

# Sump & Pump

## Technical Information Guidance Note

## 1. Introduction

This guide is designed to help understand how to spec the right pump for each situation, using calculations for flow rate and vertical head. This guide also covers how the sump and pump systems are installed on site.

This guide will also provide you with more information about what each of our CD Pumps can do.

## 2. Calculating the Number of Sump and Pumps

For cavity drain systems incorporating perimeter channel, there should be a minimum of one sump per 50 linear meters of channel. For systems incorporating sub-floor drainage, we recommend a minimum of one sump per 150m<sup>2</sup> floor area.

Where water ingress cannot be measured, the flow rate calculation for water seepage should be based on 0.1l/s per 100m<sup>3</sup> (or 0.001l/s/m<sup>2</sup>) of basement floor and wall areas for basements above the water table. Flow rate calculation of floor and wall areas below the water table is calculated at 0.2l/s per 100m<sup>3</sup> (or 0.002l/s/m<sup>2</sup>). Allow a safety factor of five when selecting a pump duty.

*E.g.*

$$\text{Slab: } 30\text{m} \times 5\text{m} = 150\text{m}^2$$

$$\text{Wall 1: } 30\text{m} \times 3\text{m} \times 2\text{no} = 180\text{m}^2$$

$$\text{Wall 2: } 5\text{m} \times 3\text{m} \times 2\text{no} = 30\text{m}^2$$

$$\text{Total Area} = 360\text{m}^2$$

*Multiply total area by flow rate (based on the above recommendations) and factory of safety*

$$360\text{m}^2 \times 0.001\text{L/S/M}^2 \times 5 = 1.8\text{l/s}$$

The second calculation (to make sure you have the right pump) is to calculate the Pump Head. It is important to ensure that the Pump Head for the discharge for the cavity drain system pump(s) is calculated correctly as this greatly influences the overall performance of the system.

The vertical lift calculation MUST include the depth of the sump and the total vertical height of the discharge pipe to its highest point (this is not just the floor-to-ceiling height but should include depths of floors through which it passes).

Discharge pipe runs should accommodate the vertical lift before any level of horizontal run. For Any changes in direction, you must add on 1/4m (**E.g. 4 changes in direction would total an extra metre on top of the total head**) and for any horizontal lengths you should add 0.11m per metre onto the total head (**E.g. 6m = 0.66m**)

E.g.

*Size of the Sump: 600mm (0.6m)*

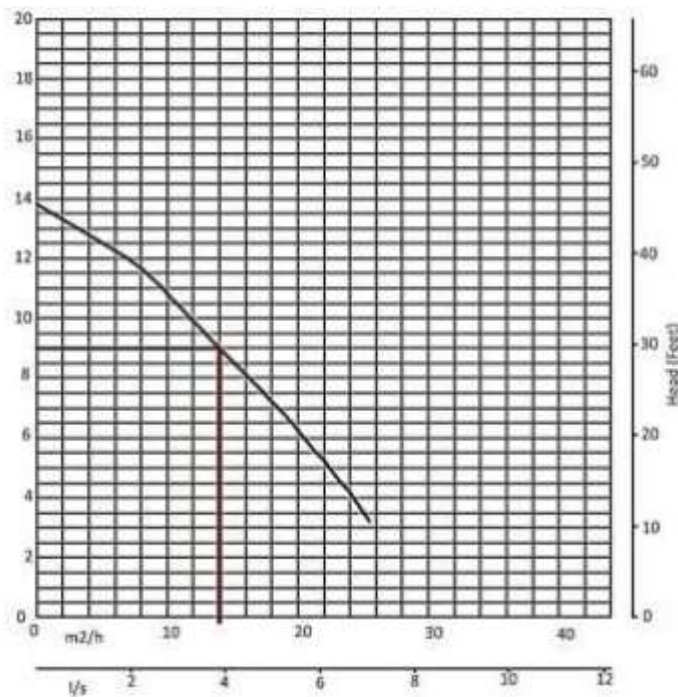
*Horizontal run: 3m x 0.11= 0.33m*

*4x Bends: 4x 0.25= 1m*

*Vertical lift: 7m*

*Total head: 8.93m*

Once the total pumped head and flow rate have been calculated, refer to the pump curves also known as Q/H curves (you will be able to find this in our PUDLO CD PUMP AND CD PUMP PRO Datasheets), select the pump that meets the duty at the point of best efficiency (typically in the middle third of the pump curve with an allowance of 10% +/-) Below is an example of the pump curve:



### 3. PUDLO CD PUMP & PUDLO CD PUMP PRO

Both systems consist of a polyethylene chamber with twin automatic waste water submersible pumps, high-pressure internal pipework and fittings, non-return valves, access cover and alarm. They are both suitable for installing either at the initial building stage or retro-fitting to existing buildings.



