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Our Ref 4120/10 *Your Ref* *Date* 14/4/2010

Nick La Barre Chartered Architect
Easters Court
Leominster
HR6 ODE

Dear Mr La Barre,

Percolation tests for rural drainage
Proposed barn conversion
Court House Farm Richards Castle SY8 4EW

I would refer to percolation tests made on ground at the above property to assess ground porosity for the disposal of effluent. To serve a drainage system at the proposed two bedroom dwelling as shown on the site plan.

Tests were made during the week ending the 10th April 2010. Three pits were formed as shown on the attached plan, within the field SE of the building to be converted.

The tests were made per the guidelines set down in BS 6297 and in compliance with Approved Document H2 of the Building Regulations.

Results are set down as follows. The pits being numbered as on the plan:

Trial pit no 1	
Time to empty (250mm deep sump at base of hole)	= 1hr 50mins
Percolation Value	= 27
Trial pit no 2	
Time to empty	= 1hr
Percolation Value	= 15
Trial pit no 3	
Time to empty	= 1hr 20 mins
Percolation Value	= 20

The above figures are the average over the days of testing. Using the formula in BS6297 and the average percolation value, figures are given as follows for a soakaway to deal with septic tank effluent or for a treated effluent from a small sewage plant.

(a) For septic tank effluent an area of trench base = 18m sq giving a trench length of 30m using a 600 wide bucket on the excavator.

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Percolation tests Court House Farm contd

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(b) For a small sewage treatment plant an area of trench base = 14.5m sq. Which gives a trench length of 24m.

Septic tank types advised per attached diagrams are Clearwater (CPC) 2800 litre or Klargester alpha 2800 litre or similar. Small plants are Acorn Platinum Mini 2000 or WPL Diamond DMS1 or similar.

Trenches should be run across the contour of the site at a slow fall of 1:200 per the guidance.

Yours sincerely,

James Morris –

James Morrison

(1)

parking

garden

house

PIT 1

PIT 2

PIT 3

GENERAL FALL ON SITE

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LOCATIONS OF PERCOLATION TESTS AT COURT HOUSE RICHARDS CASTLE

NORTH

1:200 scale

HEREFORDSHIRE COUNCIL
PLANNING SERVICES:
DEVELOPMENT CONTROL
30 JUL 2010
To:
Ack'd:
File:

(2)

parking

garden

use

PLANT OR S.T. POSITION LOCATED SO AS TO DRAIN BY GRAVITY

S.T. OR PLANT INLET + OUTLET INPECTION CHAMBERS

SOAKAWAY LAID TO FALL 1:200 ACROSS FIELD CONTOUR. FINAL POSITION FIXED BY LEVELLING FOR THE EXCAVATOR

NORTH

1:200 scale

COURT HOUSE
RICHARDS CASTLE

NOT TO SCALE

PLANNING SERVICES
DEVELOPMENT CONTROL
30 JUL 2010
To:
Ack'd:

