

CAVITY DRAIN MEMBRANE SYSTEMS: SUMPS AND PUMPS – GUIDANCE NOTES

Introduction:

In most cases when installing the Isola Platon cavity drain system the actual level of water ingress or potential level of water ingress is not known. However in accordance with BS 8102 (2009) **it must be assumed that water will ingress at some point in time.** BS 8102 (2009) states that all type 'C' drained protection systems need to be maintainable.

1. Pump Capacity:

If the water ingress is known then the required minimum capacity of the sump and pump system can be easily calculated. The capacity of the sump pump is affected by a number of factors and these need to be taken into account when calculating the capacity of your pump system, these include:

- 1 Internal diameter of discharge pipe
- 2 Length of discharge pipe
- 3 Head height (including depth of sump chamber)
- 4 Number of bends/angles in discharge pipe
- 5 Stated capacity of pump

Each of the above **will** affect the capacity of the installed pump. All pumps have a stated maximum capacity and maximum stated head that they are able to pump to, manufacturers figures are given for a stated diameter of pipe. Therefore any variations of these and the pumps capacity will be changed.

2. Number Of Sumps:

The number of sumps required will again vary depending on the volume of water ingressing and or anticipated within the system, and the size of the floor area being covered as well as the type of drainage system incorporated into the design specification. In general there should be at least one sump per 50 linear meters of Aqua Channel.

3. Type Of Sump:

The type of sump is also important, perforated sump chamber or non perforated sump chamber. In general either sump chamber may be suitable however where the following site conditions occur then **ONLY** the non perforated chamber should be installed:

- High water table
- High perched water table
- High silt/sediment content in groundwater
- Risk of de watering where structure maybe undermined

If there is any concern it is better to install a non perforated chamber or seek further technical assistance (contact Triton technical dept on: **01322 318830**).

4. Number Of Pumps:

If the level of water ingress is known then the required pump capacity can be calculated taking into account the length of discharge pipe, head height etc.. as indicated in section 1 above. Then it is a simple multiplication of the number of pumps to cope with the required level of ingress (plus a safety factor).The pumps capacity should be at least 2 to 3 times that which is currently required at time of installation.

E.G. If 100 l/min of water is ingressing then pump capacity should be 2-300 l/min, therefore if single pump capacity has been calculated to 50 l/min then four pumps to be included within the system.

As with all mechanical items they are prone to failure and require regular maintenance. Pump failure could either be from mechanical failure, power failure or lack of maintenance. It is for these reasons that it is best practice to install a **minimum of two pumps per sump chamber**. These can either be two 240v mains powered pumps or a mains powered pump and a battery back up pump. Therefore should one pump fail for what ever reason the second pump will take over. This is also true if the level of water ingress increases to such an extent that the first pump cannot cope the second pump will “kick in” to assist.

Thus reducing the risk of the basement flooding!

5. Maintenance:

As previously stated the sumps and pumps need to be maintained, **this should be carried out every 6-12 months.** A typical pump, sump, and drainage schedule is available from Triton as a guide and is the **minimum maintenance required.**

It is important that if during a maintenance visit the level of water ingress has increased, and the capacity of the system is near optimum, then under the bounds of "DUTY OF CARE" the client should be advised that the system needs upgrading. This may include changing the pumps for those with a higher capacity, increasing the number of pumps, or increasing the number of sumps and pumps within the system.

As with the ongoing maintenance this is chargeable!