



TREATMENT PERFORMANCE RESULTS

Kingspan Water & Energy Ltd.

College Road North, HP22 5EW Aylesbury, United Kingdom

EN 12566-3 Annex B

Results corresponding to EN 12566-3 and S.R. 66

PIA-SR66-2110-1053

BTA BioTec

Aerobic biological trickling filter in one GRP tank

Nominal organic daily load (influent)	0.31 kg BOD ₅ /d		
Nominal hydraulic daily load	0.9 m ³ /d		
Material	GRP		
Watertightness	Pass		
Crushing resistance (Pit test)	Pass (also wet conditions)		
Durability	Pass		
Treatment efficiency (nominal sequences)		Efficiency	Effluent
	COD	92.4 %	65 mg/l
	BOD ₅	96.2 %	13 mg/l
	TN _b *	63.2 %	19.6 mg/l
	NH ₄ -N*	82.4 %	6.4 mg/l
	P _{tot}	36.6 %	4.8 mg/l
	SS	97.0 %	11 mg/l
Electrical consumption	1.5 kWh/d		
Number of desludging	Not more than once		

* determined for temperatures $\geq 12^\circ \text{C}$ in the bioreactor

Tested by:

PIA – Prüfinstitut für Abwassertechnik GmbH

(PIA GmbH)

Hergenrather Weg 30

52074 Aachen, Germany

This document replaces neither the declaration of performance nor the CE marking.



Notified Body
No.: 1739



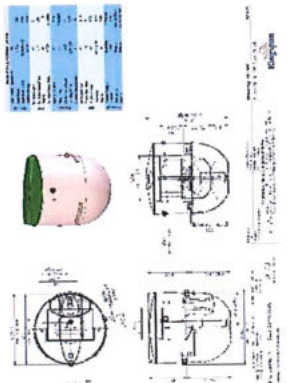
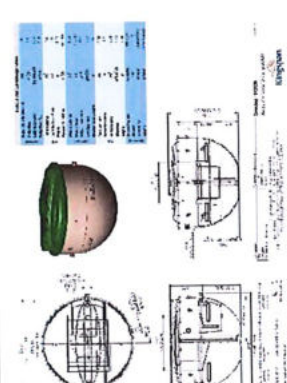
Certified according to
ISO 9001:2015

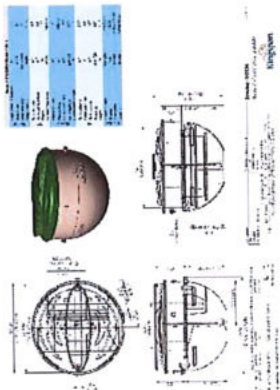


M. Wermter / D. Schmitz

February 2022

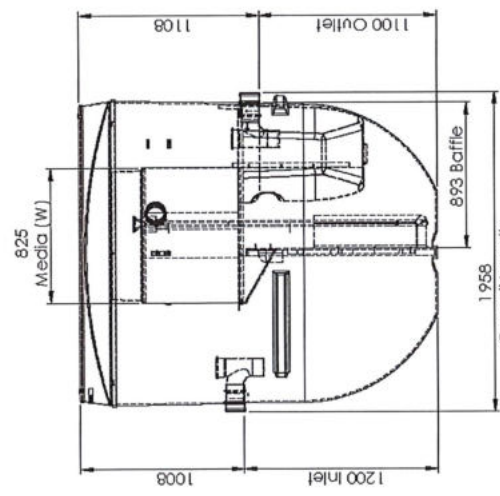
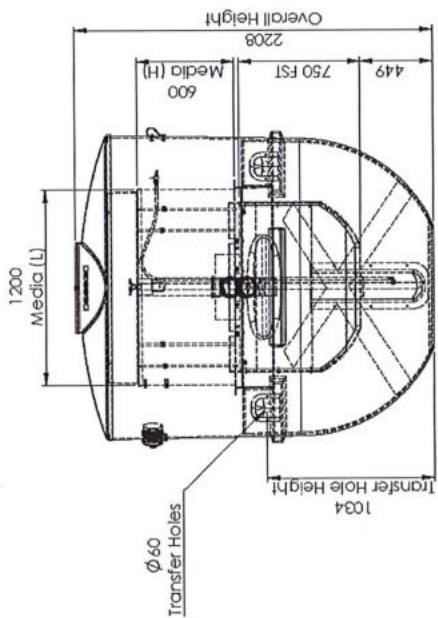
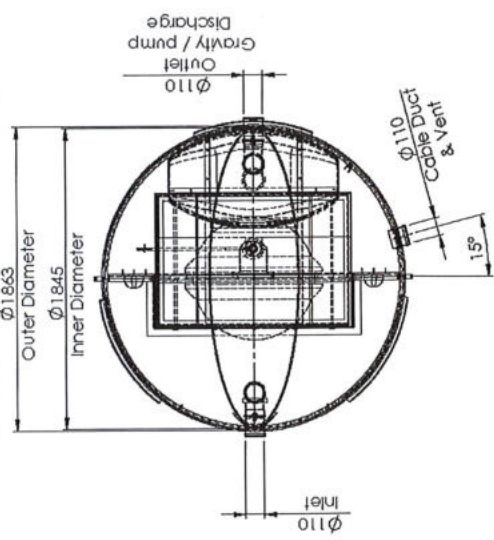
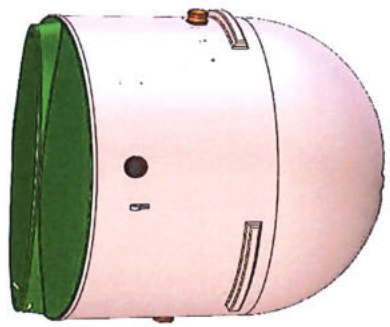
BioTec range and its referring test reports:

