

RAINWATER HARVESTING USING ROOFING TILES

FACT SHEET

BACKGROUND

The Australian Roofing Tile Association (ARTA) is the peak body representing the concerns and interests of more than 90% of the roofing tile industry in Australia.

The aim of this document is to highlight the **key factors that contribute to the quality of rainwater harvested from concrete and terracotta tiled roofs**.

Guidance on the correct maintenance of storage tanks and other practices which may help mitigate water contamination will also be provided.

KEY FACTORS AFFECTING WATER QUALITY

The key factors that affect water quality in the collection of rainwater in tile roofed homes are:

- Organic materials such as leaves, waterborne bacteria, feathers
- Inorganic materials such as emission particulates, chemicals from pesticides and ash from bushfires
- Roofing type materials:
 - **Concrete and terracotta roof tiles are confirmed as suitable roofing materials** ^[1] that would not affect human health for rainwater harvesting purposes.
 - Roofing materials which contain hazardous and/or toxic compositions for the purposes of rainwater harvesting should be avoided (roof products should be free of lead and have fixtures which are non-corrosive).

PRACTICES WHICH MITIGATE RAINWATER CONTAMINATION

- Correct use and maintenance (cleaning) of rainwater tanks in conjunction with diverters to achieve the highest level of water harvest quality;
- Appropriate performance requirements for diverters as an effective means of increasing harvested rainwater quality;
- Protective measures such as chlorination of rainwater to disinfect microbiological contamination^[2]; and
- It is important to determine the most effective water harvesting procedures specific to your site based on the size of your household, space available and budget to ensure you receive the most suitable water storage solution.

CORRECT MAINTENANCE OF STORAGE TANKS

Regular monitoring and maintenance should be undertaken to ensure water harvesting effectiveness of tanks. Once a rainwater tank is installed, it is recommended that the following components of the roof catchment and tank be maintained at least every six months to mitigate any issues:

- Regular cleaning and inspection of gutters to inhibit access of leaf material or other debris;
- Regular cleaning of first flush/leaf diverters;
- Regular checking of roofs for clearance of accumulated material;
- Regular cleaning and maintenance of tank inlets, insect proofing screens and leaf filters;
- Regular cleaning of the suction strainer at the pump; and
- Pruning of overhanging branches from excess tree growth.

Residents are able to inspect for issues or faults within rainwater harvesting systems by employing the following techniques ^[3]:

Checking for faults in the pump: Any noise that arises from the flushing of toilets indicates a pump system malfunction; and

Checking for harvested rainwater quality: Discolouration in the toilet bowl or washing machine indicates incorrect installation of pre-filtration systems and/or diverters.

Further guidance on the benefits and correct usage of rainwater tanks should be referred to the EN Health document ^[4] which can be accessed [here](#).

REFERENCES:

[1] Blue Mountain Co (2019), 'Appropriate roof surface materials for rain harvesting systems'

[2] Department of Health (2011), 'Guidance on use of rainwater tanks'

[3] Urban Water Cycle Solutions, & Rainwater Harvesting Association of Australia (2017), 'Rainwater Harvesting Residential Design Specification', Newcastle, Australia: Urban Water Cycle Solutions.

[4] Heggie, S., Schobben, X., Cunliffe, D., (2011), 'Guidance on use of rainwater tanks', enHealth