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**INSTALLATION, OPERATING & MAINTENANCE
GUIDELINES FOR RAINTRAP**



Kingspan Environmental Service Contact Numbers:

UK: 0844 846 0500

NI: 028 3025 4077

IRL: 048 3025 4077

Enclosed Documents

DS0793P	Raintrap Tank Installation drawing
DS0795P	Raintrap Tank Sales drawing

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02	CC948	June 2011
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HEALTH & SAFETY

THESE WARNINGS ARE PROVIDED IN THE INTEREST OF SAFETY. YOU MUST READ THEM CAREFULLY BEFORE INSTALLING OR USING THE EQUIPMENT.

These Guidelines represent Best Practice for the installation of our spherical tanks. Many years of specialist experience has led to the successful installation of thousands of units. It must be noted, however, that these Guidelines are necessarily of a general nature. It is the responsibility of others to verify that they are appropriate for the specific ground conditions and in-service loads of each installation. Similarly, a qualified specialist (e.g. civil engineering consultant or certified installer) must verify any information or advice given by employees or agents of Klargestor regarding the design of an installation.

It is important that this document is retained with the equipment for future reference. Should the equipment be transferred to a new owner, always ensure that all relevant documents are supplied in order that the new owner can be acquainted with the functioning of the equipment and the relevant warnings.

INSTALLATION SHOULD ONLY BE CARRIED OUT BY A SUITABLY EXPERIENCED CONTRACTOR, FOLLOWING THESE GUIDELINES. ELECTRICAL WORK SHOULD BE CARRIED OUT BY A QUALIFIED ELECTRICIAN.

When covers are removed precautions must be taken against personnel falling into the unit.

Should you wish to inspect the operation of the equipment, please observe all necessary precautions, including those listed below, which apply to maintenance procedures.

Ensure that you are familiar with the safe working areas and accesses & that the working area is adequately lit.

Take care to maintain correct posture, particularly when lifting. Use appropriate lifting equipment when necessary. Keep proper footing and balance at all times. Avoid any sharp edges.

The removal of sediment should be carried out by a contractor holding the relevant permits to transport and dispose of such waste. The contractor must refer to the guidelines in this document.

AS WITH ALL SITE WORK, THE DANGERS OF WORKING WITH WATER AND ELECTRICITY POSE SEVERE THREATS TO HEALTH, IF OBVIOUS AND FUNDAMENTAL PRECAUTIONS ARE NOT TAKEN. THEREFORE IF YOU ARE IN ANY DOUBT REGARDING ANY OF THE FOLLOWING, PLEASE DO NOT HESITATE TO CONTACT US.

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1 SITING

- 1.1.1 Where possible, take advantage of any gradient across a site to minimise the invert depth at the tank inlet, as this will reduce excavation. The tank neck can be trimmed to suit, subject to retaining a minimum inlet invert. For frost protection a minimum invert depth of 600mm is recommended.
- 1.1.2 Avoid siting tanks in ground with a large gradient directly around the proposed position, as this can cause excessive ground pressure on the tank.
- 1.1.3 Our tanks are not designed to accept any traffic loads. A minimum traffic clearance must be provided as indicated in the table below. If this is not possible the tank must be protected from superimposed loads, e.g. by a reinforced concrete surround and provided with an appropriate cover, which must not bear on the structure of the tank. Please contact a consultant civil engineer

Tank Capacity (litres)	Radius of protected area to be no less than the drain invert depth plus:
2800	2.1m
3800	2.4m
4600	2.6m

2 BEFORE INSTALLING YOUR TANK

- 2.1.1 Ensure Building Regulation approval.
- 2.1.2 Ensure ground porosity is suitable.
- 2.1.3 Inspect tank for damage before installation. Our tanks have been fully tested before despatch from our factory. Once the tank has been installed, we cannot accept claims for damage.
- 2.1.4 Check that you have the correct invert drain depth (neck height) of tank. A label indicates the maximum permissible depth.
- 2.1.5 Check orientation and heights of inlet and outlets.

2.2 DO:-

- 2.2.1 Use the correct backfill material.
- 2.2.2 Site the tank at the furthest practical location from habitable dwellings. Most building regulations recommend a minimum of 7m.
- 2.2.3 Consider drainage falls, generally 1 in 60/70 between house and tank and maximum 1 in 200 for soakaways or other irrigation systems.
- 2.2.4 Lift the tank using ropes or slings through both of the shackles fitted either side of the neck.