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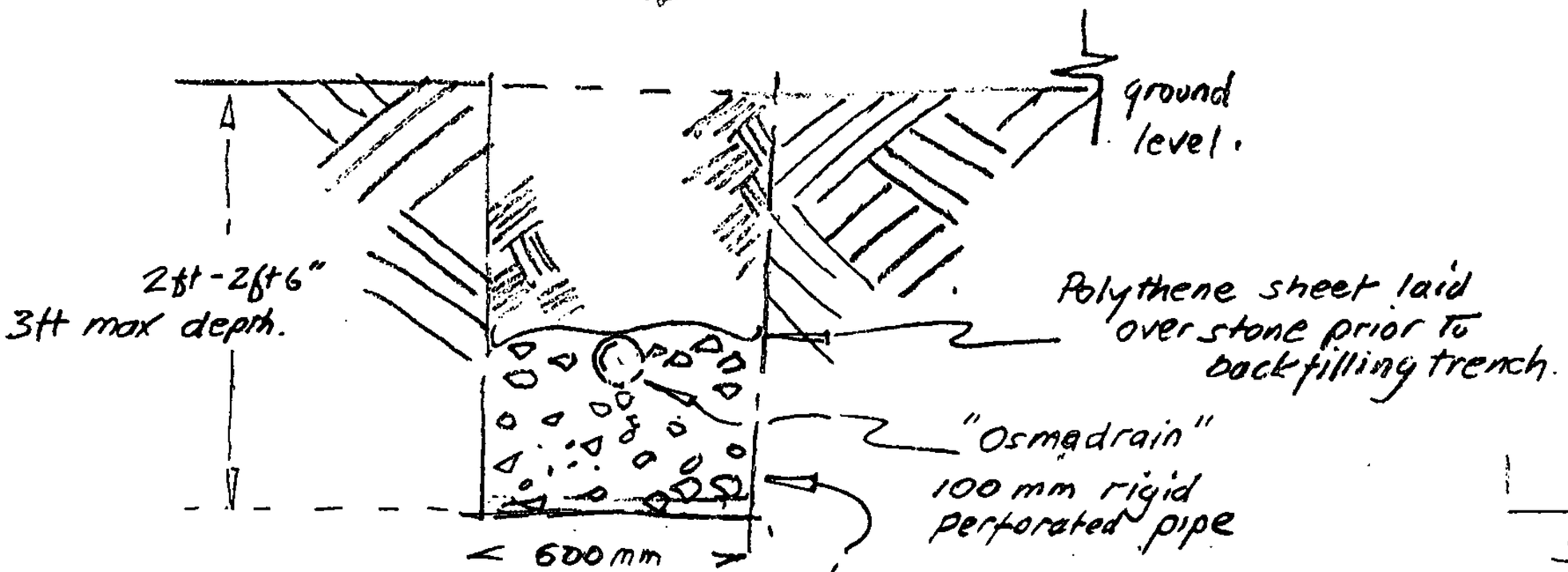
10/1962/F



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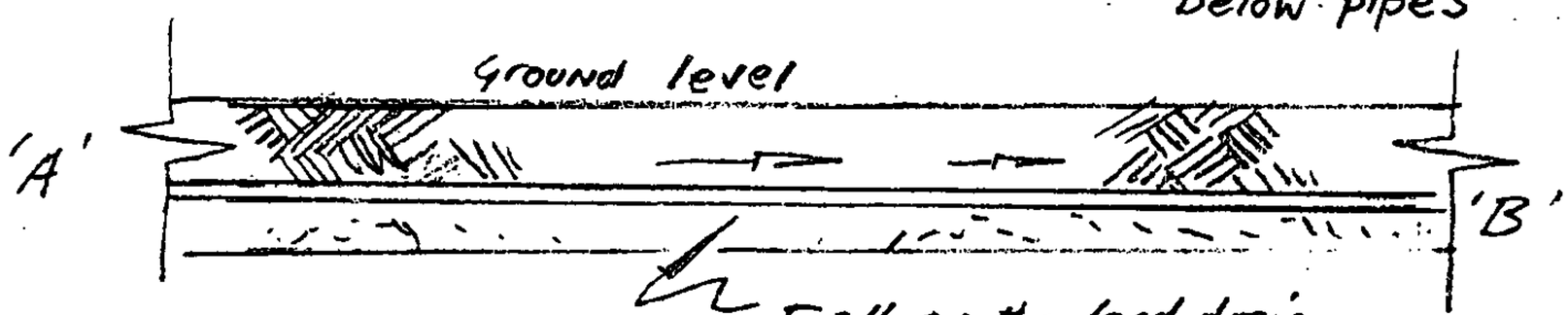
SECTION THRO'.
TYPICAL SOAKAWAY FOR SEPTIC TANK EFFLUENT DISPOSAL



