



October 2007

# **One Piece Cold Water Storage Tanks**

## **Installation & Maintenance Instructions**

**Note :**

- Guarantees are only valid if tanks are installed and maintained strictly in accordance with the following instructions.
- Copies of Maintenance and Installation instructions should be passed on to the end user.
- The end user should ensure that tanks are maintained in accordance with BS 6700



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## Guidelines for Locating Water Tanks

### **General**

The following recommendations are generally for elevated tanks, as tanks at elevated positions can cause serious damage to the surrounding area in the event of wall, pipe or structural support failure resulting in water spilling out at a fast rate. Consideration must be given to minimise the effects of such an occurrence, in terms of the positioning of the tank and regular inspection for defects.

- Water tanks should be located so as to prevent water damage or consequential loss in the event of leakage howsoever occurring.
- All tanks which are located above water sensitive areas should have a bund wall around them with adequate evacuation ducts.
- All other tanks should have Condensation or Drip trays to prevent nuisance damage and to keep floors dry.

Over the years we have seen tanks fail due to age, lack of maintenance, failure of the structural supports underneath the tanks, contaminated water attacking the internal fittings, ball valve failure where overflows were not fitted, vandalism etc.

### **Water Tanks on top of Buildings**

Water tanks located on top of any building should be sited at least 1.2 meters away from the edge of the building.

It would be preferable if the water tank was sited 1.5 times the height of the tank away from the edge of the building. In the event of failure, this would allow the water to spread itself over a much wider area before spilling over the edge of the building and possibly taking personnel or debris with it.

### **Water Tanks on Elevated Structures**

For water tanks located on top of elevated structures, a walkway of at least 1 meter should be provided all round the water tank to allow for maintenance and inspection. This walkway should comply with health and safety regulations.

### **Potable Water Tanks**

To comply with the Health & Safety Executive regulations on the Control of Legionellosis 1998, Cold Water Storage Tanks must be located in areas that are “*readily accessible for cleaning*”. Regular Maintenance and Inspections as required by Health & Safety Legislation.

## One Piece Tanks

KMG Killarney Plastics Manufactures a variety of One Piece cold water storage tanks. They are durable, one piece constructions are easy to install and represent excellent value for money. These come in sizes from 45 to 2275 Litres. One piece tanks can also be supplied Insulated to Format 30, thus meeting Dublin Corporation requirements for Break Tanks.

The Following Sizes are EX stock

Length	Width	Height	Height if Insulated	Litres	Gallons
495	370	345	420	45	10
670	530	565	640	182	40
1230	575	575	650	318	70
1310	680	610	685	454	100
1645	1075	545	610	682	150
1660	1055	690	765	909	200
1660	1055	845	920	1136	250
1660	1245	845	1015	1363	300
2545	1330	615	775	1818	400
1880	1375	1140	1300	2275	500
2690	1830	1040	1047	3637	800
2688	1674	1319	1319	4546	1000

- All the above capacities are nominal.
- Insulated One Piece Tanks come complete with insulated covers.
- GRP covers and Condensation trays are available for all sizes.
- When the tanks are installed space is required above the tanks for access.

### **IT IS IMPORTANT THAT THE BASE OF THESE TANKS BE FULLY SUPPORTED IN USE.**

- a. Ensure that the base of the cistern is adequately and uniformly supported over its whole area.
- b. Support and align the pipes so as not to distort the cistern, and do not over tighten the back nuts.
- c. Ensure that circular holes for fixing pipes have a clean edge, free from notches, and cut them with a hole saw or drill them with a sharp cutter.
- d. Position the cistern so that it is not in close proximity to any source of heat.
- e. The tank should not be left unattended during commissioning.
- f. Check that internal steel stays are in place.
- g. Adequate overflows should be fitted to prevent the tank from being pressurised.
- h. Tanks in exposed places may be susceptible to movement in high winds, especially when empty.

### Condensation Trays

- KMG Killarney Plastics manufacture condensation trays to suit all sizes of Water Storage Tanks.
- Condensation Trays should be used in any instance where condensation, drips from pipe work or from the tank could cause nuisance damage or render floors wet and slippery.
- Condensation trays should be water tested at time of testing tank.

