



Ministry of Business, Innovation & Employment – Public release of the submissions received on the exposure draft of the technical requirements for self- contained vehicles, June 2023

Includes:

The cover letter sent to stakeholders seeking their submissions, 16 June 2023
Exposure draft of the technical requirements for self-contained vehicles
Submissions received on the exposure draft from: <ol style="list-style-type: none">1. New Zealand Motor Caravan Association Inc. (NZMCA)2. Master Plumbers, Gasfitters & Drainlayers NZ Inc.3. Rental Vehicle Association NZ Inc.4. Spaceships Ltd.5. NZ Lifestyle Camping Ltd.6. ToiletsNZ7. Tourism Holdings Ltd.8. The Recreational Vehicle Industry Association9. Waterless Composting Toilets NZ Ltd.

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Cover letter - Exposure draft of the technical requirements for self-contained vehicles

16 June 2023

Kia ora,

Attached to this document are draft technical requirements that vehicles will need to meet to be certified as self-contained under the new self-containment certification regulatory system.

Background

In 2022, MBIE consulted on options for self-containment technical requirements, and included a list of draft technical requirements. These requirements were created with the assistance of stakeholders across the freedom camping sector.

Since then, the Self-contained Motor Vehicles Legislation Bill has been enacted. This Act requires Government to make Regulations that set out new technical requirements for self-contained vehicles. These technical requirements will be used to certify vehicles under the new self-containment certification regulatory system.

Government is intending to make Regulations within the next three months.

Purpose of this consultation

The purpose of this small, targeted consultation is to double-check with you and other knowledgeable stakeholders that the wording of the draft technical requirements is:

- generally fit for purpose; and
- sufficiently clear and usable, and has no unintended purposes.

This is **not** an opportunity to relitigate the requirement for self-contained vehicles to have a fixed toilet or any other policy issues relating to the freedom camping reforms.

How to have your say

You can tell us what you think about the draft technical standards by providing a submission in writing (there is no set format). The deadline for providing your feedback is **5pm Friday 30 June 2023**.

We strongly encourage you to provide your feedback in early so there is an opportunity for MBIE to ask follow-up questions, particularly if your feedback is highly technical.

Please feel free to send the draft to knowledgeable people within your organisation or your membership who you think could contribute to your organisation's submission. However, MBIE will only accept one submission per organisation.

As technical standards are still to be considered by Cabinet, we ask that you keep this consultation confidential to those within your organisation at this time.

Submissions received after the deadline will not be considered. Extensions to this deadline will only be granted in exceptional circumstances.

How the new standards are designed to work

The Regulations prescribe a set of performance-based technical standards that all vehicles (including caravans) will need to meet in order to be certified as self-contained.

These standards are set out in a similar way to the performance standards in the Building Code, with an objective, a functional requirement, and a performance requirement. In the case of the proposed self-containment standards, it would be:

- Tier One: an objective that all certified self-contained vehicles must protect the natural environment from contamination and pollution from wastewater and solid waste by prescribing the minimum facilities needed to contain the waste which vehicle occupants produce and to provide fresh water which they require.
- Tier Two: functional requirements – what the vehicle's self-containment system must be able to do to satisfy the objective.
- Tier Three: performance requirements – the qualitative or quantitative criteria the vehicle's self-containment system must meet in order to comply.

The standards also contain a set of general technical requirements that self-contained vehicles must meet.

The standards are very similar to those we consulted on in the [Freedom Camping Regulations Discussion Document](#). However, they have further developed to clearly show the intention that they cover vehicles with waterless toilets. We also note that some wording and structure has changed slightly from what we originally consulted on as a result of Parliamentary Counsel drafting to more clearly reflect intent.

The PGDB will issue guidance on how to interpret the standards, in consultation with the sector.

How we will use your submissions

The information provided in submissions will be used to inform final drafting of the technical requirements. When making a submission, you can do so anonymously and choose not to provide contact details. We may contact people who make submissions directly if we require clarification of any matters in their submission, or would like further information from them.

Release of information

We will analyse the submissions we receive and publish them on our website: www.mbie.govt.nz

When making a submission, we will consider you to have consented to it being published unless you specify otherwise. If your submission contains any information that is confidential or you do not wish for us to publish it, please:

- indicate this at the beginning of the submission, with any confidential information clearly marked within the text.
- Submissions may be requested under the Official Information Act 1982.

Please clearly indicate which parts you consider should be withheld, together with the reasons for withholding the information and the grounds under the Official Information Act 1982 you believe apply. We will take such objections into account and will consult with submitters when responding to requests under the Official Information Act 1982.

Private information

The Privacy Act 2020 establishes certain principles with respect to the collection, use and disclosure of information about individuals by various agencies, including ours. Any personal information you supply to us in the process of making a submission will only be used for the purpose of assisting in the final drafting of the technical requirements.

Please clearly indicate in your submission if you do not wish for your name, or any other personal information, to be included in any summary of submissions that we may publish.