JM06/

Platinum Mini - Sewage Treatment Plant - 6 population

ACORN PLATINUM MINI
SEWAGE TREATMENT PLANTS

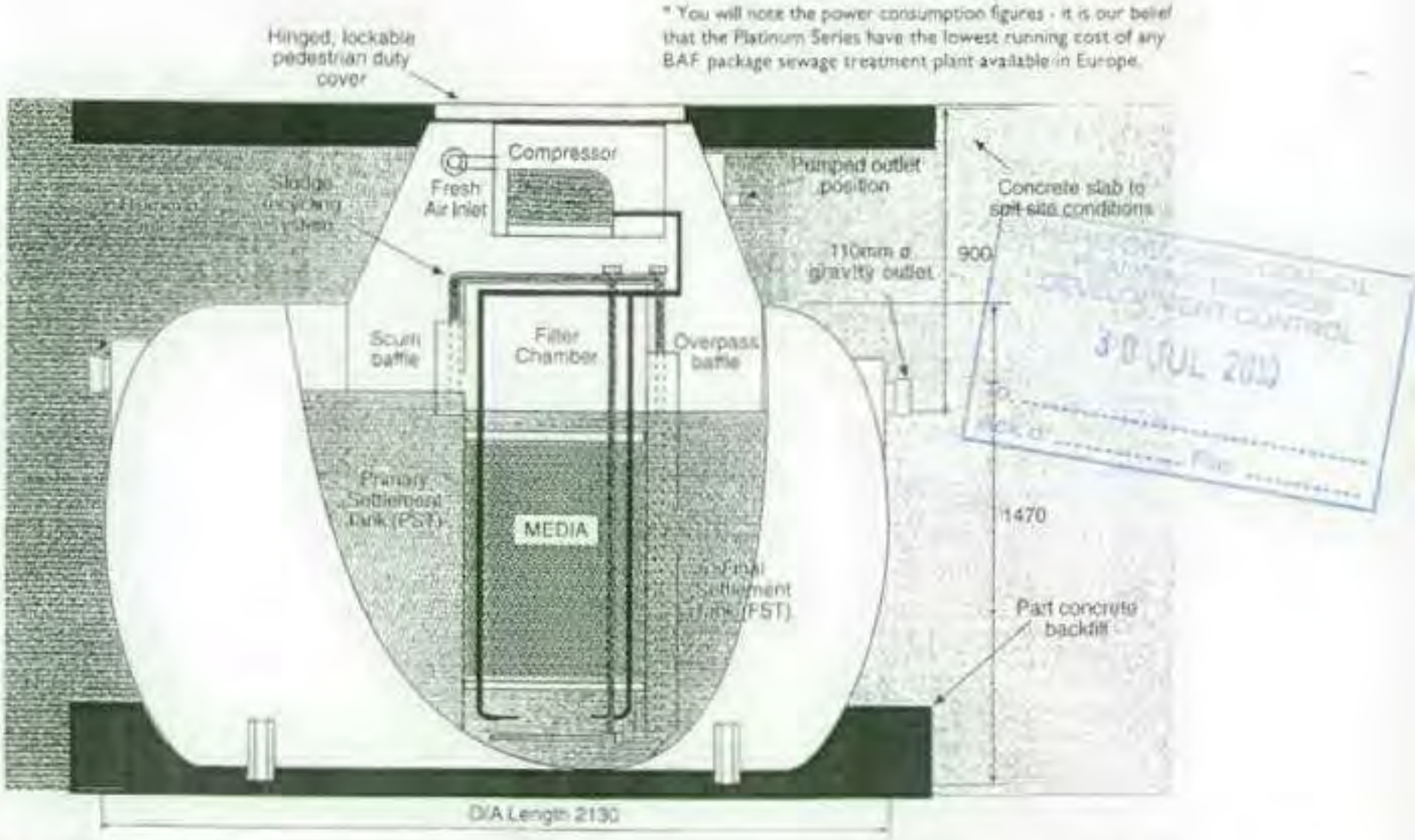
- High process performance
- Environmentally sensitive
- Near silent operation
- Very low energy consumption
- Low maintenance requirement
- Reduced visual impact on surroundings
- Extended warranty
- Low installation costs due to innovative design

