

# Air conditioning and pipework systems – wastewater removal

Updated February 2016<sup>1</sup>

*EPA 245/16: This guideline identifies options and management techniques for wastewater discharges from air conditioners, cooling towers and air compressors. These techniques are considered to comply with the requirements of section 25 – general environmental duty – of the Environment Protection Act 1993 and the Environment Protection (Water Quality) Policy 2015.*

## Introduction

The stormwater system currently drains wastewater or washdown water from many small and diffuse sources that combine to carry a large pollution load directly into our waterways and oceans. While litter and rubbish are usually the most visible pollutants, contaminants such as oil and grease, sediments and residual chemicals can also have a significant pollution impact.

Reducing and, where possible, eliminating at source the pollution carried by wastewater from air conditioners, cooling towers and air compressors are more effective than attempting to treat the downstream effects.

Most urban areas are well served with adequate waste disposal in a sewage system or septic tank effluent drainage system (STEDS). If practical, discharging air conditioning wastewater to the sewer/STEDS is the preferred option and is likely to be the most cost effective.

## Principles of disposal to be observed

Wastewater should not be allowed to exit a site onto neighbouring property or into the street stormwater system.

If the quality of wastewater is not known, discharge to any available sewer or STEDS system is preferred but will be subject to approval of the relevant authority.

If soakage pits or tunnels are required, the capacity and design must comply with sections 7.4.1 and 7.4.3 of the SA Health Commission Code *Waste Control Systems: Standard for the Construction, Installation and Operation of Septic Tank Systems in South Australia (1995)*.

A minimum 3-metre setback is required between any soakage pits or tunnel and any buildings, structural walls and neighbouring boundaries (note: setback is different from Septic Tank Standards).

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<sup>1</sup> Updated according to *Environment Protection (Water Quality) Policy 2015*.

This guideline assumes a percolation rate of 10 L/day/m<sup>2</sup> of soil surface area within the soakage pit or tunnel. An application to vary the design requirements for soakage pits or tunnels will be considered based on an examination of the disposal area, consistent with the site assessment criteria outlined in section 7.2 of the Septic Tank Code.

## Design of sub-surface on-site disposal systems

Figures 1 and 2 show the two most common on-site disposal systems applicable for larger volumes of wastewaters from air conditioning systems (adapted from the Septic Tank Standards).

## Discharge provisions

Discharge provisions for various types of systems are listed below.

System type	Discharge provision
Condensate as derived from the air by dehumidification process, applicable to indoor and outdoor plant including reverse cycle operation	Connect to sewer, soakage pit, garden area or stormwater For roof-mounted plant, gutters and downpipes can be used to drain condensate
Evaporative process wastewater by dump cycle or bleed (saline condition)	Connect to sewer, soakage pit or saline tolerant garden area Note: soakage pits must be of suitable capacity to service discharge
Cooling tower wastewater (chemically treated)	Connect to sewer
Pipework system wastewater by continuous or intermittent bleed and drain down, e.g. heating, chilled and condenser water	Connect to sewer Note: large discharges through process or drain down must be subject to applicable discharge rate conditions
Hot-water ablution units (testing and drain)	Connect to sewer
Demineralised, distilled, reverse osmosis or similar processed pipework systems	Connect to sewer
Compressed air condensate, steam reticulation/condensate blow down pipework systems	Connect to sewer
Water storage provisions for process or amenity, e.g. tanks, swimming pools or similar providing overflow or backwash	Connect to sewer Note: large discharges must be subject to applicable discharge rate conditions. Holding tank provisions may be necessary to regulate such discharges