Ngā mihi,

MBIE Freedom Camping Team

Exposure draft of the technical requirements for self-contained vehicles

Subject to further consideration and the
Parliamentary Counsel Office's QA processes

DRAFT FOR CONSULTATION

Plumbers, Gasfitters, and Drainlayers (Self-Contained Vehicles) Regulations 2023

Governor-General

Order in Council

At Wellington this day of 2023

Present:
in Council

These regulations are made under section 172(1A) of the Plumbers, Gasfitters, and Drainlayers Act 2006—

- (a) on the advice and with the consent of the Executive Council; and
- (b) on the recommendation of the Minister of Tourism after consultation in accordance with section 172C(1) of that Act.

Contents

		Page
1	Title	3
2	Commencement	3
3	Interpretation	3

Subject to further consideration and the
Parliamentary Counsel Office's QA processes

**Plumbers, Gasfitters, and Drainlayers (Self-Contained
Vehicles) Regulations 2023**

Part 2
Inspection and certification of self-contained motor vehicles

Objective

11	Objective of this Part	7
	<i>Requirements for self-containment certification</i>	
12	Requirements for self-containment	7
13	Requirements for self-containment: further detail	7
14	Critical self-containment elements	8
	<i>Specifications for facilities of self-contained motor vehicles</i>	
15	Water supply system specifications	8
16	Toilet specifications	9
17	Wastewater system specifications	9
18	Loading and offloading mechanism specifications	10
19	Ventilation system specifications	10

Regulations

1 Title

These regulations are the Plumbers, Gasfitters, and Drainlayers (Self-Contained Vehicles) Regulations 2023.

2 Commencement

These regulations come into force on 1 October 2023.

3 Interpretation

In these regulations, unless the context otherwise requires,—

Act means the Plumbers, Gasfitters, and Drainlayers Act 2006

blackwater means the wastewater described in paragraph (a)(i) of the definition of wastewater

Board means the Plumbers, Gasfitters, and Drainlayers Board

certificate of self-containment means a certificate issued under section 87U(3)(d) of the Act

greywater means the wastewater described in paragraph (a)(ii) of the definition of wastewater

self-containment certification authority or **authority** means a person appointed under section 87C of the Act, or reappointed under section 87E of the Act, as a self-containment certification authority

self-containment levy means a levy described in section 172B of the Act

warrant card means a warrant card described in section 87X(1)(b) of the Act

wastewater—

(a) means—

- (i) any water or other material discharged from a fixture that is used to receive, process, or discharge human excrement:
 - (ii) any water, other than water referred to in subparagraph (i), discharged from a fixture (for example, a kitchen sink)
- (b) includes solid waste material from a waterless toilet

wastewater system means the pipes and other fixtures that transport wastewater from the place where water is received or used to the place where it is ultimately discharged.

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Part 2

Inspection and certification of self-contained motor vehicles

Objective

11 Objective of this Part

The objective of this Part is to protect the natural environment from contamination and pollution from wastewater and solid waste by ensuring that all certified self-contained motor vehicles provide the prescribed minimum facilities needed to contain the waste that vehicle occupants produce and to be capable of providing the fresh water those occupants require.

Requirements for self-containment certification

12 Requirements for self-containment

The requirements for self-containment for a self-contained motor vehicle as referred to in section 87U(3)(b) of the Act are as follows:

- (a) a water supply system that stores and conveys water in a secure manner that prevents contamination of the water:
- (b) a fixed toilet that collects human waste securely and hygienically:
- (c) a wastewater system that both stores and collects greywater and blackwater securely and hygienically:
- (d) a sink that is installed safely and drains to a grey water tank:
- (e) a mechanism that enables water to be loaded into the motor vehicle securely and in a way that does not contaminate that water:
- (f) a mechanism that enables wastewater to be disposed of securely and without exposing the person undertaking the disposal to contact with that wastewater:
- (g) secure rubbish storage:
- (h) a ventilation system that remove odours from the motor vehicle.

13 Requirements for self-containment: further detail

- (1) In order for a self-containment certification authority to be satisfied that a motor vehicle meets the requirements for self-containment set out in regulation 12, the facilities described in the requirements must—
- (a) be of sufficient size, volume, and durability to be able to operate for a minimum of 3 days for the maximum number of occupants for which the self-contained vehicle is certified; and
 - (b) be constructed from fittings or items of equipment that are—
 - (i) fit for purpose; and
 - (ii) made from suitable materials, including that—

7

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Part 2 r 14

**Plumbers, Gasfitters, and Drainlayers (Self-Contained
Vehicles) Regulations 2023**

- (A) pipes and fittings that reticulate water, such as taps and valves, are made from materials that will not contaminate water; and
- (B) tanks for storing wastewater and associated pipes, pipe fittings, and valves, are made from non-corrodible materials; and
- (C) appliances, fixtures, fittings, tanks, and pipes used in the wastewater system are made from non-toxic, non-corrodible, and stable materials; and

(iii) installed in accordance with general standards of installation, including in particular that—

- (A) fittings and equipment in a motor vehicle's sanitary system are installed and secured according to good trade practice; and
- (B) tanks are securely mounted and capped to avoid damage or leaks from water movement while the motor vehicle is moving; and
- (C) water reticulation pipes are fitted in a way that ensures they do not fail or leak at the system's design pressure; and
- (D) appliances, fixtures, fittings, tanks, and pipes used in a wastewater system are securely fixed or fastened.

(c) meet the specifications set out in regulations 13 to 19.