PLATINUM 2000 MINI SPECIFICATION

Model Reference	Mini/G	Mini/P
Outlet	gravity	pumped
Population Equivalent	6	6
Max BOD (kg) per day	0.36	0.36
Max NH3N (kg) per day	0.048	0.048
Design Flow Rate - DWF (M^3/day)	1.20	1.20
Average DWF (M^3/hr)	0.05	0.05
(6 persons in any 2hr period)		
Dimensions (mm)		
A - Ground level to inlet invert	800	800
B - Invert to base	1300	1300
C - Outlet to base	1200	1750
D - Overall length	2130	2130
Width	1500	1500
Pipework diameter	110	110/50
Electrical Power Supply	240V 1 ph	240V 1 ph
Power consumption*	*50 Watts	*50 Watts
Weight, Dry Kg	450	460

The information above is based on standard units. Dimension A can be varied to suit conditions and alternative pipework sizes can be easily accommodated.

* You will note the power consumption figures - it is our belief that the Platinum Series have the lowest running cost of any BAF package sewage treatment plant available in Europe.



Acorn Environmental Systems Ltd products are designed and manufactured in accordance with our strict quality control system.

ISO 9002 REGISTERED FIRM

ACORN Environmental Systems Ltd. Somerset Bridge, Bridgwater, Somerset. TA6 6LL

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technical information

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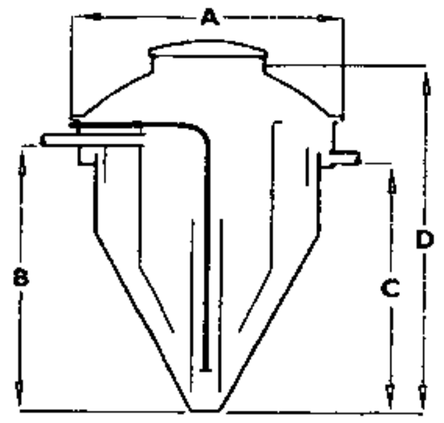
DIMENSIONS



Model	A Outside diameter	B Height to inlet	* Inlet Invert Depth	C Height to outlet	D In ground depth	Weight Empty kilos	Total Capacity litres
DMS1 Tank A	1.85m	1.69M	570mm	1.59m	2.26m	120	2271
DMS2 Tank A	1.85m	1.69M	570mm	1.59m	2.26m	120	2271
DMS3 Tank B	2.1m	1.65M	700mm	1.73m	2.55m	160	3028
DMS4 Tank C	2.1m	2.04M	700mm	1.92m	2.74m	210	3974
DMS5 Tank C	2.1m	2.04M	700mm	1.92m	2.74m	210	3974

** Deeper inverts can be accommodated with our standard invert extensions.*

technical data

Model	DMS1	DMS2	DMS3	DMS4	DMS5
Population range (persons)*	1-3	1-6	5-11	10-15	14-20
Tank size	A	A	B	C	C
Maximum organic loading BOD/day (grams)	180	360	660	900	1200
Maximum average daily flow (litres) **	600	1200	2200	3000	4000
Blower power consumption (kW h)***	0.06	0.07	0.118	0.144	0.215

* *A WPL "Loading Guide" providing further information for non-domestic applications is available.*

** *Peak flow must not exceed 3 x total flow for no more than 1/2 an hour in any 2-hour period.*

*** *Compressor manufacturer's data is an approximation to plant conditions.*

blower installation

The blower is supplied with a housing to protect it in an outdoor environment and should be connected to a single-phase supply (230v) via a suitable IP55 rated weatherproof socket or fused spur (not supplied) by a competent electrician. The blower housing can be disregarded if installing the blower in a garage or outhouse environment. Included are 10m of airline to connect between the blower and the tank. Blower installations of up to 30m from the tank can be accommodated. Please contact WPL or your authorised distributor for advice.

