

Acceptance guideline 16: Stormwater contamination/first flush collection and Undercroft Carparks

Overview

The purpose of this acceptance guideline is to outline under what circumstances Icon Water will permit the discharge of liquid waste other than domestic sewage into the sewerage network.

Under section 35 of the *Utilities (Technical Regulation) Act 2014*, it is an offence to discharge into the water or sewerage network any substance that is likely to interfere with the network, or form compounds that would be likely to interfere, unless the consent of the utility is obtained. Significant fines, imprisonment or both may result from an offence. Discharges entering a sewer that are in breach of the conditions set out in this note will likely constitute a breach of section 35 of the *Utilities (Technical Regulation) Act 2014* and may lead to prosecution of the person discharging the waste, or allowing the waste to be discharged.

This Guideline contains specific information on waste types and discharge requirements. The requirements of this Guideline are in addition to the requirements specified in *Trade waste acceptance guideline 1: general acceptance criteria for liquid waste*.

Roofing of liquid trade waste generating areas

An area must be roofed where trade waste activities are carried out or pre-treatment equipment is installed to prevent the ingress of rainwater to the sewerage system. 10 degrees from the vertical of overhang of the roofing is the minimum acceptable cover for structures where one or more sides are open to the weather.

To ensure that no surface stormwater can flow onto the liquid trade waste generating process area, a bund, at least 150 mm high or speed hump 75 mm high around the area is necessary. On the upper side of the area a stormwater drain alone is not adequate as stormwater will often flow over the grate and enter the area. The overall surface water flow across the site has to be considered and the height of the bund/speed hump may have to be increased to prevent stormwater flow onto the process area.

This design might allow rainwater to blow under the roof. The roof should overhang by an amount not less than that shown in Figure 1 below (this is not to imply that the roofing must be slanted at 10 degrees to horizontal).

In all cases the design must prevent runoff from any storm with an intensity of up to a 10 year Average Recurrence Interval (ARI) from entering the sewer. Designers may find the ACT Government Transport Canberra and City Services Design Standards for Stormwater (accessible on the internet) and Australian/New Zealand Standard AS/NZS 3500, Plumbing and Drainage, Part:3 Stormwater Drainage useful as guides.

Where the stormwater catchment threatening the car park with inundation, is greater than 100 square metres, the application must be accompanied by a certificate from an Engineer who is currently registered on the National Professional Engineers Register, to verify the design's capability. The customer must ensure that stormwater drains remain free from debris and/or other obstructions that would restrict or block the flow of stormwater.

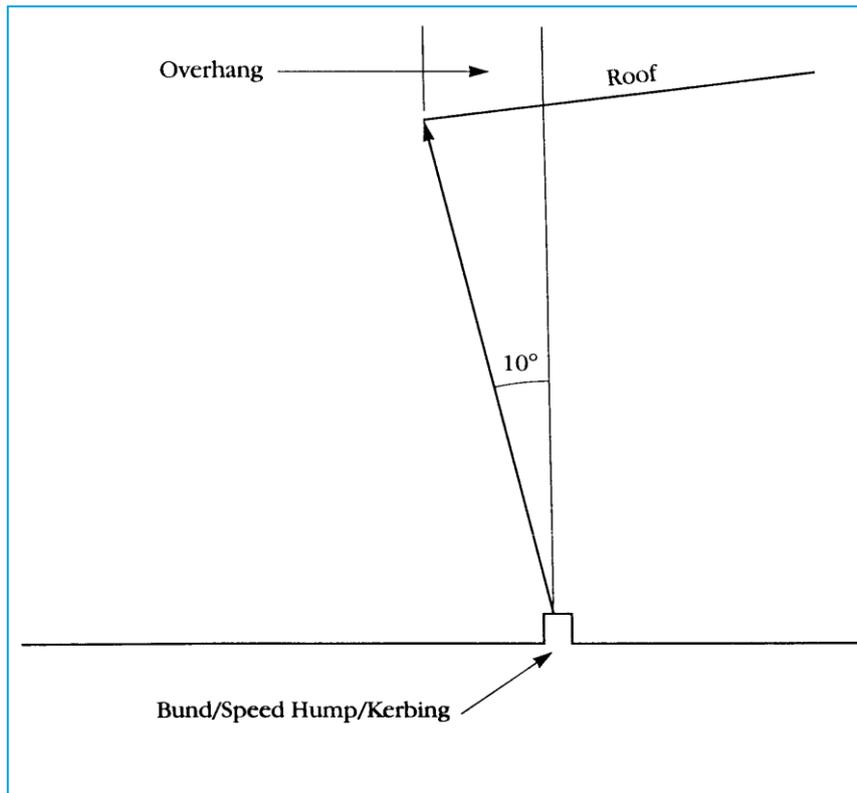


Figure 1: Roofing of trade waste areas

Methods of exclusion of stormwater

From a waste management point of view, the prevention of storm water contamination is the preferred solution. Areas that are likely to be contaminated should be bunded and roofed over. Spillage of chemicals, products, etc. should be recovered or cleaned by dry methods, so either system, sewerage or storm water drainage, is not contaminated.