(2) In this regulation—

fit for purpose, in relation to an element of a motor vehicle's self-containment facilities, means the element has been designed for the purpose or function for which it has been used, and it has been installed and is being used in a way that ensures it remains functional for at least the period of the certification

good trade practice means a standard of work that is consistent with the standard expected from a qualified tradesperson.

14 Critical self-containment elements

The facilities set out in regulation 12 are the critical self-containment elements referred to in section 87X(3)(a) of the Act.

Specifications for facilities of self-contained motor vehicles

15 Water supply system specifications

In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(a), a motor vehicle's water supply system must—

- (a) be capable of storing and reticulating water to the motor vehicle's other facilities; and

- (b) be protected from contamination from external sources; and
- (c) be installed in a manner that—
 - (i) avoids the likelihood of contamination within the system and from the water main; and
 - (ii) uses components that will not contaminate the water; and
 - (iii) pipes water to sanitary fixtures (such as toilets, showers, and handbasins) and sanitary appliances (such as dishwashers) at flow rates that are adequate for the correct functioning of those fixtures and appliances under normal conditions; and
- (d) be constructed in a way that allows air to enter the system in order to displace the water leaving the tank; and
- (e) include 1 or more water storage tanks that are—
 - (i) protected from the risk of deterioration from sun exposure, either by being—
 - (A) made of a material that is resistant to ultraviolet light; or
 - (B) stored in a way that avoids exposure to sunlight; and
 - (ii) adequately supported and secured to avoid creating any hazard while the motor vehicle is in motion.

16 Toilet specifications

In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(b), a motor vehicle must have toilets that—

- (a) are fit for purpose; and
- (b) are fixed to the motor vehicle with the seat rigidly mounted in position and do not require removal in order to empty human waste; and
- (c) drain or flush directly into a suitably designed and fitted blackwater tank.

17 Wastewater system specifications

(1) In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(c), a motor vehicle must have a waste water system that—

- (a) safely and reliably conveys wastewater from the facilities that the motor vehicle is required to have to storage tanks or vessels and stores this wastewater securely within the motor vehicle until the tanks or vessels are emptied; and
- (b) stores greywater and blackwater separately; and
- (c) has water drainage pipes that are a sufficient size, watertightness, and gradient to allow for the effective and convenient egress of wastewater from any sinks, basins, and showers into greywater storage.

Part 2 r 18 **Plumbers, Gasfitters, and Drainlayers (Self-Contained
Vehicles) Regulations 2023**

- (2) The storage of greywater referred to in subclause (1)(b) must be in either—
 - (a) 1 or more fixed tanks that are connected to the motor vehicle; or
 - (b) 1 or more portable tanks that are connected to the motor vehicle.
- (3) The storage of blackwater referred to in subclause (1)(b) must be in either—
 - (a) removable cassettes that fit in the motor vehicle's toilet; or
 - (b) 1 or more fixed tanks that have an isolating valve that allows the system to be emptied safely.

18 Loading and offloading mechanism specifications

- (1) In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(e), a motor vehicle must have pipes and hoses for loading water into water storage tanks that are protected from backflow or any cross-contamination.
- (2) In order to meet the requirement for self-containment relating to a wastewater system in regulation 12(1)(f), a motor vehicle must have—
 - (a) pipes and hoses for discharging wastewater from the motor vehicle that are of a sufficient size, strength, and durability for the clean, convenient, and safe discharge of wastewater; and
 - (b) appropriate storage for the pipes and hoses used to discharge wastewater that minimises the health risks associated with residual contaminants on the pipes and hoses; and
 - (c) sufficient facilities for the safe and secure offloading of solid waste from a waterless toilet (if applicable).

19 Ventilation system specifications

In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(h), a motor vehicle must have a ventilation system that—

- (a) adequately ventilates the motor vehicle to ensure unpleasant or unhealthy odours do not escape directly into the motor vehicle's interior; and
- (b) has venting pipes that are of a sufficient size and are installed in a way that ensures unpleasant or unhealthy odours and foul air easily escape to the exterior of the motor vehicle; and
- (c) ventilates wastewater storage tanks directly to the exterior of the motor vehicle to ensure foul air and noxious gases do not accumulate inside the tanks; and
- (d) includes vent outlets for wastewater storage tanks installed at a height that safely prevents wastewater leakage; and
- (e) includes pipes connecting sanitary appliances and sanitary fixtures to wastewater storage tanks that are fitted with water traps to limit the pas-

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sage of foul air and noxious gases from the tanks to the interior of the motor vehicle.

Submissions on the exposure draft of the technical requirements for self-contained vehicles

1. The New Zealand Motor Caravan Association Inc. (NZMCA)

Submission on Exposure Draft of Plumbers, Gasfitters, and Drainlayers (Self-Contained Vehicles) Regulations 2023

INTRODUCTION

1 The New Zealand Motor Caravan Association Inc. (NZMCA) welcomes the opportunity to provide feedback on the exposure draft of the Plumbers, Gasfitters, and Drainlayers (Self-Contained Vehicles) Regulations 2023. In doing so we note that the background paper introducing this consultation refers to self-containment technical requirements. The comments and suggestion offered below are based on the assumption that these technical requirements are contained within the circulated Part 2 of the draft Regulations.

