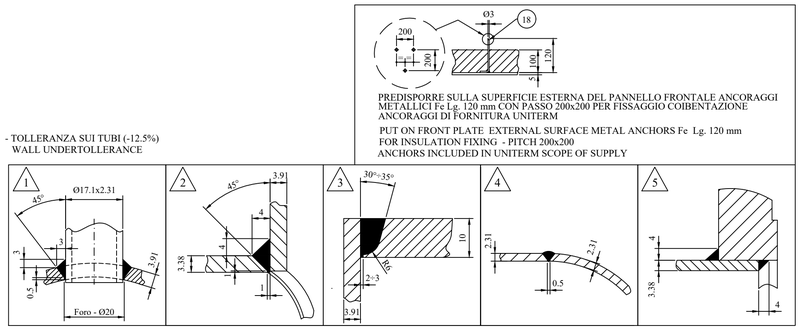
MANUFACTURER	ITEM	
UNITERM	SERIAL No/YEAR	24281 /2017
SRL via Cilea - 20090 Cologno Monzese-ITALY	DESIGN TEMP./TS C°	0/+285
	DESIGN PRESS./PS bar (g)	63
	TEST PRESS./PT bar (g)	101.3
	FLUID/GROUP	CONDENSATE
	CAPACITY/V. L	135
	OUTPUT kw	751
	TARE MASS kg	1250

14 LINE 2

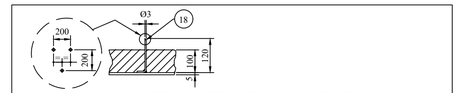




N.B.: GLI SPESSORI INDICATI A DISEGNO SONO QUELLI NOMINALI; LE TOLLERANZE DI LAVORAZIONE PREVISTE SONO IN ACCORDO CON IL CODICE DI COSTRUZIONE DEL MATERIALE		N.B.: ON DRAWING ARE INDICATED THE NOMINAL THICKNESSES THE TOLERANCES ARE ACCORDING WITH MATERIAL CONSTRUCTION CODE
NOTE		NOTES
6	- VERNICIATURA ESTERNA SOLO PIASTRA FRONTALE : Sa 2,5 + Zincante inorganico 75µm - TECTYL SU FASCIO TUBIERO	- PAINTING ONLY FRONT PLATE OF EXTERNAL SURFACE : Sa 2,5+Inorganic zinc 75µm - TECTYL ON TUBE BUNDLE
5	TUTTE LE SALDATURE DEVONO ESSERE CONTINUE	ALL WELDED JOINTS MUST BE SEAM WELDED
4	SALVO DIVERSA INDICAZIONE TUTTE LE QUOTE SONO IN mm.	UNKESS OTHERWISE INDICATED,ALL DIMENSION ARE IN MM.
3	PROTEGGERE PER LA SPEDIZIONE I BOCCHELLI E LE ALETTE	ALL NOZZLES FACING AND FINS SHALL BE PROTECTED DURING SHIPMENT
2	PRIMA DELLA SPEDIZIONE L'APPARECCHIO DEVE ESSERE VUOTATO E PULITO	BEFORE SHIPMENT THE UNIT SHALL BE DRAINED AND CLEANED
1	LA FORATURA DELLE FLANGE DEVE RISULTARE FUORI DAGLI ASSI PRINCIPALI DELL'APPARECCHIO.	NOZZLE AND MAIN FLANGE BOLTS HOLES SHALL BE OUT OF MAIN AXIS.



