

Aluminium stormwater retention tanks



Aluminium retention tanks have been designed to overcome stormwater disposal problems that have arisen with recent trends to infill housing developments.

With infill housing projects placing an ever increasing demand on existing stormwater services, councils and local authorities are requiring some form of stormwater retention.

Aluminium retention tanks have gained wide acceptance because they store the peak run off generated during rain storms and spread the discharge of this stored volume over a longer period, either to the existing disposal system or to ground soakage.

Manufactured from Humes Aluflo pipe, these tanks are tailor-made to suit individual requirements.

They are available in various lengths and diameters and, as they are made from aluminium, are lightweight, easy to handle and install.

Aluminium retention tanks are just 3% the weight of comparable concrete tanks and require no heavy lifting equipment to install.

While they are lightweight, aluminium tanks are also strong and can carry heavy vehicles with minimum cover.

Backfill

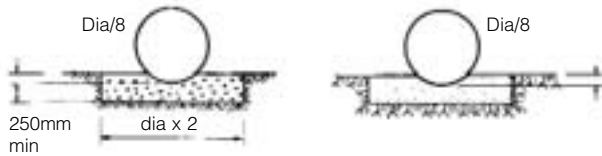
Backfill material should preferably be well graded, granular material. Local site material is often adequate provided it is sufficiently compacted at controlled moisture content. Cohesive materials should be placed and compacted at optimum moisture content to develop adequate shear strength.

Placement of backfill

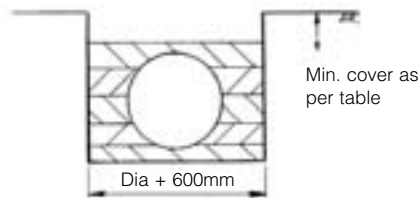
Backfill shall be placed symmetrically on each side of the structure in 150-200mm layers. Each layer is to be well compacted except in conditions described below. Puddling or jetting is not recommended. Compaction is not required for pipes up to including 600mm or for larger diameters in a trench condition backfilled with granular material and not subjected to vehicle wheel loads or high fills.



Retention tanks

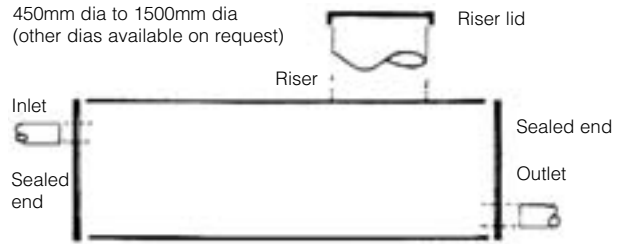


Trenching – typical trench detail



Aluminium retention tanks availability

450mm dia to 1500mm dia
(other dias available on request)



Specify your requirements using the guide above.
Climbing rungs available if required

To calculate retention tank length

Calculate storage capacity required. (Refer to your local authority for their requirements).

Determine pipe diameter most suited to installation/site conditions. Enter graph at required storage capacity (C axis) and moving vertically up that line locate the requisite pipe diameter at this intersection, read horizontally leftwards to the L axis which provides the required length.

Minimum cover in mm required over crown of pipe

Pipe diameter	Type of live loading	
	Highway Use HN-HO-72	No traffic loading
300	600	300
375	600	300
450	600	300
600	600	300
750	600	300
900	600	300
1050	600	350
1200	600	350

Bedding of pipes on soft or rock foundations

- Soft unsuitable foundation material should be excavated below the grade line and backfilled with gravel, crushed stone or other suitable material.
- When rock is encountered the foundation should be excavated to a depth of Dia/4 or 250mm (whichever is less) below the bottom of the pipe.

Environmental guidelines

To ensure trouble free operation of the aluminium retention tank the following guidelines are detailed for your consideration.

- Water and soil pH between 4 and 9.
- Water and soil conductivity less than 200mS/m (equivalent to a resistivity of 500 ohm-cm or more). This criteria is not onerous and is unlikely to be as significant in natural waters. Note that sea water is a major exception to this rule.

- Copper ion concentration less than 1 ppm. (This is over 50 times higher than any typical concentrations in natural waters in NZ).

Backfill soil should be free draining and should not include plastic lays or silts, organic clays and silts, or peat. It is essential that no dissimilar metals (particularly reinforcing bars) be bonded to the pipe.

Where concrete headwalls are used in marine environments, it is recommended that a membrane barrier (eg paint) be placed between the pipe and concrete.

Bedding

A uniform blanket of loose granular material of 12mm maximum aggregate size shall cover the shaped bedding to a depth sufficient to allow the corrugations to become filled with material.

Disclaimer: "Buyers and users must make their own assessment of our products under their own conditions for their own use. All queries regarding product suitability of purpose or installation should be directed to the nearest Humes office for advice and assistance". Availability of product may differ slightly from that available in your area

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