2 By way of background NZMCA has over 116,000 members who own and use over 60,000 self-contained camping vehicles. We operate a network of around 500 'Self-Containment Officers' who volunteer their time to inspect members' vehicles as well as those owned by our commercial rental vehicle partners. Over the year to 30 June 2023 our self-containment officers inspected more than 16,700 vehicles and during the past four years over 61,000 vehicles. We are unsure of the total size of the camping vehicle market but believe that NZMCA inspectors are responsible for 80% of all the inspections of self-contained camping vehicles in Aotearoa.

3 Through the involvement of senior self-containment officers NZMCA contributed to the technical advisory group which during early 2022 offered MBIE early advice on the technical content of the proposed self-containment regulations. This advice was generally taken up in the Freedom Camping Regulations Discussion Document to which NZMCA provided a submission on in October 2022.

4 This submission offers NZMCA's overall perspective on the draft Regulations and then considers these on a clause by clause basis. We offer suggestions for worthwhile amendments to some clauses where we consider these to be unclear or not likely to work in practice.

OUR OVERALL PERSPECTIVE ON THE DRAFT REGULATIONS

5 The Association is supportive of the overall response offered in the draft Regulations and specifically its performance-based approach. This approach will allow some flexibility around how those involved in the self-contained camping vehicle market can meet the technical standards expected in vehicles certified as being self-contained under the parent Act.

6 Notwithstanding NZMCA's general support for this performance-based and flexible approach to regulating self-containment, we appreciate the need for a balance between certainty and flexibility in this regulatory system. This is for the sake of those using it. We do not believe that the correct balance has been achieved in the draft Regulations. Some of our suggestions below offer quite specific specifications of technical requirements which will tend to replace this intended flexibility with more certainty. These suggestions are made in order to make the proposed regulatory system easier for this working in it and in particular NZMCA's network of vehicle inspectors.

7 NZMCA appreciates that much of the specific design, installation and product details around compliant self-containment systems will be set out in the forthcoming technical guidelines from the Plumbers, Gasfitters and Drainlayers Board (PGDB). In our opinion the eventual balance between flexibility and certainty will be decided once these guidelines are in place. However, this depends on the level of specificity and clarity provided in PGDB's guidelines as well as their legal and technical status within the self-containment regulatory system. The challenge here is that this status may not be apparent to those choosing to use this regulatory system. In particular the legal and technical balance between the self-containment Regulations and PGDB's technical guidelines is not clear or obvious.

8 Without some level of specificity within the Regulations, NZMCA foresees disputes – most likely between vehicle owners and vehicle inspectors, over interpretation of the technical standards within the Regulations. If such disputes become commonplace the morale and motivation of vehicle inspectors – who mostly are volunteers, will decline and some will simply give up.

9 NZMCA's volunteer vehicle inspectors (which we call Self-Containment Officers) form the backbone of the Associations self-containment certification system. As noted above this system delivers 80% of self-contained vehicle inspections. NZMCA believes that the viability of the new self-containment regulatory system relies on the Association's existing vehicle inspection and certification system remaining at its present scale and structure albeit with adaptations to meet the new regulatory requirements. If NZMCA's inspection/certification system hollows out through significant attrition of vehicle inspectors the only other option for delivering this system is a user pays/profit driven one. This most likely will mean a patchy geographic spread of inspectors and more expensive system for users. The regulatory system's funding model appears to rely on volume and the more expensive and hard to use the system becomes the more camping vehicle owners will opt out of it.

10 In summary NZMCA believes that some of the content of the self-containment Regulations need to be quite specific and directive so that there is no doubt as to what vehicle owners are required to have in their camping vehicles in order to gain certification. Such specificity and direction will remove sources of dispute between vehicle owners and vehicle inspectors. The more amicable and contention free we can the system, the more vehicle inspectors we can retain in it and the more viable the system remains.

REQUIREMENTS FOR SELF-CONTAINMENT

11 NZMCA generally supports the scope of the elements required for self-containment as contained in clauses 12 and 13 of the Exposure Draft. Some of the detailed descriptions/definitions of these elements require amendment in our opinion. These amendments are on account of the possible practical implications of these descriptions/definitions.

12 Clause 12(a) – reference here and elsewhere in the Regulations should be to potable water or drinking water rather than simply water. In our opinion it is important to ensure that the water supply system in a vehicle is focused on delivering potable drinking water to the vehicle users This will emphasise the importance of maintaining suitable hygiene and safety measures for every element in this system – including especially the potable/drinking water storage tank. We note that the term drinking water rather than potable water is adopted in the Water Services Act and it may be worth referencing this definition as part of the Interpretation clause (clause 3) of the draft Regulations.

13 Clause 12(d) should require a sink to be permanently installed in the vehicle and that it drains to a compliant wastewater tank (rather than grey water). Some camping vehicles have a combined grey water and black water tank. This clause could be alternatively amended to grey water or black water tank.

