

NZ LIFESTYLE CAMPING

SELF-CONTAINMENT GUIDELINES

5.5 MISCELLANEOUS PROVISIONS - VENTILATION, HYGEINE AND HEALTH

NZLC GUIDELINES FOR THE VENTING OF CASSETTE TOILETS. (REGULATION 20B - UNDER REVIEW)

5.5.1

Note: Industry manufactured toilet cassettes are designed to function as sealed unit for human waste. While a few models are fitted with a micro vent to equalise pressure and reduce odour this is not an industry wide feature. NZLC considers the requirement by the Plumbers, Gasfitters and Drainlayers Board under the regulations to vent all toilet cassettes to the exterior of the vehicle impractical and a potential health risk.

THIS REQUIREMENT IS CURRENTLY UNDER REVIEW WITH CHANGE EXPECTED IN THE 4TH QUARTER OF 2024. NZ LIFESTYLE CAMPING RECOMMENDS VEHICLE OWNERS DO NOT MODIFY THEIR TOILET CASSETTES FOR VENTING UNLESS ABSOLUTELY NECESSARY FOR CERTIFICATION.

Accordingly, NZLC recommends the minimum level of application of this requirement to 1) reduce the potential health risk and 2) prevent unsightly and unnecessary modification to vehicles and fixtures.

Purpose:	Vents on wastewater tanks or portable containers should be designed and installed to assist the safe and efficient filling, storage and emptying of wastewater containers by: <ol style="list-style-type: none">1) dissipating air and gasses in the tank to allow liquid to enter,2) allowing for the release and equalisation of air pressure due to a build-up of gases or heat,3) directing odour to the vehicle exterior and away from the habitation compartment.
References:	Plumbers, Gasfitters, and drainlayers (Self-Contained) Vehicles Regulations 2023 Plumbers, Gasfitters, and drainlayers Board (Motor Vehicles Inspections) Notice 2023
Health and Environment:	A priority, for any installation and use of fittings and equipment, in the storage and transfer of hazardous waste, is to prevent any health risk to persons who may be exposed to it. <ol style="list-style-type: none">1) Unpleasant odours should not be evacuated to public spaces or living spaces, if at all possible. A large diameter vent hose will transfer more odour than a small diameter vent hose.2) Good hygiene practice should be followed when handling equipment and fittings used to store and transport human waste. The use of gloves, proper handwashing, sanitisers and disinfectant will all reduce the risk of contamination.3) All toilet waste storage containers and fittings should be regularly cleaned to avoid contamination, bacteria buildup and attracting insects such as toilet flies.4) All human waste (from toilet cassettes) must be disposed of at suitable waste collection dump stations or suitably designed sewerage access points.

Most vehicle cassette toilet locker doors have natural venting around the push button latches. While NZLC considers this natural ventilation to the toilet locker achieves the required outcome PGDB require an external grill or vent from the locker to the vehicle exterior where the internal toilet cassette is auto vented. Accordingly, at this time, to pass as self-contained an external venting point should be added. There is no minimum requirement of venting size in the regulations and it is up to the installer or tester to determine what is required.

Application

Automatic venting of a toilet cassette into an external toilet cassette locker

1) Examples of toilet cassette vents:



Some Thetford brand toilets have a fitted vent system that opens when the cassette is installed. These vent internally into the locker space or into a vent pipe / hose (image on right). The vents equalise pressure and release some gases/odour. The locker can then be easily vented to the exterior of the vehicle.



2) Adding a simple vent to a cassette in a sealed external locker:

Where an 'into locker' or auto vent is not fitted there are some simple methods to add a cassette vent. The following image shows a very simple way to add a vent to a Thetford cassette that is in a sealed external toilet locker. NZLC considers this modification meets the PGDB determination of the external vent requirement. The example uses a small micro irrigation dripper which will more than adequately ventilate the cassette with minimal odour release. The added vent is adjustable and can be closed for emptying.