- TOLLERANZA SUI TUBI (-12.5%)
WALL UNDERTOLLERANCE



POS.	N.	DENOMINAZIONE	description	MATERIALE material	DIMENSIONI dimensions	C. R.
18	20~	SPILLI PER COIBENTAZIONE	*METAL ANCHORS FOR INSULATION FIXING*	Fe	lg.120	ⓘ
17	34+34+68	VITI+DADI+RONDELLE(RICAMBIO)	*SCREWS+NUTS+WASHERS(SPARE PART)*	c.l 8.8 zinc/galvanized	M10x30	ⓘ
16	3.6m	GUARNIZIONE LATO ARIA(RICAMBIO)	*SHELL SIDE GASKET(SPARE PART)*	SILESJ SILICONE	▱ 20x6	ⓘ
15	4	GOLFARI	*EYEBOLTS*	S275 J0	thk.8	ⓘ
14	1	**TARGA DATI**	***NAME PLATE***	**AISI 316L**	thk.1	ⓘ
13	1	SUPPORTO TARGA	*NAME PLATE SUPPORT*	S275 J0	thk.5	ⓘ
12	1	PIASTRA FRONTALE	*FRONT PLATE*	S275 J0	thk.5	ⓘ
11	2	MEZZO MANICOTTO+TAPPO	*HALF COUPLIN + PLUG*	P250 GH - EN 10222-2	Ø1/2" NPT 3000	◐
10	2	BOCCHELLO	*NOZZLE*	P265 GH TC1	Øe33.4x3.38	◐
9	2	GUARNIZIONE	*GASKET*	GRAFOIL+INOX	x DN25 PN100	ⓘ
8	8	DADI	*NUTS*	42 Cr Mo4+QT	M16	◐
7	8	VITI	*BOLTS*	42 Cr Mo4+QT	M16x70	◐
6	4	FLANGIA EN1092-1	*FLANGE EN1092-1*	P250 GH - EN 10222-2	DN25 PN100 - TIPO 01-A	◐
5	4	FONDELLI	*FLAT HEAD*	P355NH	thk.10	◐
4	2	COLLETTORE	*HEADER*	P265 GH TC1	Øe60.3x3.91	◐
3	-	CASING	*CASING*	S275 J0	thk. 4mm	ⓘ
2	341	CURVE	*ELBOWS*	P265 GH (1)	Øe17.1x2.31△36	◐
1	352	TUBO SCAMBIATORE	*EXCHANGE TUBE*	P265 GH (1)	Øe17.1 x 2.31	◐

● MATER. COLLAUDATO tested material ◐ MATER. CON CERTIFICATI certificated material ⓘ MATER. NON COLLAUDATO no tested material

DOKUMENT DOSTAWCY - DO ZATWIERDZENIA Supplier's Document - Approval Status	
ZATWIERDZONY Approved	
ZATWIERDZONY JAK SKORYGOWANO Approved as corrected	
NIE ZATWIERDZONY Not Approved	
NIE WYMAGA ZATWIERDZENIA Approval not required	

ZATWIERDZENIE PRZEZ TM.E NIE ZWALNIA DOSTAWCY Z OBOWIĄZKU WYPEŁNIENIA ZOBOWIĄZAŃ KONTRAKTOWYCH I Z OBOWIĄZKÓW Z NICH WYNIKAJĄCYCH.
TM.E. approval does not exempt the supplier from observing the contractual obligations and from his consequent responsibilities.

INFRASTRUKTURA I ŚRODOWISKO NARODOWA STRATEGIA SPÓJNOŚCI — ProNatura — UNIA EUROPEJSKA FUNDUSZ SPÓJNOŚCI

ZASTĘPUJE DOKUMENT NR./SUBSTITUTES DOC. NO.	ZLECENIE NR./JOB NO.	WYDANY PRZEZ/ISSUED BY
-	10168	-

NAZWA OBIEKTU BUDOWLAN. ORAZ ADRES: /OBJECT'S NAME AND ADDRESS: ZAKŁAD TERMICZNEGO PRZEKSZTAŁCANIA ODPADÓW KOMUNALNYCH BYDGOSZCZ, UL. Ernsta Petersona 22, DZ. NR 2/101, 2/108 OBRĘB 0133

INWESTOR//INVESTOR

ProNatura

Międzygminny Kompleks Unieszkodliwiania Odpadów ProNatura Sp. z o. o.

Budowa Zakładu Termicznego Przekształcania Odpadów Komunalnychdla Bydgosko-Toruńskiego Obszaru Metropolitalnego

PROJEKT WYKONAWCZY
TYTUŁ/TITLE
PRIMARY AIR HEATER EXCHANGER (SPEAR PART CONDENSATE AIR HEATER) LINE 1 - LINE 2

POCHODZĄCH OD/DERIVATED FROM: -

KLASYFIKACJA CLASSIFICATION	KOMPLEKS PLANT	SYSTEM	KEN. FUN. FUN. UN.	TYP DOK. DOC. TYPE	FORMAT/SIZE	SKALA/SCALE
S I F	S 2	15	L1-2	C I C I D	A1	1:10

DOKUMENT NR./DOCUMENT NO. 10168EVMD029 — STRONA/SHEET 1 — Z/OF 1

PROJEKTANT PROWADZĄCY: SPECJALNOŚĆ: NR UPRAWNIEŃ:

PROJEKTANT: SPECJALNOŚĆ: NR UPRAWNIEŃ:

SPRAWDZAJĄCY: SPECJALNOŚĆ: NR UPRAWNIEŃ:

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NAZWA PLIKU/FILE IDENTIFICATION 10168EVMD029R00-000d0000-A1