14 Clause 12(f) may be difficult to achieve in practice with rollaway type grey water tanks. Disposing of grey water from these tanks can involve small spillages and some owner contact with the wastewater. Given the chemical/biological nature of this water, the small volumes involved and the fact that they are emptied into dump stations with surrounding boundary containment means that any spillages are not a risk to human health or the environment. This clause could usefully be amended as follows 'a mechanism that enables wastewater to be disposed of conveniently and with minimal exposure to the person undertaking the disposal of that wastewater'.

15 Clause 12(g) The term secure is vague - does it refer to the storage container being fixed securely to the vehicle or that it has a secure lid?. It may only be appropriate to have a rubbish container with a secure lid and to expect vehicle owners to apply common-sense to where it is kept within the vehicle. NZMCA believes that a minimum size of 4 litres should also be specified for this container to avoid any doubt.

16 Clause 12(h) A vehicle's ventilation system includes both means of extracting odours and foul air from a vehicle and avoiding their collection in the vehicle in the first place. The later function is served by valves, vents or traps in pipes between sanitary fixtures such as sinks and showers and the wastewater holding tanks. As noted below we believe that the approach taken to ventilation is somewhat contradictory and could be made less so by acknowledging the dual role (exclusion and removal) of a vehicle's ventilation system. This clause could be amended as follows 'a ventilation system which either excludes or removes odours from the motor vehicle.'

17 Clause 13(1)(a) NZMCA believes that the Regulations should specify the minimum volumes of drinking water and wastewater required to be stored in a vehicle. This minimum should be four litres per person per day or 12 litres per person for a minimum self-containment period of three days. This minimum should apply to storage of drinking water and wastewater. Ideally there should be a one-to-one relationship between a vehicle's drinking water storage capacity and its grey water tank capacity although given that black water is stored separately (normally in a cassette) this should not be a requirement. Any specification of the balance between grey water and black water storage capacity should be left for the PGDB technical guidelines.

18 Clause 13(1)(b)(ii) (A) The water being reticulated in this clause could usefully be limited to drinking water and not all water in a camping vehicle. While almost all pipes in a vehicle's plumbing/sanitary system are made of stable materials which are non-toxic, the risk here only relates to drinking water and not wastewater.

19 Clauses 13(1)(b)(ii)(B) & (C) could easily be combined as they deal with the same question – material qualities, but are applied to different components.

20 Clause 13(1)(b)(iii)(B) There is a practical problem with the requirements that tanks are securely mounted and capped. Many vehicles use portable or 'roll-a-way' grey water tanks which are stored outside and adjacent to the vehicle when it is parked up. In transit these tanks are not commonly mounted in the vehicle but are nonetheless safely secured (eg. in a cupboard). Onboard and securely mounted grey water and black water tanks have vent pipes to continuously extrude odours to the outside of the vehicle. It would be difficult to cap these during vehicle travel because there are most often under the vehicle. The vents are (and should be) designed to avoid discharge of grey or black in transit so capping of these vents is unnecessary. We suggest that this clause should be amended as follows 'tanks are firmly secured and adequately contained to avoid damage or leaks from water movement while the vehicle is moving'.

21 Clause 13(2) NZMCA is happy with the definitions of fit-for-purpose and good trade practice which are offered in this clause, and we believe that they should be here. There has however been a recurring problem of interpreting these in practice. This problem in particular has arisen around the re-certification of some imported vehicles. This may be a level of detail and interpretation which is best resolved within the PGDB technical guidelines.

SPECIFIC SYSTEM REQUIREMENTS

22 Water Supply system specifications. As discussed above we suggest that this provision refers to potable water or drinking water rather than just to water. This is so for consistency with other legislation which deals with drinking water and human health concerns and to be consistent with the Regulations' objective as set out in proposed clause 11 which refers to fresh water.

23 Clause 15(d)(iii) While the references made in this clause to sanitary fixtures and appliances are by way of example, we believe that fixtures should at least include a reference to sinks (as these are mandatory) and appliances to washing machines for avoidance of doubt.

24 Clause 15(e) should make reference back to the minimum drinking water storage requirements we have proposed for clause 13(1)(a). Clause 15(e)(i)(A) and (B) should be amended as follows '(A) made of food grade quality material, and, (B) either made of ultraviolet light resistant material or stored away from sunlight'.

25 Toilet specifications. The clear and appropriate definition of a compliant toilet for the self-containment Regulations is critical to delivering on the intent of the Government's recent freedom

camping reforms. In this regard NZMCA believes that the definition offered in clause 16 is deficient and requires a number of amendments.

26 Clause 16(b) - in this clause it is not the toilet seat which needs to be rigidly mounted to the vehicle but the toilet itself. Most toilet seats can be lifted for cleaning so the extent to which lifting toilet seats are rigidly fixed is debatable. Clause 16(b) should be amended as follows 'are permanently fixed to the vehicle and do not require removal in order to empty human waste'. We note that this definition will prohibit the use of portable toilets (porta potties) and waterless and so-called composting toilets which are required to be dismantled for the removal of human waste. This definition should apply regardless of the manufacturers' claims around the required frequency for emptying/dismantling of the toilet. The definition also allows a fixed toilet to be located on a sliding platform and able to be stored in a cupboard when not in use. Such a method of fixing and positioning is arguable not rigid.