Separation

Segregation of dirty and clean areas is imperative for good waste management. Areas that are likely to become contaminated are those where activities such as storage, handling or transferring of liquid or solid materials occurs. It is essential that 'dirty' areas be separated from 'clean' areas to minimise pollution and the volume of wastes to be treated.

Segregating clean and contaminated areas can be achieved by selective changes in surface gradients, the use of 'speed humps' (see below) or by the use of diversion and collection drains.

Bunding

The bund is designed to contain spillages and leaks from liquids used, stored or processed above ground, and to facilitate clean-up operations. As well as being used to prevent pollution of the receiving environment, bunds are also often used for fire protection, product recovery and process isolation.

Collection drains

Collection drains should be constructed to ensure ease of inspection and cleaning. The grates should be easily removed and the pit should be wide enough, so that accumulated solids can be easily removed.

Diversion drains

Diversion drains such as 'spoon drains' can be successfully used to divert storm water away from contaminated areas, minimising the volume of water over the contaminated area.

Speed humps

Speed humps can be used to segregate potentially contaminated area from clean areas and as a form of containment where relatively small spills are likely to occur or a more substantial structure is not practicable.

Types of premises

Open areas

Groundwater and storm water are prohibited from being discharged into the sewerage system. We do accept discharge of first flush storm water into the sewerage system if it meets the criteria listed below.

Acceptance of limited quantities of first flush water from liquid trade waste areas may be considered only if roofing cannot be provided because of safety or other important considerations. This could only be accepted in special circumstances and would be decided in each individual case. The proposed area must be sealed. The discharge from the unsealed area is not allowed. The first flush water has to be collected in a holding tank, treated in accordance with licence conditions, and discharged at a controlled rate after the rain has stopped. The area must be kept clean and should be hosed down after each use.

The following information needs to be provided to consider the acceptance of first flush storm water run-off to the sewerage system:

- reasons why the area cannot be roofed
- the size of the open area requested for consideration of first flush to the sewerage system
- whether the area is sealed
- the estimated volume of the first flush in m³
- information on rain gauging and storm water diversion to the drainage system after the first flush is accepted.

Pre-treatment

Installation requirements

It is required that all open areas must be raised or contained by a bund. Also, it must have controls incorporated into the design to ensure that only the predetermined volume of storm water is discharged into the sewerage system.

Schematic layout of a first flush system is shown in Figure 2.

The capacity of pit 'C' (to top water level) should be equal to the volume of storm water collected in a catchment of the open area (in m²) covered to a depth of 10mm. The contents of pit 'C' should be pumped to the sewer via the pre-treatment facility. The pump from pit 'C' should be electronically interlocked to an external control device to ensure that the pumped discharge ceases during wet weather.

Examples of external control devices:

- A flow switch fitted on a dedicated water supply to the washing system that will allow the pump to operate only whilst the washing system is in use. The washing system must not be used during wet weather.
- A rainfall gauging device set to isolate the power supply to the sewer discharge pump after a pre-determined level of rainfall has been registered. Alternatively, a manual activation of the pump would be acceptable for small installations. Washing shall not be carried out and the pump shall not be activated when it is raining or sooner than six (6) hours after the cessation of rain.

