Plumbing Regulation News Update

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SAFETY ALERT:

INCORRECTLY INSTALLED RAINWATER TANKS CAN KILL!

Householders are warned to ensure rainwater tanks are correctly installed after a recent incident in Melbourne when a slimline water tank toppled over. This occurred in a suburban backyard where a five year old child usually played. The full 3,000 litre tank weighed over three tonnes, making it impossible to move by hand and a potentially fatal accident for anybody caught underneath.

While slimline rainwater tanks are an efficient way to save space and reduce dependence on mains water, householders need to be aware of the possible risks of them falling over and ensure that all types of rainwater tanks are properly installed and fastened.

It is important to always review manufacturers' requirements before starting work to install at any rainwater tank. All owner builders or builders installing a tank, or plumbing practitioners connecting a tank, are urged to check the stability and safety of the tank after installation.

Building and plumbing regulation requirements in Tasmania

- If a water tank is has a capacity of less than 45 kilolitres (45,000 L) it does not need a building permit. Tanks larger than 45kL will require a building permit to be installed.
- Tank stands higher than 1.2m require a building permit.
- A licensed plumber must connect the piping from guttering to the tank or connection of an overflow from the tank to stormwater collection point.
- The planning scheme of your local council may also have particular requirements for the location of rainwater tanks, so check with the council first before installing or buying a tank.

Correct siting and placement of rainwater tanks

- When installing a tank, it is recommended that competent advice is obtained from a builder, engineer or architect, to ensure the site is suitable to carry the weight of the tank when filled with water.
- Existing retaining walls may need further engineering examination.
- All underground tanks where ground water is evident are to be designed and installed in a manner which prevents movement from uplift.

- Some rainwater tanks can expand when full of water to between 100mm – 150mm of their footprint, so if the rainwater tank is positioned hard up against a building then this has the potential to move or damage that structure.

Preparing a proper tank base

Most flat-bottomed tanks are not able to carry the heavy load of water without the support of a strong, level and continuous base. It is recommended that a rainwater tank base be constructed of reinforced concrete 100mm thick using F72 reinforcing mesh. The base should be level and constructed on stable ground slightly wider than the diameter of the tank. Slimline tanks can also be placed on precast concrete slabs on a firm level base.

- If you are not using concrete, then use materials that are firm, able to be compacted and , cannot be scoured by animals, in a water course, by wind or a cascading overflow;
- Ensure that no sharp objects such as tree roots or jagged stones can protrude through to the bottom of the tank and pierce the tank material;
- The central part of the tank must be fully supported as this is the area where most force is exerted on the tank when it is filled.

Tank Stands

If you are using a tank stand make sure the structure IS STRONG ENOUGH TO CARRY THE WEIGHT OF YOUR TANK WHEN FULL. e.g. one litre of water weighs 1 kilogram. Most modern tanks will sit on the ground and use a small pump instead of gravity feed, eliminating the dangers of elevating tanks on stands.

- If a water tank stand is higher than 1.2 metres it will require a building permit before building work commences.
- Stands supporting large tanks may have to be designed by an engineer to safely carry the tank's weight when full.
- Some rainwater tank manufacturers have methods of securing rainwater tanks by bollards or brackets anchored to a building structure. The problem with brackets is that if the base is not stable then stress is placed on the structure where the bracket has been fastened.
- When a rainwater tank is empty it can be blown over by strong winds, so make sure your tank is adequately secured to the stand. Lightweight stands should be securely fixed to a heavy footing.

Maintenance of older tank stands

The current dry conditions experienced in many parts of Tasmania and a growing awareness by householders of ways to save water has resulted in many people recommissioning older rainwater tanks on stands. However an elevated tank on a rotting timber base is a potential death trap especially if children play underneath or the space is used as storage. A collapsing stand holding a tank full of water has the capacity to kill or maim or cause extensive damage to a house. Often when a wooden support structure fails the steel tank will also split and metal sheets and splinters may cause personal injury. Tanks and stands situated in coastal areas may also suffer from corrosion from the salty air. Owners with elevated tanks are urged to regularly inspect stands and fittings to ensure the safety of their family and minimise risks to their homes.

Child safety considerations

Children have drowned after climbing and falling into rainwater tanks. If an access point is left uncovered, there's a risk of children or adults drowning or animals contaminating the water. The main issue to address is the access covers or leaf strainers not being robust enough to take a person's weight or are inadequately secured. This consideration applies equally to underground and above ground tanks.

- Ensure that ladders and access points are removed to prevent children climbing onto the tank.
- Child safety inserts should be installed over tank access covers. Some tank manufacturers provide child proof inserts to be fitted under access covers.

Tank openings

When installed the tank should be covered and every access point except the inlet and overflow should be sealed unless in use. The inlet should incorporate a mesh cover and a strainer to keep out materials such as leaves and to prevent the access of mosquitoes and other insects. The overflow should also be covered with an insect-proof screen.

Further reading:

Rainwater Tank Design and Installation Handbook (November 2008) can be downloaded from the National Water Commission's website at:
http://www.nwc.gov.au/resources/documents/RAINWATER_handbooknwc_logo.pdf .

Guidance on the use of rainwater tanks is available for download from the enHealth Council website at: http://enhealth.nphp.gov.au/council/pubs/pdf/rainwater_tanks.pdf .

Further information:

For more details about plumbing regulations, contact the Workplace Standards Tasmania Helpline: Phone: (in Tasmania) 1300 366 322;

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