Population equivalent (PE)	Drawing of model of the range	Watertightness (EN 12566-3 Annex A)	Treatment Efficiency (EN 12566-3 Annex B)	Structural Behaviour (EN 12566-3 Annex C)	Durability
Initial Type Test (ITT) 6 900 l/d		Pass PIA2021-WD-2110-1053	Pass PIA2021-394B09	Pass PIA2022-ST-PIT-2110-1053 For wet ground conditions also, 1.50 m installation depth from inlet invert	Pass PIA2016-DH-1610-1115.01
12 1800 l/d		Pass PIA2021-WD-2110-1053	Pass Range conformity check according to S.R. 66:2015	Pass PIA2022-ST-PIT-2110-1053 For wet ground conditions also, 1.50 m installation depth from inlet invert	Pass PIA2016-DH-1610-1115.01

<p>18</p> <p>2700 l/d</p>		<p>Pass</p> <p>PIA2021-WD-2110-1053</p>	<p>Pass</p> <p>Range conformity check according to S.R. 66:2015</p>	<p>Pass</p> <p>PIA2022-ST-PIT-2110-1053</p> <p>For wet ground conditions also, 1.50 m installation depth from inlet invert</p>	<p>Pass</p> <p>PIA2016-DH-1610-1115.01</p>
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Biotec BTA-1 (6PE) Design Criteria

