

APP1 – Stormwater Tanks on Private Property – Accepted Solutions

This brochure provides advice for residential developers who need to meet hydraulic neutrality requirements. The focus is on smaller developments of up to 10 residential lots and includes an acceptable solution for an onsite Detention Tank to manage the changes in stormwater discharge.

What is Hydraulic Neutrality?

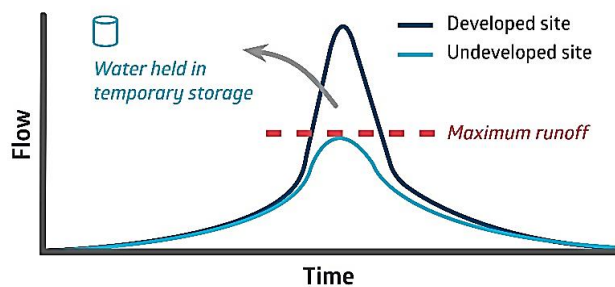
Urban development increases sealed surfaces, such as roofs and driveways, which results in increased rainwater runoff and an increased likelihood of flooding.

To manage the additional runoff directly attributed to your residential development, you need to ensure that the peak flow of runoff from your land is no greater than it was pre-development. This is called hydraulic neutrality.

Hydraulic neutrality is required for all new residential developments in the Urban Zones.

Why have a Detention Tank?

A simple option for small residential developments to achieve hydraulic neutrality, is to install an onsite Detention Tank. A Detention Tank on your property will temporarily store rainwater from your roof and release it at a slower rate to the council stormwater network. This storage and slow release of rainwater reduces the peak flow from your property so that it is no greater than it was pre-development.



Acceptable Solution for a Detention Tank



An onsite Detention Tank is intended to remain almost empty except during rain events. When it rains, the runoff from your roof will fill the tank then slowly flow out via an outlet pipe to the council stormwater network. If your tank reaches capacity, the excess runoff will flow out the overflow pipe.

We've simplified the process for you by providing an Acceptable Solution for a Detention Tank design which will allow you to meet hydraulic neutrality requirements for your new residential development. *

To size your Detention Tank, all you need to know is the roof area of your home.