**A condensation tray is not a substitute for a bund wall or for tanking out a room.**

**APPROPRIATE OVERFLOWS MUST BE FITTED AS CLOSE AS POSSIBLE TO THE BASE OF THE TRAY. THESE MUST BE FITTED BEFORE THE TANK IS FILLED.**

## **Tanks Insulated and Finished to Format 30**

- Current legislation states that water hot or cold, in any premises that might be used for human consumption must be of potable quality.
- In addition to tank material specifications, there are now further requirements for lid design, the screening of vents, breathers, overflows, warning tell tale pipes and the provision of insulation which will help prevent freezing and also help keep water as cool as practicable, ideally less than 20°C.
- Format 30 is KMG Killarney Plastics description of tanks with covers, complete with screened vents, overflows, warning pipes etc and having side wall and lid with a (u) value of 2.5 w/m<sup>2</sup>K. This value meets the requirements of section 30 of the water bye laws in the majority of situations. Tanks in boiler rooms etc may also need additional base insulation. The purchaser can specify extra requirements or thermal transmittance after considering the period of protection necessary, the tank location and the surrounding conditions.

**Please Note :** Insulation slows down but does not prevent heat loss or gain over protracted periods. Additional information is available in BS 7491 & BS 6700.

## **Pipe Connections for Cold Water Storage Tanks.**

- If the tank is to be drained down at a fast rate or by pumps etc, KMG Killarney Plastics should be contacted so that adequate vents can be placed on the tank. The standard vent is 1”.
- Connections of 100mm (4”) nominal bore or over require studded flange pads to suit BS 1962, table D&E flanges for pipework connections.
- Connections below 100mm (4”) nominal bore may be made by cutting holes in situ. First determine whether single or double sided connections are required and cut hole in panel to suit external pipe diameter.
- For connections over 50 mm (2”) nominal bore use two flanges screwed BS21 taper thread, drilled to BS 10. Offer one flange to panel concentric with hole and transfer drill bolt holes into panel. Set one flange to external pipe and using appropriate gaskets, assemble external flanged pipe using other flange as an internal backing plate. Finally bolt up.
- For double sided connections proceed as above, replacing internal flange with the required fitting, e.g. ball valve, strainer basket etc.
- For connections of 50 mm (2”) nominal bore or less proceed as above or alternatively use threaded flanges or backnuts (with rubber gaskets) on standard longscrew to BS 1387.

All pipe work must be self supporting. If welded or brazed-on flanges are used, all heat must be dissipated before connections are made to the tank. Holes may be cut with normal metal working tools.

## **Pipe Connections for Insulated Cold Water Storage Tanks.**

The areas where pipe connections can be made on insulated tanks are more restricted than in standard tanks, there is a recess in the insulation to allow for the pipe connection. Standard insulated tanks come with three insulation recesses. More can be supplied if required.

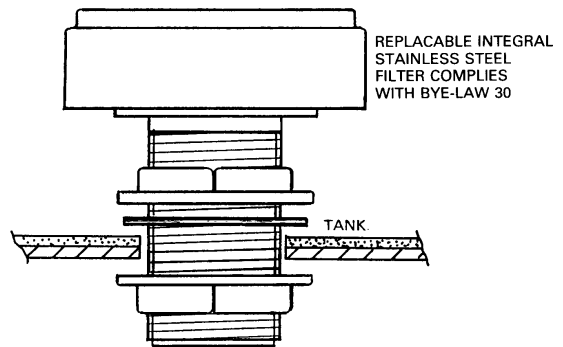
Recesses for connections can be made in different locations but KMG Killarney Plastics must be notified of this prior to order.

## Format 30 Fittings

### Screened Air Inlet Vent.

One of these is to be fitted to the lid in every Format 30 Tank, the hole for the vent will be pre-drilled in the lid panel. Larger tanks may require more than one vent.

**Note :** During commissioning the air inlet vent should be checked to ensure that it is attached correctly to the tank.