Should the regulations be amended to remove the impractical venting requirement the small fitting hole can be plugged and sealed with a micro irrigation plug for a low impact result.



There are multiple water system ventilation devices available that may meet the requirement requirements for 'in locker' or external venting. The following examples of low cost, small ventilation valves with BSP available from major irrigation suppliers including The Water Sprinkler Shop and Irrigation Express can be easily fitted and later plugged when removed.

3) Venting from the sealed cassette locker to the vehicle exterior.

The smaller the external vent, the less odour that will be displaced to the outside of the vehicle. It is widely recognised throughout the vehicle camping industry and community that the regulations requiring external venting of sealed toilet cassettes achieve no practical purpose.

NZLC recommends a minimal size vent to outside of the toilet cavity door which can be achieved with a 4mm tube or small cuts in the rubber door seal without unnecessary damage to the vehicle bodywork and appearance. A tidy option is to fit a Tenob vent which includes a mesh filter.



<https://www.tenob.co.nz/shop/hoses-non-fuel-accessories/drain-plastic-long-tenob/>

Application

SOG systems

Fan forced ventilation may be achieved by using an industry designed [SOG system](#) on many Thetford toilet cassettes. These may have a charcoal filter installed. SOG systems work by creating a suction when the slide vent is opened directing odours outside.

Note. Whether fitting or checking ventilation of a toilet cassette the vent hose must raise above the height of the cassette. If the vent hose does not rise above the height of the cassette this would be considered a fail, for self-containment testing under the PGDB self-contained vehicle regulations.

In such situations a modified vent may be required.

Application

Installing an external toilet waste vent and vent into removable cassettes

The current PGDB self-containment regulations require a vent connection to be fitted from the cassette to the vehicle exterior away from windows and doors. The exception is where the cassette auto vents directly into the external toilet locker as detailed above. NZLC considers this requirement a temporary measure until such time as the regulations are amended in late 2024. **The installation of an external vent hose to a sealed toilet cassette may not be in line with the manufacturers design but it is currently required under NZ legislation.**

Accordingly, NZLC recommends that the cassette toilet vent modification be installed in a low impact, low cost, way that can be simply removed in due course without unnecessary damage.

There are many recent examples of toilet cassette venting using 13 mm hose, with a click-on fitting attached to the cassette cap. NZLC does not consider this method of modification as best practice, with potential health risks.

- If a larger than needed vent outlet fitted at the vehicle exterior it will require a method to prevent access of birds and vermin.
- A larger than needed vent will accumulate faecal matter and moisture from the cassette.
- The vent attachment must be manually handled, removed then reattached to the cassette for each time the cassette is removed or installed.
- The vent hose must rise above the height of the cassette when installed and when disconnected may drip faecal matter into the surrounding area.
- A 13mm, unfiltered, hose vent may release unpleasant toilet odour to the vehicle exterior and may attract toilet flies and other insects.

The following images show a low impact, toilet cassette venting option, that meets the requirements of the PGDB regulations and can be simply removed should the regulations be amended. This 'required' modification uses micro irrigation fittings.



- A small treaded micro connector is screwed into the top of cassette. A small hole is required.

- The fitting may be barbed at one end with thread at the other end.



- 4mm, press on, flexible hose is pushed onto the vent fitting. The vent hose must rise above the level of the cassette and then exit the vehicle. The hose can exit the vehicle via wall, floor, roof with low visible impact.

- A simple sleeve using flexible hose and a micro irrigation plug can be used to sealed the cassette vent for emptying.



- In the event that the venting requirement is overturned the vent connection can be removed and the hole sealed with the micro irrigation plug.

Note: If the toilet cassette is positioned near the sink or handbasin the vent hose could be tee connected into the main waste vent hose to avoid creating another external hole.



This example of adding a vent provides a low cost, low impact solution and can be applied to all types of toilets cassettes and waterless toilets. Due to the minimal size of the vent hose no additional exterior protection device fittings such as a vent cover or grill (reg 20, c, iii) will be required.