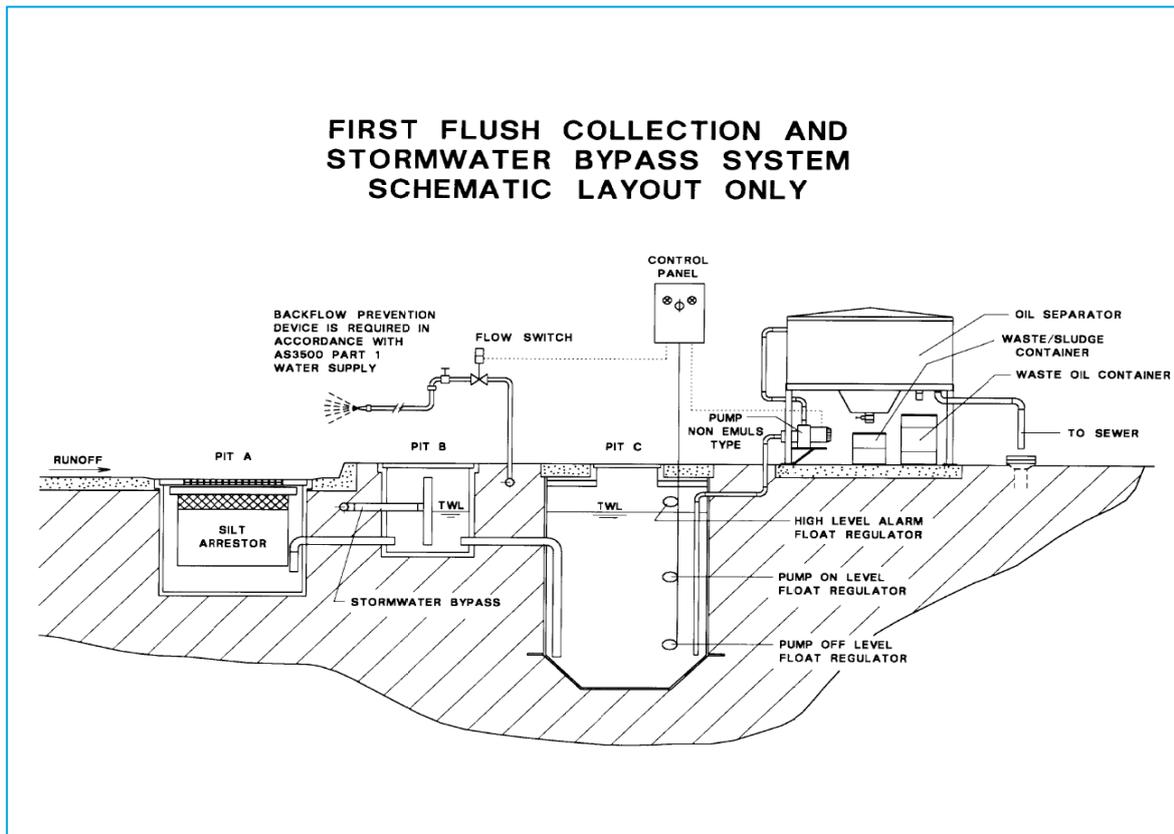


Figure 2: First flush collection and stormwater bypass system

Undercroft Car Park Pre-treatment requirements

We will accept wastewater from undercroft car park to sewer provided the flow is passed through a silt trap. Oil separation pre-treatment is not required if there is no designated car wash area and the owner agrees that the car park will not be used as a car wash facility. That being the case, signs must be posted at each tap or hose within the car park, prohibiting car washing. If there is a designated car wash area, or some other source of oily waste, then the provisions of *Trade waste acceptance guideline 4: for motor trades and fuel dispensing* apply. Where undercroft car parks have open sides or are partially uncovered the customer will be required to protect the area draining to sewer from the entry of rain including rain descending at an angle of up to ten degrees from the vertical (see Figure 3).

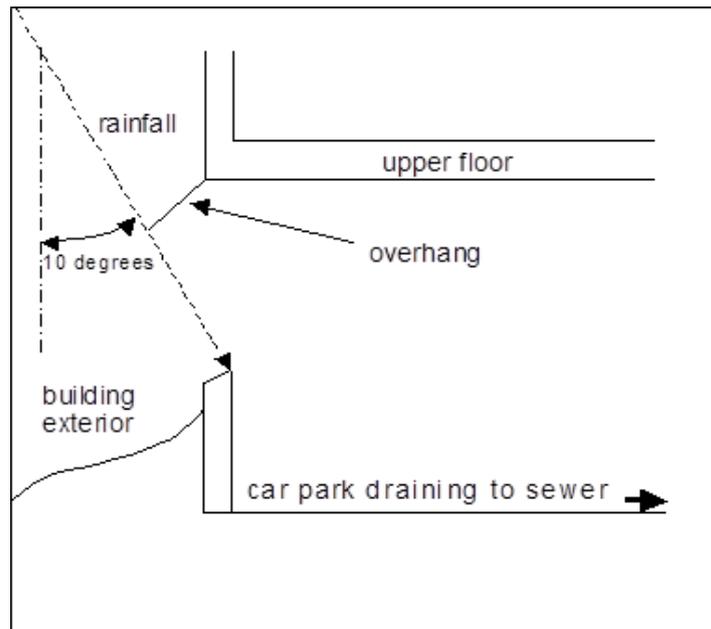


Figure 3: Undercroft Carpark stormwater protection diagram.

Further information

Additional information about the discharge of liquid waste into Icon Water's sewerage network is available at www.iconwater.com.au/tradewaste or by contacting us on **02 6248 3111** or via email on talktous@iconwater.com.au.