2.3 DO NOT:-

- 2.3.1 Subject the tank to impact or contact with sharp edges.
- 2.3.2 Add neck extensions to the tank, nor, build a brick manhole above the tank neck (as this increases burial depth of the tank). We do not recommend extending the neck of the tank under any circumstances.
- 2.3.3 Install tank deeper than the depth that the fitted neck will allow.
- 2.3.4 Install in trafficked areas without a suitable backfill design.
- 2.3.5 Site the tank so that it is subjected to excess ground pressure (e.g. sloping sites) or applied loads such as may be generated by the proximity of vehicular traffic.
- 2.3.6 Lift using only one of the shackles.
- 2.3.7 Fill an unsupported tank.

3 TANK INSTALLATION

- 3.1.1 Excavate a hole to appropriate depth allowing at least 300mm for concrete and hard-core base. Allow for tank width plus at least 400mm with additional allowance for any necessary shuttering. De-water the excavation using suitable pumping equipment. Ensure that the pump discharge does not saturate the ground in the immediate vicinity. De-watering is to continue until you are satisfied that the concrete has cured.
- 3.1.2 Lay at least 150mm of hard-core in the base of the excavation. Line the complete excavation with polythene sheeting.
- 3.1.3 Lay a bed of concrete (minimum 150mm thick) on top of the polythene at the base of the excavation.
- 3.1.4 Lower the tank onto the concrete bed, ensuring that the inlet and outlet are in the correct position.
- 3.1.5 Ensure the tank is upright and then ballast it with water to a maximum of 500mm deep.
- 3.1.6 Haunch up the concrete bed at least 450mm all round the base, ensuring that all voids in the concrete are eliminated and at least 150mm of concrete is left below the tank base.
- 3.1.7 Backfill to the invert depth with concrete. Ensure that the water level inside the tank is maintained no more than 250-300mm above concrete backfill level. Backfill evenly all round the tank, consolidating in layers. The backfilling should start before the base has hardened and be a single continuous operation so that the tank has a full concrete jacket without joins.
- 3.1.8 DO NOT use vibrating rammers to consolidate concrete. DO NOT discharge concrete directly on to tank.
- 3.1.9 Align and connect pipework.
- 3.1.10 Build up a shell of concrete around neck of tank to 150-200mm thickness before completing the backfill with a suitable material. Care must be taken to avoid distortion of the neck whilst concreting this area. Support the neck with a temporary internal brace or frame. (Covers & frames are available for separate purchase).
- 3.1.11 Fit cover and frame. Apply surface finish e.g. turf.
- 3.1.12 Do not empty tank until the concrete backfill has cured. Tanks may be left filled with water.

4 PIPEWORK INSTALLATION

- 4.1.1 Break into the rainwater downpipe and divert the flow to the side marked 'Inlet'
- 4.1.2 Take the outlet back to the down pipe and make a new connection below the 'take off' for the Raintrap tank or re-connect directly to a waste outlet gully.
- 4.1.3 Place the pump into the tank and attach the lifting rope to the manhole cover frame. Attach the flexible pipe from the pump to the inside of the tank connector in the tank. **DO NOT OVERTIGHTEN.**
- 4.1.4 Attach the pump cable to the draw wire and pull the cable through the conduit into the fused switch.
- 4.1.5 Fix the switch to the wall or on a suitable post.
- 4.1.6 Use a qualified electrician to wire the switch to an RCD (not supplied)
- 4.1.7 Switch the unit on and test. Switch off.

5 OPERATION

- 5.1.1 To start pumping, switch the unit on at the fused switch.
- 5.1.2 **REMEMBER** Always switch the unit off before the tank is empty or damage to the pump will occur.
- 5.1.3 Check the leaf filter at regular intervals and remove and wash if required.

6 WARRANTY

Warranty (Taken from KINGSPAN ENVIRONMENTAL 'Terms & Conditions of Sale')

- (a) The company will replace or, at its option, properly repair without charge any goods which are found to be defective and which cause failure in normal circumstances of use **within a period of twelve months from the date of delivery.**
- (b) This warranty is conditional upon:
 - (i) the Buyer notifying the Company of any claim within Seven days of the failure becoming discernible
 - (ii) the Company being allowed a reasonable opportunity to inspect the goods so as to confirm that they are defective
 - (iii) the goods not having been modified, mishandled or misused and being used strictly in accordance with any relevant instructions issued by the Company.
- (c) The Company's liability under this Clause is limited to the repair or replacement of the defective goods, and does not cover costs of transport, installation or associated site costs, if applicable.
- (d) The Company's liability to replace or repair the goods is in lieu of and excludes all other warranties and conditions, and in particular (but without limitation) the Company shall have no liability of any kind for consequential loss or damage.
- (e) All parts supplied free of charge as warranty replacements have a warranty period limited to that of the product to which they are fitted.
- (e) For any further advice, please contact the Warranty Department on 0844 225 2785

A Warranty Form is included in this package, to register your unit for Warranty please complete ALL sections of the Form, and return it at your earliest convenience.