process performance

The Diamond process is designed to perform to the 20:30mg/l BOD:SS Royal Commission standard on a 95 percentile basis. A data sheet explaining the standard in more detail is available from WPL. Process performance is subject to strict adherence to WPL's installation, operation and maintenance manuals, user guides and a start up period, depending on plant loadings and water temperature, over a 6-12 week period. WPL also provides a data sheet that explains how to calculate whether the area you wish to discharge to is suitable for the construction of a soakaway.

system components & materials

Tank – Glass reinforced plastic (GRP), polypropylene, PVC and stainless steel.

Blower – Double diaphragm, linear motored.

delivery

Deliveries within maintand England, Scotland & Wales can normally be guaranteed within 15 working days. Units are shipped on a grouping arrangement and deliveries to some regions may take longer.

WPL Ltd has a policy of continual product development and the above information may be subject to change without notice.

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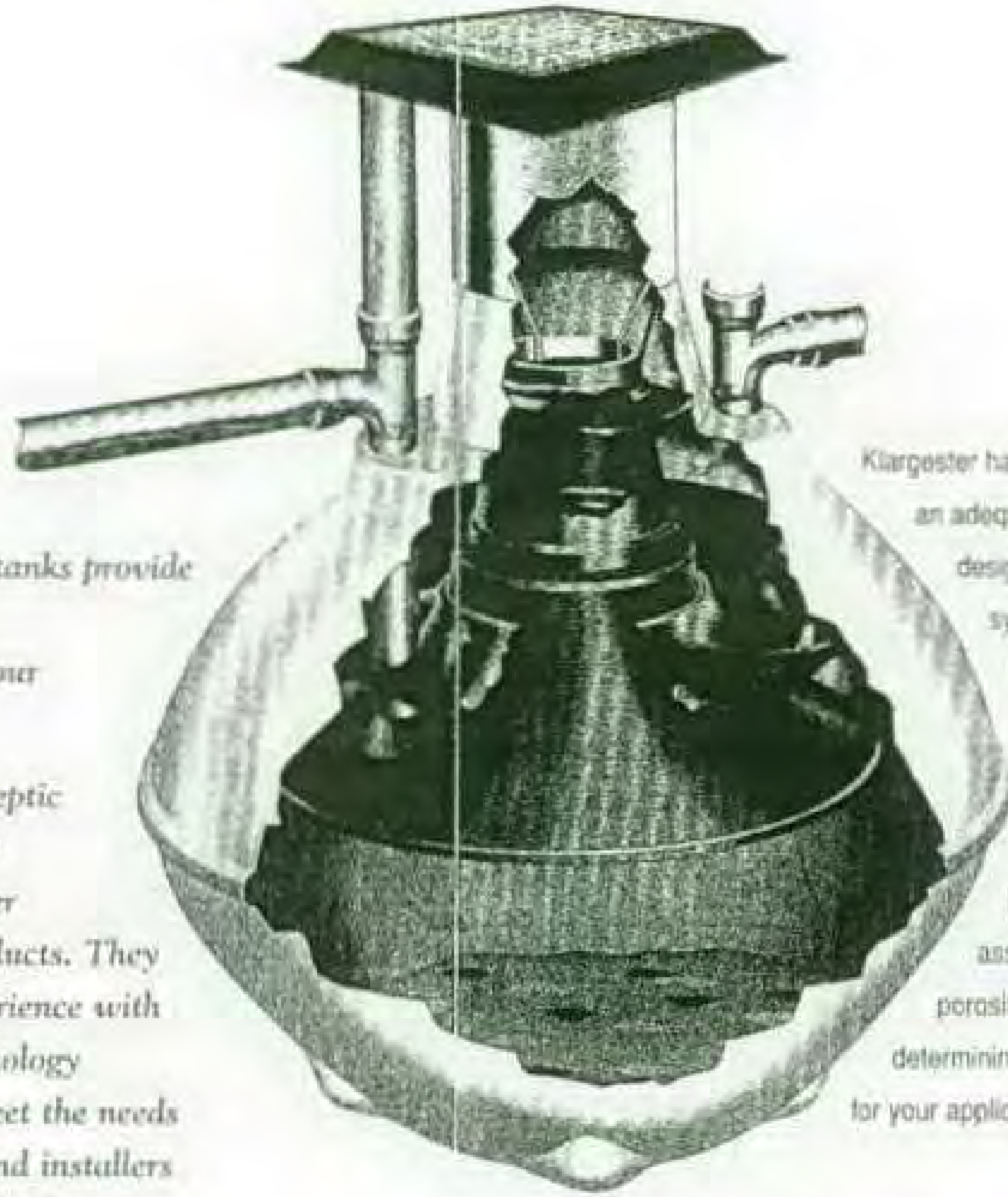