The only difference between the two systems is that the **PUDLO CD PUMP PRO** has stronger pumps which will ultimately pump the discharged water further and faster from the sump. Below is data for both the **PUDLO CD PUMP** and **PUDLO CD PUMP PRO** showing what each pump can do, coupled with the calculations for Pump head and flow rate. You can use the pump curve graph to see which pump will do the job best.

#### PUDLO CD PUMP- Spec

##### MODELS

**PUDLO CD Pump**  
50-100 litre storage capacity  
(depending on inlet level).

##### CHAMBER DIMENSIONS

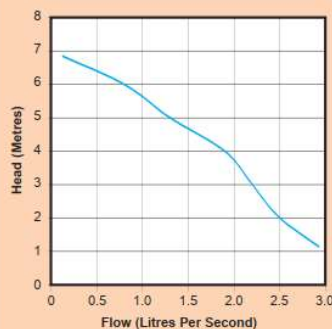
Model	Diameter	Depth
PUDLO CD Pump	600mm	600mm

##### CONTROL PANEL DIMENSIONS

Model	Length	Width	Depth
AquaSafe	122mm	124mm	85mm

**WEIGHT** 50kg

##### PUMP CURVE



##### TECHNICAL SPECIFICATIONS

Power supply	230V AC
Rated current	1.9A
Motor rating	180W
Frequency	50Hz
Revolutions per minute	2800rpm
Max. head	6.8m
Max. flow rate	2.9 l/s
Max. liquid temp.	<40°C
Discharge size	1no. 1¼"
Cable Length	5m

## PUDLO CD PUMP PRO- Spec

### MODELS

**PUDLO CD Pump Pro**  
50–100 litre storage capacity  
(depending on inlet level).

### CHAMBER DIMENSIONS

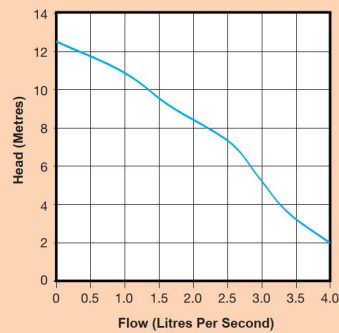
Model	Diameter	Depth
PUDLO CD Pump Pro	600mm	600mm

### CONTROL PANEL DIMENSIONS

Model	Length	Width	Depth
AquaSafe	122mm	124mm	85mm

**WEIGHT** 55kg

### PUMP CURVE



### TECHNICAL SPECIFICATIONS

Power supply	230V AC
Rated current	4.9A
Motor rating	500W
Frequency	50Hz
Revolutions per minute	2800rpm
Max. head	12.5m
Max. flow rate	3.9 l/s
Max. liquid temp.	<40°C
Discharge size	1 no. 1¼"
Cable Length	5m

## 4. Servicing and Monitoring of the Sump and Pump

A schedule of maintenance should be incorporated in the design of the waterproofing system. We can advise the customer on this but ultimately this will be addressed by either Edincare or third-party engineer. Edincare recommends that the first service should take place within the first three to six months from installation. After the first service, the next two services should be every two months. This will be up to Edincare to arrange with the client as per a service agreement.