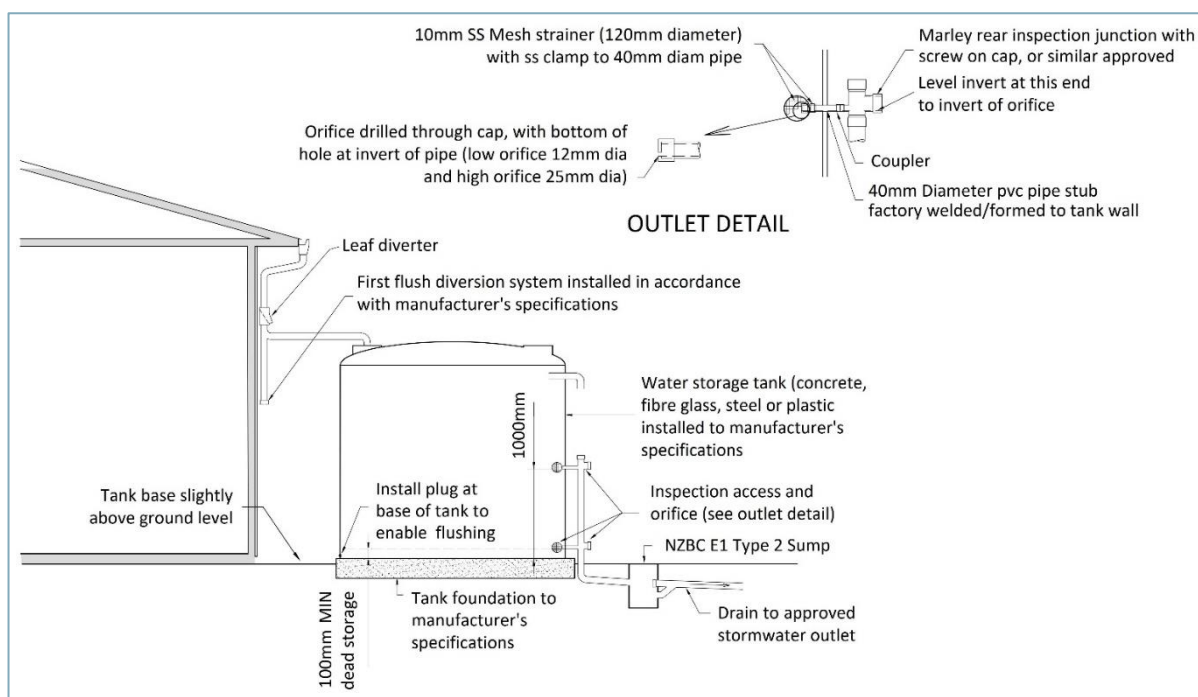
Table 1: Sizing your Detention Tank

House roof area	Detention tank capacity
< 125m ²	2,000 litres
≥ 125m ² to < 170m ²	3,000 litres
≥ 170 m ² to < 250m ²	5,000 litres

*This Acceptable Solution is for residential developments in the Urban Zones of up to 10 residential lots and for roof areas less than 250m². Larger developments and/or larger roof areas are likely to require specific design.

It is recommended that you work with your plumber to install your Detention Tank and pipework correctly.

Figure 1: Installation Requirements



Acceptable Solution requirements and limitations

- 1 This acceptable solution is only applicable for residential developments of up to 10 residential lots in the Urban Zones and a maximum impervious site coverage of 50%.
- 2 Runoff from no less than 80% of your roof area must be diverted to your Detention Tank.
- 3 You must have a leaf litter/debris diverter (or equivalent product) between your roof gutter and downpipe(s), or on the downpipe to your tank.
- 4 Your overflow pipe must not be directly connected to the main stormwater system. The overflow should discharge to an appropriate and visible overland flowpath and then to an acceptable outfall or public system. This is to provide a visible indicator if your primary outlet becomes blocked.
- 5 Your Detention Tank must be above ground to allow for ease of maintenance and inspection and to allow your tank to gravity feed to the council stormwater network.
- 6 Your Detention Tank is exempt from internal boundary setbacks when 5,000 litres or less.
- 7 Detention tanks must have a manufacturer's warranty of at least 20 years.
- 8 Detention tanks must be installed in accordance with the manufacturer's specifications. Consult your tank manufacturer for specific details regarding how to safely site and secure your tank.
- 9 Engineering advice is essential if your Detention Tank is to be located on fill material; above a retaining wall or embankment; or on an excavated bench close to buildings.

- 10 Detention tanks must be inspected and maintained in accordance with the manufacturer's instructions.
- 11 Each year, undertake a visual check for debris in the bottom of your tank. An experienced tank-cleaning contractor should clean your tank before the depth of the debris reaches the bottom of the mesh strainer.
- 12 NEVER enter your Detention Tank. The inside of your tank can be hazardous. Seek professional assistance from an experienced tank-cleaning contractor instead.
- 13 Your Detention Tank should drain to almost empty within one day after rain. A full tank indicates that a blockage has occurred.
- 14 The invert should be level from each outlet orifice to the corresponding inspection screw cap. This will allow a cleaning wire to be used to clear any blockages at the inspection points.
- 15 All plumbing and drainage work must be completed to the requirements of the Building Act 2004 and the NZ Building Code 1992. Work with your licensed plumber to install your Detention Tank and pipework correctly.
- 16 The Detention Tank capacity, outlet diameter and height of outlet as stated in Table 1 and Figure 1 must be adhered to. Any variation will mean your Detention Tank does not fall within this Acceptable Solution and you will be required to demonstrate compliance with support from a suitably qualified person

Building Consent Requirements

Typically, only the drainage works associated with your development are likely to require a consent. Your detention tank and connection will need to be shown on as-built plans provided to your council. For details on building consents please contact Waitaki District Council's Building Control team on (03) 433 0300 or building@waitaki.govt.nz

Waitaki District Council will accept the use of Stormwater Detention Tanks, as described in this brochure, as evidence of compliance with the requirement for hydraulic neutrality for residential development providing that the development is within the Acceptable Solution limitations, and providing that the requirement for hydraulic neutrality does not refer to specific methods or specific outcomes. The use of this Acceptable Solution is not mandatory. You may propose another solution or variation to achieve hydraulic neutrality, however supporting information from a suitably qualified person may be required to demonstrate compliance.