For domestic dwellings without mains drainage, Klargester's Alpha septic tanks provide a reliable, economic and efficient solution to your sewage disposal needs.

Alpha is a new range of septic tanks from Klargester, the leading U.K. manufacturer of off mains drainage products. They combine Klargester's experience with the latest production technology to provide a product to meet the needs of both property owners and installers making Alpha the No. 1 choice.

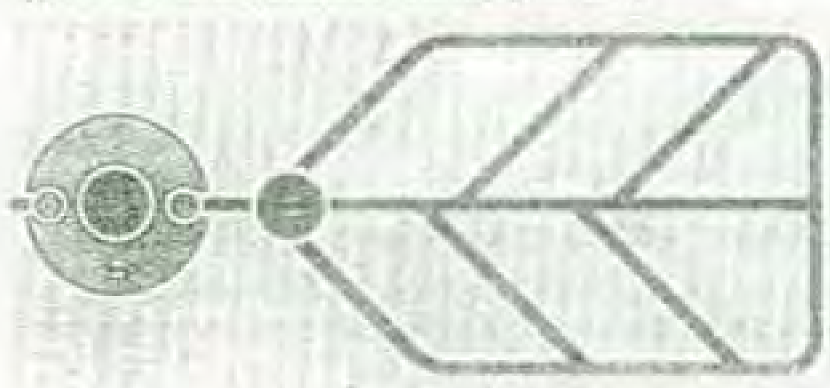
The Alpha Septic Tank comes in three sizes and is suitable for individual domestic dwellings up to a large family house. For other sizes and options please contact Klargester.

Capacity	Number of People assuming a flow of	
Litres	180L/head/day	250L/head/day
2800	4	3
3800	10	7
4600	14	10

Klargester has always maintained that an adequate and properly designed effluent soakaway system is vital to the effective performance of any septic tank system.

Klargester's Technical Department will help you assess the results of porosity tests, when determining the size of soakaway for your application.

Typical Sub-surface effluent soakaway (plan view)



1. Septic tank 2. Inspection chamber (desirable)

Features and Benefits of the Klargester Alpha Septic Tank

New internal baffle design within the tank aids separation and retention of solids improving the effluent quality thus providing a long life to the soakaway.

α

Made from composite GRP – strong, light, chemically resistant and watertight.

α

Press moulded shape provides wide, squat, form which makes the tank easy to install and handle.

α

Stable base for storage.

α

Shoulders are provided to aid lifting and positioning within the excavation.

α

All unit volumes are designed in accordance with the recommendations given in B.S. 6297: 1983.

α

The new manufacturing process minimises styrene emissions and reduces waste – all the better for our environment.

Septic Tanks & Cesspools

For the Settlement, Storage and Disposal of Effluent for Domestic and Commercial Applications

The CPC units are available in two shapes, spherical and cylindrical, and include sizes suitable for all applications from a single household to a large industrial or commercial complex.