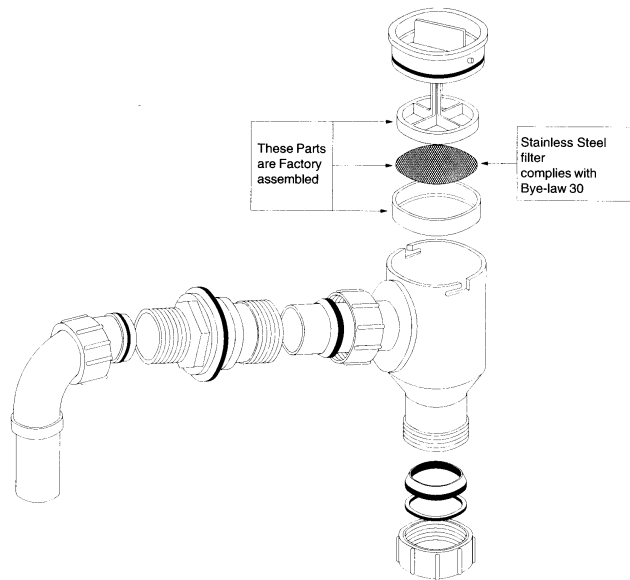


### Screened Overflow

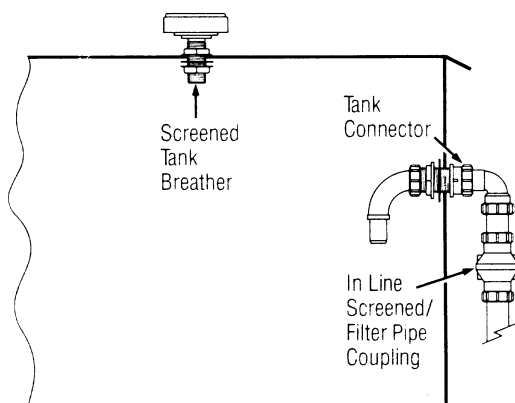
A 1 1/2" screened overflow is supplied with each Format 30 Tank. Please contact us if a different size is required. These are not fitted by KMG Killarney Plastics Ltd.

Overflows larger than 1 1/2" have a different configuration.

Warning or tell tale pipes if specified must also be screened.



### Bye Law 30 fittings.



# Maintenance Recommendations for One Piece Water Storage Tanks

**Maintenance Interval :** Minimum of once yearly.

## **Check List**

1. All internal supports should be checked for corrosion, if corrosion is found it should be rectified immediately.
2. Check generally for leaks or drips.
3. Check that all pipe work connected to the tank is suitably braced.
4. Check that the structural supports under the tank are in good condition.
5. If overflow and/or air inlet screens are fitted, check that they have not become blocked.
6. If insulated check that insulation and the manhole is securely fixed and not damaged, if they are damaged then the tank is not in compliance with Byelaw 30.
7. If not insulated in accordance with Byelaw 30, ensure that people can not consume water from the tank. We can advise on upgrading the tank to Byelaw 30 standard.
8. If there is a Condensation Tray with the tank, ensure that it has an overflow fitted and that it has not been damaged.
9. If the tank has a cover and is sited out of doors, check that the cover has not suffered structural damage and that it is securely bolted down.
10. If the area underneath / adjacent to the tank has become water sensitive check that the tank room is banded with adequate escape ducts.
11. If the tank room is banded, check that it is in good condition.

**Note :** Further information on the Health & Safety aspect, reference water quality is available in BS 6700.

## Glossary Of Terms

**One Piece Tank :** Rectangular fixed container assembled for the storage of water at atmospheric pressure and at a maximum temperature of 30 °C.

**Note :** This temperature is higher than is acceptable for drinking water, which should not normally exceed 20 °C.

**Nominal Capacity :** Volume contained in a tank, measured up to the top edge of the side walls.

**Actual Capacity :** Volume contained in the tank up to the maximum working level, this can be between 10 and 50% less than the Nominal Capacity.

**Bund Wall :** Structure situated underneath water tanks. It's purpose is to protect the building from water damage. All water tanks located above areas that are water sensitive should be banded.

**Vent :** Opening to the atmosphere to allow for the movement of air resulting from changes in the water level so that the water always remains at atmospheric pressure.

**Warning Pipe :** Pipe so fixed that it's outlet, whether inside or outside a building, is in a conspicuous position where the discharge of water can be readily seen.

**Overflow Pipe :** Pipe connected to the tank to discharge any overflow therefrom.

**Note :** We recommend the installation of two tanks in buildings as this will facilitate maintenance of tanks without effecting the water supply to the building.

**Leakage Test :** The duration of the test should be a minimum of 24 hours, commencing at least 2 hours after the tank has been filled. The tank should be inspected at regular intervals and not deserted during commissioning (first filling with water). The leakage test is not carried out by KMG Killarney Plastics Ltd.

**BS 6700 : 1997 :** Specification for design, installation, testing and maintenance of services supplying water for domestic use within building and their curtilages.

# STANDARD CONTRACT CONDITIONS

## 1. FORM OF CONTRACT

- (a) All orders and acceptances thereof and all variations or modifications of such orders and acceptances shall be in writing by prepaid letter only and shall be deemed to incorporate these conditions so far as the same are applicable.
- (b) All illustrations, drawings, specifications of weight, capacity and consumption data or other documents supporting or forming part of any Quotation (hereinafter called "additional documents") shall be considered approximate unless expressly otherwise stated therein. All such additional documents shall remain the property of Killarney Plastics Ltd. (hereinafter referred to as "the Company"). The copyright in all such additional documents shall be and remain in the Company. No such additional documents or the contents thereof shall be disclosed or made available to any other person, firm or corporation without the prior consent of the Company in writing.