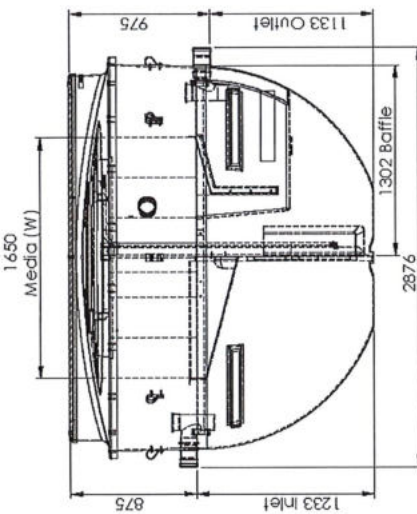
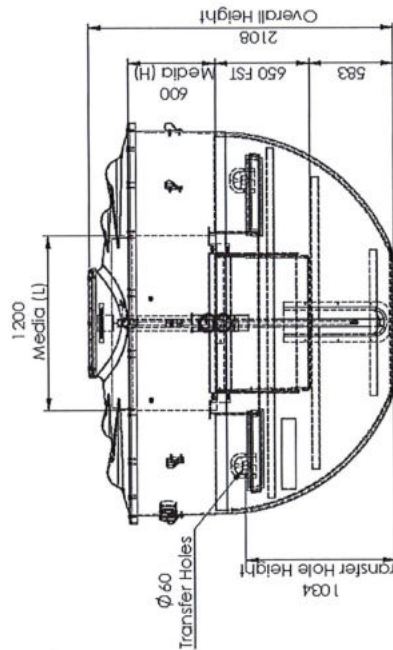
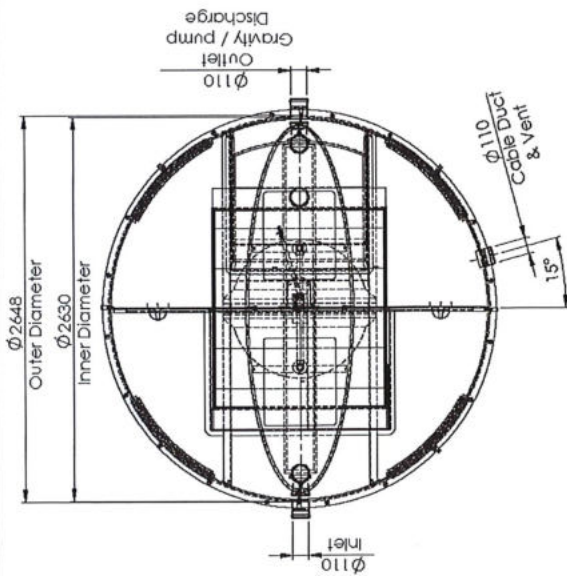
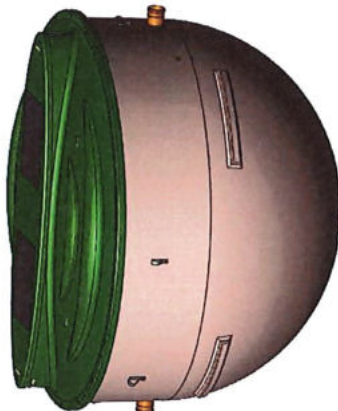
General	Population Equivalent	PE	6
Daily Flow	m ³ /d	0.9	
Daily BOD Load	kg BOD ₅ /d	0.36	
Daily Flow Q ₁₀	m ³ /h	0.09	
PST	Tank Volume	m ³	2.1
	Tank Surface Area	m ²	2.6
	Depth	m	1.10
	Forward feed Rate	m ³ /h	variable
Biozone	Media volume	m ³	0.58
	Media Area	m ²	133.632
	BOD ₅ - Load rate	g/d	360
	Loading Rate	g/m ² /d	0.27
	Blower Hose Length	m	15
FST	Tank volume	m ³	0.19
	Retention time	h	2.1
	Surface area	m ²	0.33
	Rise rate	m ³ /m ² /h	0.27
	Depth	m	0.65
Electrical	Power Supply	V/ph/Hz	230/7.5/50
	Blower	KW	0.04
	Controller	Model	Isolator/Panel
	Alarms	Model	Power/Blower



UN Number:	Tolerance (unless stated):	Page 1 of 1
Finish:	Thickness: n/a	
Weight:	Surface Area: m ²	
Modelled By: D. Muwabud	Material: Various	
Drawing: SK1002		
Biotec BTA-1 (6PE) Sizing Details		
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Date: 17/09/21	Drawn by: D. Muwabud	Scale: Do Not Scale
Description:	Initial Issue:	Third Angle Projection
Please Check with Kingspan Water & Energy For The Latest Issue Of This Drawing T:\Drawing\SR66-2110-1053\SR66-2110-1053.dwg		

Biotec BTAR2 (12PE) Design Criteria

General	Population Equivalent	PE	12
Daily Flow	m ³ /d	1.8	
Daily BOD Load	kg BOD ₅ /d	0.72	
Daily Flow Q ₀	m ³ /h	0.18	
PST	Tank Volume	m ³	4.2
	Tank Surface Area	m ²	5.3
	Depth	m	1.13
	Forward feed Rate	m ³ /h	variable
Biozone	Media volume	m ³	1.15
	Media Area	m ²	267.264
	BOD ₅ - Load rate	g/d	720
	Loading Rate	g/m ² /d	0.27
	Blower Hose Length	m	15
FST	Tank volume	m ³	0.39
	Retention time	h	2.2
	Surface area	m ²	0.78
	Rise rate	m ³ /m ² /h	0.23
	Depth	m	0.55
Electrical	Power Supply	V/ph/Hz	230/1/50
	Blower	kW	0.115
	Controller	Model	Isolator/Panel
	Alarms	Model	Power/Blower



Drawing : SK1003
Biotec BTAR2 (12PE) Sizing Details

Page 1 of 1
Tolerance (unless stated):
Thickness:
Surface Area: m²
Material:
Modified By: D. Muvabul

