

How does a First Flush™ Water Diverter work?

Fitting an appropriately sized water diverter is critical to achieve good quality water. Water diverters improve water quality and reduce tank maintenance by **preventing the first flush of water, which may contain roof contaminants, from entering the tank.**

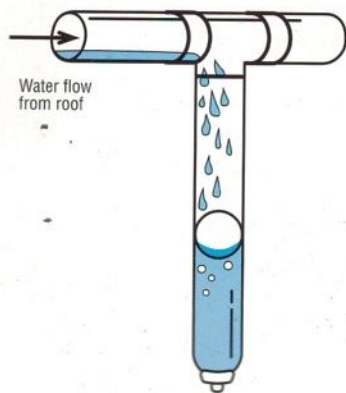
When it rains, water slowly builds up in the roof guttering system before it exits through the downpipe. **The first flush of water from the roof can contain** amounts of bacteria from decomposed insects, skinks, bird and animal droppings and concentrated tannic acid. It may also contain sediment, water borne heavy metals and chemical residues, all of which are **undesirable elements to have in a water storage system.**

Instead of flowing to the water tank, these pollutants are diverted with the initial flow of water into the chamber of the water diverter.

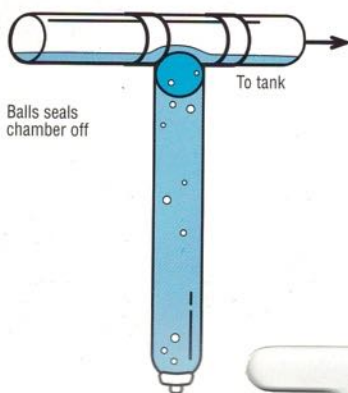
The water diverters from Rain Harvesting™ utilise a dependable ball and seat system – **a simple automatic system that does not rely on mechanical parts or manual intervention.**

The Diverter chamber empties through a slow release valve and can be connected to standard dripper irrigation systems

First flush of contaminated water is diverted into chamber



Once chamber is full, fresh water flows to tank



As the water level rises in the diverter chamber the ball floats, and once the chamber is full, the ball rests on a seat inside the diverter chamber preventing any further water entering the diverter. The subsequent flow of water is then automatically directed along the pipe system to the tank.

A slow release valve ensures the chamber empties itself after rain and resets automatically. The diverted water need not be wasted water because the drain pipe from the diverter chamber can be fitted to a standard drip irrigation system.

Calculating the amount of water to divert

Industry experience and field testing suggests that the amount of water diverted should be determined based on (1) the **surface area** of the roof, and (2) the **amount of pollutants** on the roof. The following factors can be used as a guide in determining the volume of water to be diverted.

As a rule of thumb, the more water that is diverted the better the quality of water in the tank.

Pollution Factor for the Roof

Minimal Pollution – divert 0.5L per m²

Open field, no trees, no bird droppings, clean environment

Substantial Pollution – divert 2L per m²

Leaves and debris, bird droppings, various animal matter, e.g. dead insects, skinks etc.

Diversion Factor for a First Flush Water Diverter

m² Roof Area X Pollution Factor = Litres to be diverted.

Example for a minimal polluted roof of 100m²

100 X 0.5 = 50 Litres to be diverted.

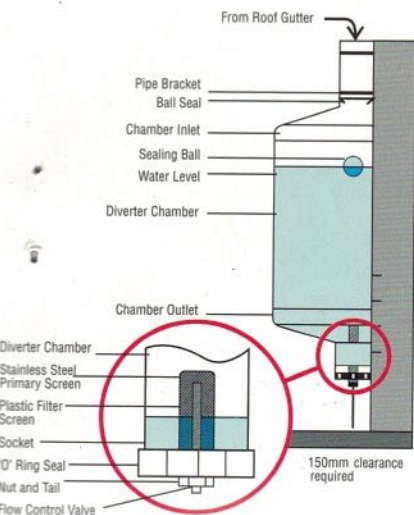
Example for a heavily polluted roof of 100m²

100 X 2 = 200 Litres to be diverted.

The Diverters are sold in kit form and utilise standard 90, 100 or 300mm PVC pipes as the diverter chamber section. The length of pipe used will vary depending on the volume to be diverted. **Diverters with a variable volume chamber are better than fixed-volume diverters because the volume of diverted water can be customised to the specific requirements of each roof.**

Post/Wall Mounted Diverter

A versatile unit that **can be mounted on a wall, post or stand, to hold larger volumes.** Can be adapted to suit a wide range of applications and will manage single or multiple pipes coming from the roof to divert between 20 and 150L. Includes a galvanised steel mounting bracket and saddle. A galvanised steel stand is an optional alternative to post or wall mounting. **Add the appropriate length of 300mm pipe based on the quantity of water you wish to divert.** For example, a 2m length of 300mm diameter PVC pipe is required to hold 150L of diverted water. The kit is easy to freight, and the diverter volume can be made on site to match exact requirements.



first flush™
POST/WALL WATER DIVERTER

SIZES	PIPE	TOTAL
Litres	Length (mm)	Total Height Required (mm)
20	225	590
30	365	730
40	500	865
50	630	995
60	780	1145
70	905	1270
80	1050	1415
90	1180	1545
100	1310	1675
120	1610	1975
130	1735	2100
150	2005	2370

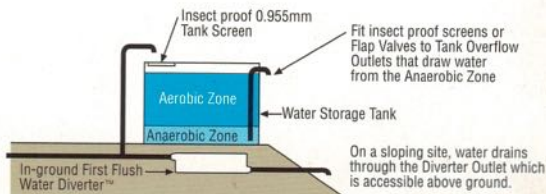
In-Ground Diverter

Buried and out of sight, an In-Ground Diverter is **perfect for sloping allotments.** On a site with a minimum 5° slope, an In-Ground Diverter **allows a "wet" system to be converted into a "dry" system.**

After rainfall when an In-Ground Diverter is installed, not only will the diverter chamber empty, the water held in underground pipes will also drain out through the diverter, converting it to a "dry" system.

Most systems are "wet" because the size of buildings and the placement of tanks away from the buildings mean that there are long runs of pipe underground leading to a riser at the tank. Because the pipes are underground and below the entry point to the tank, even during periods without rainfall water remains in the pipes.

In-Ground Water Diverters also come in kit form - add the appropriate length of 300mm pipe based on the quantity of water you wish to divert.



first flush™
IN-GROUND WATER DIVERTER

SIZES (300mm DIAM. PIPE)	Length Metres	Volume in Litres Contained (approx)
1.0	77	
1.5	112	
2.0	147	
2.5	182	
3.0	218	
3.5	253	
4.0	289	
4.5	324	
5.0	360	
5.5	395	
6.0	430	

Plus (add) the volume of water held in the pipe section downstream of the Diverter, between the Chamber and the Flow Control Valve / Outlet.
For every 1m of 100mm PVC pipe add 8L.