CPC septic tanks are designed to meet both the installation requirements and the standards of discharge specified by BS 6297: 1983.

CPC tanks are used for domestic sewage disposal where connection to a mains sewer is not practical.

The septic tanks in the range all achieve a high degree of settlement, producing a quality of effluent for discharge to a land drainage system.

Septic Tanks & Cesspools

A septic tank consists of a two or three chamber system that retains sewage from a property for sufficient time to allow the solids to form into sludge at the base of the tank, where it is partially broken down through anaerobic digestion. The remaining liquid in the tank then overflows from the tank by means of an outlet pipe to a drainage field.

Spherical septic tanks and cesspools are manufactured as standard from 2,800 to 9,000 litres net working capacity.

Cylindrical septic tanks are available with capacities from 12,000 to 54,000 litres. The cylindrical tank allows reduced depth excavation in comparison with the same size of spherical tank, offering considerable savings where ground conditions are difficult or where there is a high water table.

The spherical tank is the simplest and most economical solution to domestic sewage disposal

The cylindrical tank allows reduced depth excavation, resulting in cost savings

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Septic Tank and Cesspool Selection Chart

Capacity Litres	Septic Tanks		Cesspools	
	Spherical	Cylindrical	Spherical	Cylindrical
2800	STS02810AAB*	-	CPS028101AB*	-
3800	STS03810AAB*	-	CPS038101AB*	-
4600	STS04610AAB*	-	CPS046101AB*	-
6000	STS06010AAB**	-	CPS060101AB	-
7500	STS07510AAB**	-	CPS075101AB	-
9000	STS09010AAB**	-	CPS090101AB	-
12000	-	PST12010AAB	-	PCP120101AB*
13600	-	PST13610AAB	-	PCP136101AB*
18000	-	PST18010AAB	-	PCP180101AB*
22500	-	PST22510AAB	-	PCP225101AB*
27000	-	PST27510AAB	-	PCP275101AB*
36000	-	PST36010AAB	-	PCP360101AB*
45000	-	PST45010AAB	-	PCP450101AB*
54000	-	PST54010AAB	-	PCP540101AB*

** All supplied with 110mm inlet/outlet only. ** All supplied with 110mm/160mm inlet/outlet only. All other units supplied with 160mm inlet/outlet only. Larger sizes available on request.*

Cesspools are designed for storage only, with their contents being emptied at regular intervals using tankers. High Level Alarms with audible and visual warnings are available for all tanks to enable level monitoring for optimum use.

When sizing a cesspool for domestic properties it must be noted that under the Building Regulations it must have a minimum capacity of 18,000 litres (2 people) under Environment Agency regulations.

When siting units there are a number of factors to be considered. Systems should not be positioned closer than 7 metres to any dwelling and as far as possible from any watercourse, normally not less than 10 metres. Adequate access to tankers for emptying should also be taken into consideration.

Silage Effluent Tanks

CPC silage effluent tanks are manufactured using special resins, designed to be resistant to aggressive silage effluent for a minimum period of 20 years and to comply with all statutory regulations.

Silage effluent has the potential to cause severe environmental damage if allowed to enter a watercourse. Silage effluent has a very high BOD (Biochemical Oxygen Demand), up to 200 times greater than that of domestic sewage. Therefore, if it enters a watercourse it can very quickly remove all of the oxygen and kill off all aquatic life within the ecosystem. As silage effluent has caused numerous severe pollution incidents in the countryside, there are now a number of very strict statutory controls to regulate its collection and storage.

Under the 'Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulation' of 1991, a number of very strict rules must be adhered to with respect to the storage and removal of silage effluent. These regulations are enforced by the Environment Agency in England and Wales and infringements of these regulations may result in prosecution and fines.

Contact Clearwater Process Control for advice on the design, construction and installation of your silage effluent tank requirements.

cpc

Clearwater Process Control Ltd