27 Clause 16(c) is problematic for at least two reasons. The most apparent one is that it does not refer to cassettes which are used in perhaps 80% of fixed toilets. Cassettes are referred to in clause 17(3)(a) in respect of them being seen as a compliant form of black water storage. Clause 16(c) however refers to a 'fitted blackwater tank' which of course is not a cassette. We suggest that clause 16(c) be amended as follows 'drain or flush directly into a compatible cassette or a suitable designed and fitted blackwater tank'.

28 Composting and incinerating toilets. Clause 16 probably does not adequately provide for composting and incinerating toilets. As noted above, most composting toilets which are likely to be useful in camping vehicles, require dismantling for the removal of residual waste so would not comply with the proposed definition for fixed toilets. Larger composting toilets may, however. Incinerating toilets produce residual dry material which needs to be emptied on a regular basis but which generally does not require the dismantling of the toilet itself. To provide for composting and incinerating toilets which meet the requirements of clause 16(b) we suggest an additional provision to clause 16(c) as follows 'or in the case of waterless toilets, empty into a compatible container which can be removed and emptied without dismantling the toilet.'

29 Reference to water supply system. We note initially that clauses 16, 17(1) and 19 refer to a 'water supply system in regulation 12'. This reference is somewhat confusing as clause 12 refers to the various requirements of self-containment while clause 12(b) refers to toilets and clause 12(c) refers to a wastewater system. The more accurate reference here should be to the 'self-containment system' which of course comprises both toilets and the wastewater system.

30 Clause 17(1)(a) by requiring the storage of grey water within a vehicle does not allow for the use of portable or 'roll-a-way' tanks for the collection and storage of grey water. This is despite clause 17(2)(b) acknowledging the use of such tanks. We suggest that provision should be made for the use of portable tanks both for the supply of drinking water and collection and storage of grey water. We note as well that the clause 17(1)(a) requires wastewater pipes and tanks to only connect to 'facilities the motor vehicle is required to have' rather than actually has. Clause 12 outlines the compulsory requirements of a self-containment which only include a sink and toilet. We assume this is a minor error in the draft Regulations. Accordingly, we suggest that clause 17(1)(a) be amended as follows. 'safely and reliably conveys wastewater from the sanitary fittings and appliances within the motor vehicle to storage tanks or vessels and stores this wastewater securely within or close to the motor vehicle until the tanks or vessels are transported away and/or emptied'.

31 Clause 17(1)(b) requires separate storage of grey water and black water. Some camping vehicles have a combined grey and black water tank which of course becomes a black water tank. Most waterless toilets separate out urine from faeces and store the urine separately for later disposal. Such systems work best if the urine and grey water are stored together in a black water tank. We suggest that clause 17(1)(b) be amended as followed 'stores grey water and black water separately or combined as a black water tank.'

32 Clause 17(1)(c) makes provision for pipework which allows for the effective and convenient egress of wastewater from sinks, basins and showers but ignores washing machines and dishwashers which are sometimes found in top-of-the-range motorhomes and caravans. We

suggest that this clause be amended either to include washing machines and dishwashers as these generate the largest flows or that the pipework be expected to provide egress for all wastewater from all sanitary fittings and appliances within a camping vehicle.

33 Clause 18(2)(c) appropriately attempts to address the offloading of solid waste from waterless toilets but does not really deal with the biggest risks associated with such an exercise. This risk is around how the waste is disposed of and related to this that it is either dumped on land as 'compost' or dropped into the general refuse collections provided by councils in most urban areas. The waste stream from composting toilets may be quite hazardous as it is unlikely to have decomposed to an inert state when it is removed. This risk is not related to the mechanism of removing waste from the vehicle so cannot be controlled as part of the self-containment Regulations. Our view is the MBIE should remain wary of claims that smaller composting toilets are as efficient as manufacturers and importers may claim and ensure that the smaller ones, which require dismantling to be emptied, are not considered to be compliant fixed toilets.

34 Ventilation system specifications. There is something of a contradiction between clauses 19(a) and 19(b). Clause 19(a) requires a certified self-contained camping vehicle to have ventilation 'to ensure unpleasant and unhealthy odours do not escape into a motor vehicle's interior'. On the other hand clause 19(b) requires ventilation which ensures that 'unpleasant and unhealthy odours and foul air easily escape to the exterior of the motor vehicle'. If clause 19(a) was effective then clause 19(b) would not be necessary.

35 Unpleasant or unhealthy odours in camping vehicles are likely to arise from two sources – from the use of the toilet or from fumes from the grey water tank circulating back into the vehicle's interior. The problem of grey water fumes can be resolved through the fitting of specialty valves or water traps. Requirements for and of these can be covered in the forthcoming technical guidelines from PGDB. The odours arising from people using the toilet can only be avoided by having a separate toilet compartment which is ventilated – most likely by mechanical means. Such a measure is not proposed in the draft Regulations and NZMCA supports this omission. This means that the presence of unpleasant odours from the use of the toilet is unavoidable (as they are in most dwellings) and that the common-sense solution is to open an adjacent window for a short time. To NZMCA this seems a reasonable and common-sense response. It also means that clause 19(a) should be deleted and clause 19(b) amended and strengthened. This amendment should make it clear that a camping vehicle's ventilation system is expected prevent the entry of unpleasant/unhealthy odours whenever possible and ensure such odours can easily escape from the vehicle interior when they are present. We suggest the following amendment to clause 19(b) 'ensures that the interior of a motor vehicle is well ventilated, and that foul air and unpleasant or unhealthy odours can quickly escape to the outside of the vehicle'

Once again on behalf of NZMCA I would like to thank the MBIE Responsible Camping Team for the opportunity to offer comments on the Exposure Draft. I am willing to offer the Team access to our team of senior technical advisors to answer specific technical questions which may result from this submission and the consultation process more generally.