## 2. PRICE AND PAYMENT

- (a) Unless otherwise stipulated the purchase price or the subject matter the contract (hereinafter referred to as "the goods") shall be ex-factory but shall include the cost of transport, erection, installation and commissioning.
- (b) Payments shall be effected in cash on the due date for payment without deduction at the place and in the manner designated by the Company.
- (c) In the event of default in payment, the Company shall be entitled without notice to the Purchaser to charge and receive interest on the purchase price at the rate of 3% per annum above the bank rate for the time being in force.
- (d) In the event of any variation in the price of materials or wages, the Company shall be entitled to adjust the purchase price of the goods accordingly.

## 3. PASSING OF PROPERTY

- (a) The ownership and the property in the goods shall remain in the Company until all monies due under the Contract have been paid to the Company.
- (b) Until the property and ownership in the goods has passed to the Purchaser as aforesaid, the Company shall be entitled to insure the goods in the Company's name and at the expense of the Purchaser.
- (c) Until the ownership and the property in the goods has passed to the Purchaser, the Purchaser shall not sell, let on hire, mortgage, charge, pledge, transfer as security or part with possession of the goods or purport to do so.
- (d) Until the property and the goods has passed to the Purchaser as aforesaid, the Purchaser shall keep the goods in good and marketable condition and shall, except in case of emergency, procure that all repairs or replacements which may be required to the goods shall be effected by the Company or its duly appointed Agents at the cost of the Purchaser.

## 4. TIME OF DELIVERY

- (a) Delivery of the goods shall be considered to have been effected if the Company has been given notice that the goods are ready for delivery to or in accordance with the instructions of the Purchaser.
- (b) Dates quoted for commencement and completion of manufacture and delivery shall be approximate. On no account shall the Company be liable for any delay in delivery of the goods caused through delay in delivery to it of raw materials, components, or things required in the construction of the goods, strikes, lock outs, acts of God, force majeure, governmental action or other circumstances over which it has no control.

## 5. TRANSFER OF RISK

The goods shall be at the Purchaser's risk as and from delivery.

## 6. ERECTION

The Company shall where necessary or appropriate erect or install the goods at the Purchaser's works. The Purchaser, shall free of cost to the Company, whether or not a fixed sum has been agreed for erection or assembly, lay such foundations as may be specified by the Company (including concrete base or supports) and provide at the Purchaser's expense, electric light and power, scaffolding, and any other matters required by the Company to erect or install the goods

## 7. LIABILITY FOR DEFECTS.

The Company shall not be liable for any defects in the goods or unfitness for use which the Purchaser has made known to the Company except and to the extent that the company shall repair or replace free of cost (if the Company shall decide) any part or parts of the goods which are defective or become unserviceable due to fault in design, installation, inferior materials, or fault in manufacture within three months from the date on which same were delivered to the Purchaser. Any such fault to be reported to the Company in writing forthwith.

8. Except as and to the extent expressly stipulated herein, the Company shall be exempt from all liability hereunder for direct or consequential damages howsoever arising. The Purchaser agrees to indemnify the company in respect of the entirety of any claim brought by any third party against the company howsoever arising from or in relation to the goods, or in relation to the Purchaser's use of the goods.

9. The purchaser warrants and undertakes that it shall use the goods strictly in accordance with the specifications of weight and/or capacity and/or use supplied by the company and that it shall not exceed, deviate from, or use in any manner howsoever in contravention of same. If the Purchaser's use exceeds, deviates from, or any manner howsoever contravenes the specifications, the company shall be exempt from all liability howsoever arising for direct or consequential damages, and the Purchaser agrees to indemnify the company in respect of any claim brought by any third party arising from the Purchaser's such use.

## 10. ASSIGNMENT OF CONTRACT

The Purchaser shall not without the prior consent of the Company in writing assign or transfer or purport to assign or transfer the Contract to any third party whatsoever.

## 11. SPECIAL CONDITIONS IN RELATION TO ERECTION OF TANKS

The Purchaser's order is confirmed on the basis of the following representations made by the Purchaser to the Company.

- (a) That reasonable site conditions are available
- (b) That there is a minimum of 460 mm (18 inches) working space all round the tank.
- (c) That all components will be available at the point of installation (for example where necessary, the components will be lifted by the purchaser to the roof of a building, should the tank be located on the roof).

## 12. HEALTH AND SAFETY AT WORK.

The company gives notice to the Customer that information and product literature is available concerning the conditions necessary to ensure that the Goods supplied against the contract will be safe and without risk to the health when used, handled, processed, stored or transported by a person at work. The customer should immediately contact the Company if he is not in possession of such information or literature. The Company also gives notice that the goods are sold in containers which may have any necessary hazard information as part of the container identification label. The Customer undertakes to comply with any stated conditions for the prevention of Health and Safety Hazards.

13. This Contract shall be construed and governed in all respects by the laws of the Republic of Ireland. The Purchaser and the company agree to submit to the exclusive jurisdiction of the Courts of the Republic of Ireland.