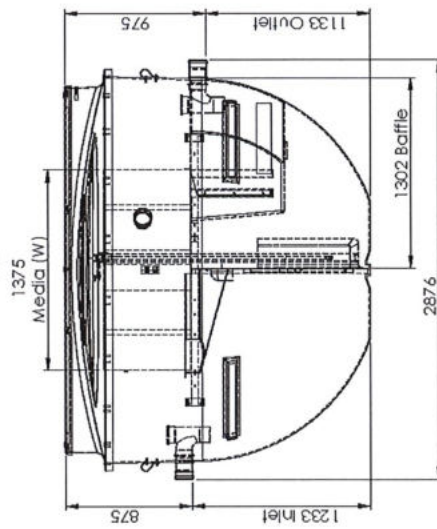
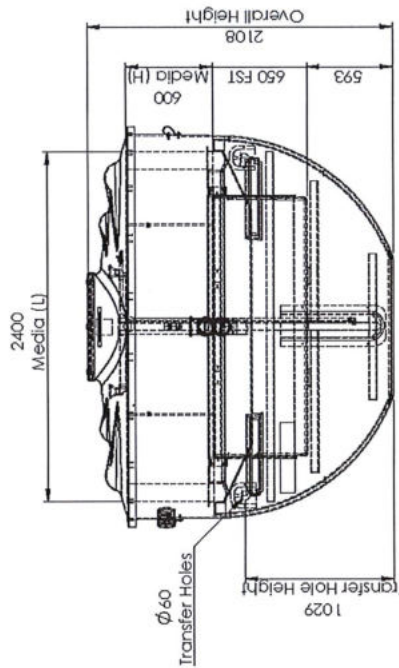
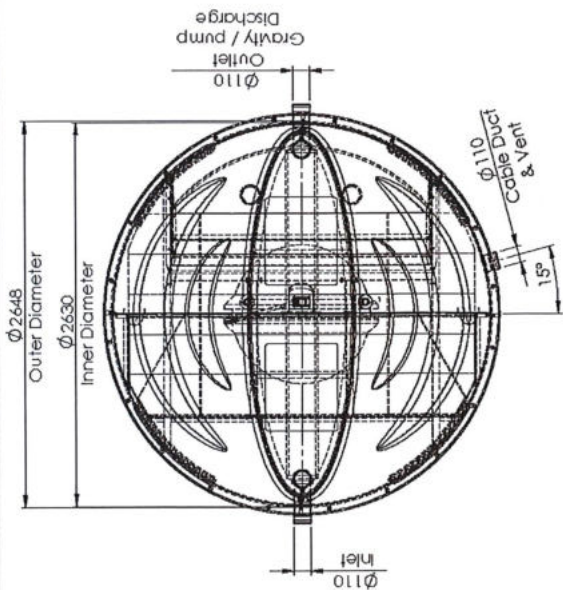
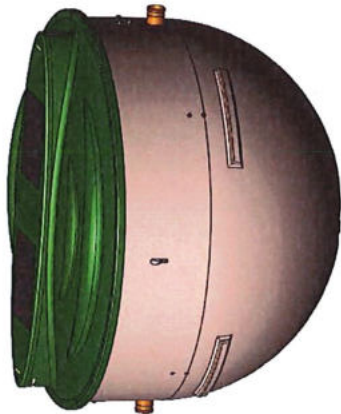
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Date: 17/09/21
Drawn by: D. Muvabul
Approved by: D.M.
Description: Initial Issue
Third Angle Projection
All Dimensions in mm
Scale: Do Not Scale
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Biotec BTAR3 (18PE) Design Criteria

Population Equivalent	PE	18
Daily Flow	m ³ /d	2.7
Daily BOD ₅ Load	kg BOD ₅ /d	1.08
Daily Flow Q ₀	m ³ /h	0.27
Tank Volume	m ³	4.2
Tank Surface Area	m ²	5.3
Depth	m	1.13
Forward feed Rate	m ³ /h	variable
Media volume	m ³	1.89
Media Area	m ²	438-480
BOD ₅ - Load rate	g/d	1080
Loading Rate	g/m ³ /d	0.25
Blower Hose Length	m	15
Tank volume	m ³	0.59
Retention time	h	2.2
Surface area	m ²	1.21
Rise rate	m ³ /m ² /h	0.22
Depth	m	0.54
Power Supply	V/ph/Hz	230/1/50
Blower	KW	0.115
Controller	Model	Isolator/Panel
Alarms	Model	Power/Blower



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Issue	Date	Drawn by	Description	Thickness:	Surface Area: m ²	Biotec BTAR3 (18PE) Sizing Details	
01	17/02/21	D. Muevaburi	Initial Issue	Material:			
All Dimensions in mm				<p style="text-align: center;">Kingspan Water & Energy reserves the right to alter the details of this drawing without prior notice. This drawing is copyright and may not be reproduced or used without the written permission of Kingspan Water & Energy</p>			
Scale: Do Not Scale							
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