Nāku noa, nā

New Zealand Motor Caravan Association Inc.

Alan Johnson

Senior Policy Analyst

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Postal: PO Box 72147, Papakura 2244

2. Master Plumbers, Gasfitters & Drainlayers NZ Inc.



**Master
Plumbers®**
Representing Excellence

Master Plumbers, Gasfitters & Drainlayers NZ Inc. is pleased to have the opportunity to comment on MBIE's consultation on their new technical standards for self-contained vehicles. We do not believe that the technical standards are generally fit for purpose—there is a risk that MBIE is creating a two tiered system whereby the plumbing systems of mobile homes do not have to meet that same standards of those of other unconventional homes e.g. tiny homes. Master Plumbers is concerned that the technical standards, through their (understandably) heavy focus on environmental protection are missing reference to overarching health and safety standards important for the self-contained vehicles themselves.

The technical standards do not appear to align with the standards specified by the Plumbing Code. The Plumbing, Gasfitting & Drainlaying code should apply uniformly to all dwellings, including mobile homes. The standards as they are currently introduce a level of subjectivity into certifying compliance that creates a not insignificant health and safety risk, especially for consumers. Furthermore, the technical standards do not specify that a certified practitioner must install the systems, only that installation must meet the standard of “good trade practice”.

The technical standards additionally lack any reference to gas standards. Master Plumbers is anecdotally aware that imports of US-produced mobile homes often contain intricate gas appliances not readily available in the New Zealand market, which makes these homes difficult for gasfitters to certify. MBIE should refer to New Zealand's current gas standards and use those to form a standard for gas appliances used in self-contained vehicles.

Master Plumbers is disappointed at the length of time frame for submitting on these proposed standards: it is too short. It is additionally disappointing to see MBIE establish a quasi-compliance schedule for mobile homes where plumbers have been disciplined for failing to comply with the existing Plumbing Code.

Master Plumbers welcomes any additional engagement on the development of these standards.

Greg Wallace, CEO

gwallace@masterplumbers.org.nz - **Phone number withheld for privacy reasons**

3. Rental Vehicle Association NZ Inc.

Thank you for the opportunity to review the document. We have considered it carefully and have nothing to add. Our concern in the past is that the specs for a self-contained toilet/waste system have not been tight enough, resulting in some vehicles being on the road that only meet an extremely wide definition of 'self-contained'.

There have also been challenges with old stickers on vehicles saying they are self-contained, but no mechanism for ensuring that they actually are (or still are), in other words, we don't have a sunset clause on old 'self-contained' vehicles, or a system for managing them.

There is one thing we noticed, S.12(h) the word 'remove', shouldn't it be 'removes' ?

Thank you again for the opportunity to participate.

Nga mihi

Ben McFadgen, CEO

Rental Vehicle Association NZ Inc.

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3B Jeep Rd, Raumati South, 5032

4. Spaceships Ltd.

Spaceships Limited Submission for Freedom camping regulations - consultation on new technical standards for self-contained vehicles

Feedback, and questions in **orange**

18 Loading and offloading mechanism specifications

1. (1) In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(e), a motor vehicle must have pipes and hoses for loading water into water storage tanks that are protected from backflow or any cross-contamination.
2. (2) In order to meet the requirement for self-containment relating to a wastewater system in regulation 12(1)(f), a motor vehicle must have—
 1. (a) pipes and hoses for discharging wastewater from the motor vehicle that are of a sufficient size, strength, and durability for the clean, convenient, and safe discharge of wastewater; and
 2. (b) appropriate storage for the pipes and hoses used to discharge wastewater that minimises the health risks associated with residual contaminants on the pipes and hoses; and
 3. (c) sufficient facilities for the safe and secure offloading of solid waste from a waterless toilet (if applicable).

Will removing fresh and or grey water tanks to fill and empty be no longer acceptable?

19 Ventilation system specifications

In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(h), a motor vehicle must have a ventilation system that—

- (a) adequately ventilates the motor vehicle to ensure unpleasant or unhealthy odours do not escape directly into the motor vehicle's interior; and
- (b) has venting pipes that are of a sufficient size and are installed in a way that ensures unpleasant or unhealthy odours and foul air easily escape to the exterior of the motor vehicle; and
- (c) ventilates wastewater storage tanks directly to the exterior of the motor vehicle to ensure foul air and noxious gases do not accumulate inside the tanks; and
- (d) includes vent outlets for wastewater storage tanks installed at a height that safely prevents wastewater leakage; and

-
- (e) includes pipes connecting sanitary appliances and sanitary fixtures to wastewater storage tanks that are fitted with water traps to limit the passage of foul air and noxious gases from the tanks to the interior of the motor vehicle.