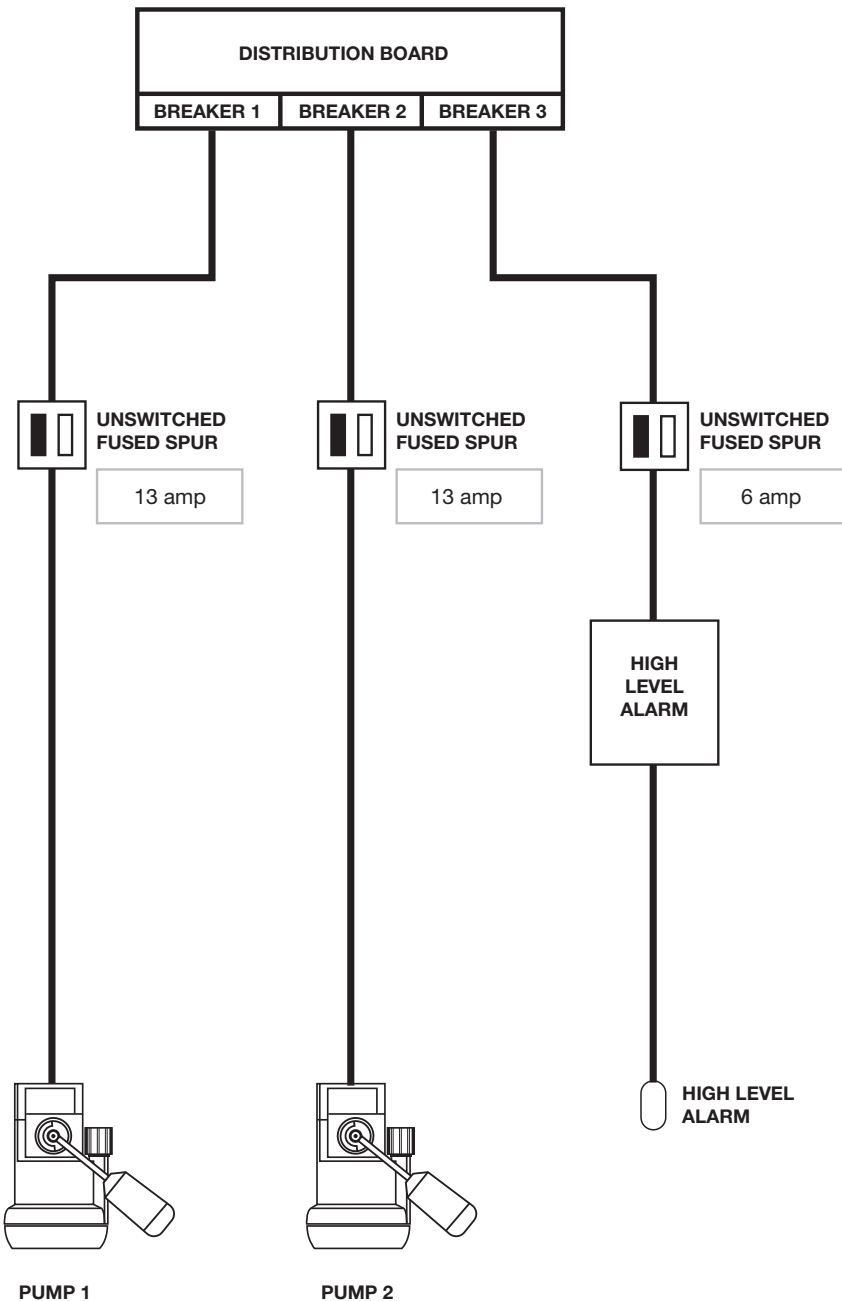
The monitoring of the sump and pump can be done by Edincare as well using their Aqua365 system, this will be discussed by Edincare. This system gives the client a 24-hour call out service 365 days of the year which will cover them whenever the sump and pump alarm is triggered. For further information, refer them to Edincare aftersales team about this service.

**Note: For installation of pumps, please refer to PUDLO CD Pump and PUDLO CD Pump Pro Installation Manuals. All Electrical wiring of the PUDLO CD Pump and PUDLO CD Pump Pro must be carried out by a qualified electrician and to be wired as per the Electrical Wiring Diagrams below.**

# PUDLO CD PUMP – ELECTRICAL DATA SHEET

High level alarm panel, pump(s) controlled via their own integral float switch.

REVISION	0.1	DATE	11/12/2018	PROJECT	
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POWER / BREAKER REQUIREMENTS	
POWER	<input checked="" type="checkbox"/> 240V <input type="checkbox"/> 415V
BREAKER 1	
BREAKER TYPE	Class C
BREAKER SIZE	10 amp
BREAKER 2	
BREAKER TYPE	Class C
BREAKER SIZE	10 amp
BREAKER 3	
BREAKER TYPE	Class B
BREAKER SIZE	6 amp

DIMENSIONS – CONTROL PANEL	
HEIGHT	122mm
WIDTH	124mm
DEPTH	85mm

PUMP ELECTRICAL DATA	
PUMP MODEL	Ama-Drainer 301
RATED POWER (P2)	180W
FLC	1.9A

# PUDLO CD PUMP PRO – ELECTRICAL DATA SHEET

High level alarm panel, pump(s) controlled via their own integral float switch.