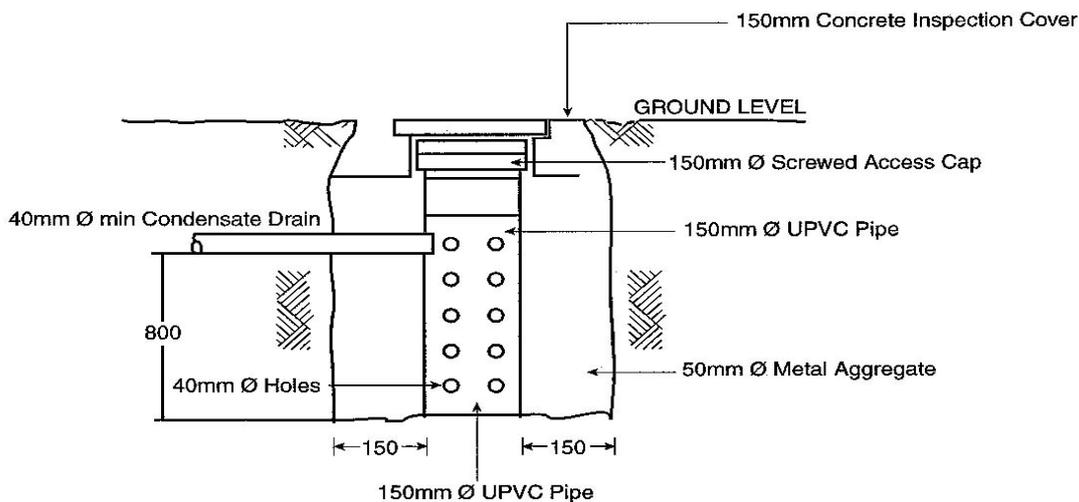


Figure 1 Air conditioning drainage disposal soaker

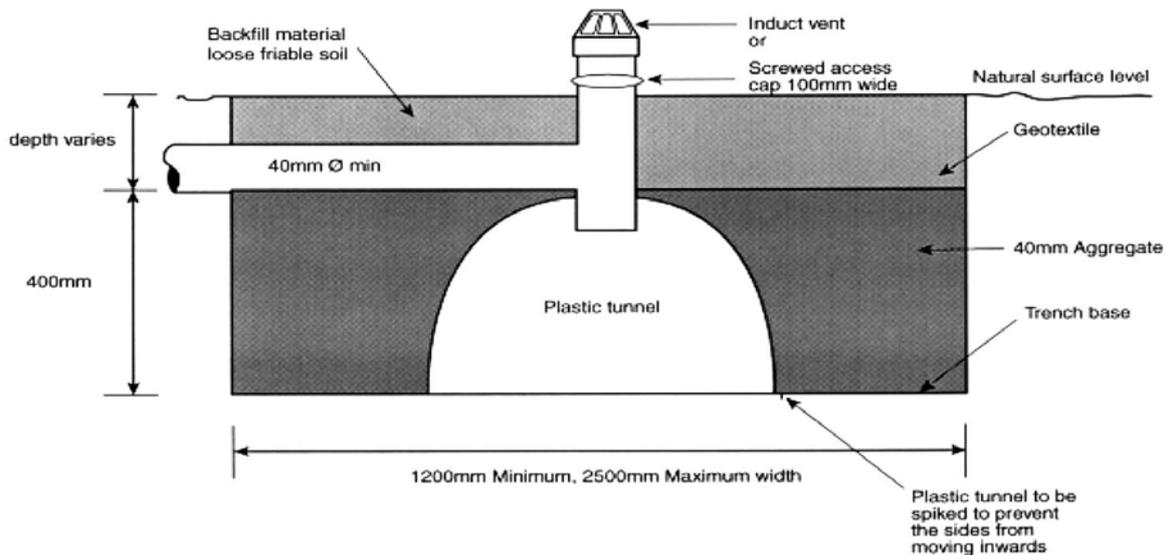


Figure 2 Tunnel system

### Alternative disposal method

As an alternative to on-site discharge, off-site disposal of wastewater from major drain downs or large quantity discharges from other processes can be arranged through the services of an approved waste contractor. In this situation, the system interface should include a flexible hose, quick-release coupling for tanker connection, and appropriate signage. Such signage could read as follows:

**Warning**

Drain and flow test provisions are arranged for off-site disposal only.

To arrange disposal, contact:

## Acknowledgments

Acknowledgment for the development of this guideline goes to an industry reference group and in particular: Ashley Hallendal (Ashley Hallendal & Assoc), Keith Bleechmoore (AMCA), Bob Mitchell (Connell Wagner), David Moses (David Moses & Assoc), David Robinson (Lincolne Scott), Jeffery Clark (SA Water) and Ken Hutt (Secon Consulting Engineers).

## Disclaimer

This publication is a guide only and does not necessarily provide adequate information in relation to every situation. This publication seeks to explain your possible obligations in a helpful and accessible way. In doing so, however, some detail may not be captured. It is important, therefore, that you seek information from the EPA itself regarding your possible obligations and, where appropriate, that you seek your own legal advice.

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## Further information

### Legislation

[Online legislation](#) is freely available. Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet  
Adelaide Service SA Centre  
108 North Terrace  
Adelaide SA 5000

Telephone: 13 23 24  
Facsimile: (08) 8204 1909  
Website: [shop.service.sa.gov.au](http://shop.service.sa.gov.au)  
Email: [ServiceSAcustomerservice@sa.gov.au](mailto:ServiceSAcustomerservice@sa.gov.au)

### General information

Environment Protection Authority  
GPO Box 2607  
Adelaide SA 5001

Telephone: (08) 8204 2004  
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Freecall: 1800 623 445 (country)  
Website: [www.epa.sa.gov.au](http://www.epa.sa.gov.au)  
Email: [epainfo@epa.sa.gov.au](mailto:epainfo@epa.sa.gov.au)

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