I consider the above requirements under Ventilation system specifications in relation to a water supply system to be excessive.

A simple 'Smell Trap' blocks the gases coming up from the grey water holding tank and is a practical solution to stop odours spreading in the motor vehicle. This is a similar concept to the one used in all household toilets.

Why not just stipulate that a smell trap must be installed in the greywater system?

James Rolleston

5. NZ Lifestyle Camping Ltd.

Submission on draft Plumbers, Gasfitters and Drainlayers (Self-Contained Vehicles) Regulations 2023 Part 2

Recommended Changes / amendments to the draft document Part 2

1) **Clause 3** definition waste water

Suggestion: Delete subclause (b) “includes solid waste material from a waterless toilet”

Reasoning - Solid material from a waterless toilet is not waste water and should not be defined as such. Such byproducts are already covered under clause 18 (c) The solid human waste is effectively stored in a cassette and requires per 18(c) sufficient facilities for the safe and secure offloading of solid waste from a waterless toilet (if applicable).

2) **Clause 12 (1) h** Ventilation system

Suggestion: Remove word ‘system’ and rephrase ‘the vehicle shall be adequately ventilated to remove odours from the motor vehicle’

Reasoning - All motorhomes and caravans have odours from cooking, food products, people passing gas etc. It is historic and sometimes unpleasant. Use of the phrase ‘a ventilation system’ implies a mechanical system to remove odours. This is unnecessary as normal ventilation is adequate. Further it should be noted that cassette and waterless composting toilets are a sealed system and while some have a mechanical ventilation system the majority only have a pressure release valve. Odours are controlled by the addition of eco friendly chemicals. These are recommended in the current standard. A specific ventilation system can be added to a vehicle but is not a necessity.

3) **Clause 13 (iii) (B)** capped tanks

Suggestion 1: The waste water system is required to be sealed. Just stating securely mounted and capped to avoid damage is not sufficient. The wording should include ‘capped or sealed’ or ‘capped and sealed.’

Reasoning - Where onboard portable tanks are installed on a camping vehicle waste fittings are often installed through the ‘cap’ for easy of installation and removal. There has been a practice of just sticking a hose through the cap for easy removal. While these containers are capped they are not sealed.

Suggestion 2: ‘tanks are securely mounted’ should be changed to ‘onboard tanks are securely mounted’

Reasoning - Most European Caravans have external tanks and the distinction is important.

4) **Clause 13 (iii) (D)** securely fixed or fastened

Suggestion: add ‘or where portable tanks are used these are secured for transit’

Reasoning - (D) currently only specifies for onboard tanks and doesn’t recognise portable tanks.

5) **Clause 15 (e)** material of water storage tanks.

Suggestion: add made of food grade material (usually HDPE) or designed for the storage of potable water.

Reasoning: The current wording implies that any old container can be used to store potable water. This is a health related issue. Refer to NZ / AUS standards for the transportation and storage of water and food.

6) **Clause 16 (b)** seat rigidly mounted

Suggestion: remove the word rigidly as this has a different meaning to secured or hinged which is more appropriate and applicable in this situation.

Reasoning - RV Toilet seats are removable and have some flexibility for comfort. For rigidly a piece of plywood with a hole could be used.

7) **Clause 17 (1) (a)** ‘stores this wastewater securely within the vehicle’

Suggestion: remove wording 'within the vehicle' or rephrase.

Reasoning - This does not allow for portable tanks which are subsequently mentioned in 17 (2) (b) so is at odds with the subsequent clause.

8) **Clause 18 (1)** pipes and hose protected from backflow.

Suggestion: remove the words protected from backflow.

Reasoning. This topic was raised in the Technical advisory committee and was rubbished at that time. The majority of caravan and motorhome fresh water tanks are filled with a standard hose through a 25 to 32 mm access hole. There is no opportunity for backflow in such cases. Where a vehicle has a 'low volume' pressurised on board system it already has one way valves in place. These regulations are for Freedom Camping purposes not for staying at paid campgrounds etc. The majority of camping vehicles in NZ will have no compliance requirement on this matter. A higher risk of contamination comes from hoses at dump stations that are used to wash out toilet cassettes. Note: dumpstation schematics are included in current NZS 5465:2001 guidelines but not in these regulations. This could be seen as a failing.

9) **Clause 19 (a)** Ventilation system specifications - 'ensure'

Suggestion: Remove word ensure or rephrase,

Reasoning - The only way to stop unpleasant odours from entering a vehicle is to have a pressurised environment. These vehicles are for camping and driving - odours will happen and there should be no need to have a mechanised ventilation system.

10) **Clause 19 (d)** vent outlets installed at a height that ...

Suggestion: Change wording to vent piping

Reasoning - Current industry practice is that waste piping raises above the height of the water fitting (e.g. shower or sink) then exit the vehicle, either up or down through the floor. The majority of vehicle waste venting is done through the floor and deconstruction and reconstruction work is required to install high vents with potential water egress and vehicle damage.

Notes:

This submission is made to ensure that sufficient quality control processes and checks are in place so that the final regulations are fit for purpose and are able to be administered accordingly.

It is noted that in calling for submissions the MBIE Responsible Camping Team has selectively excluded 'key stakeholders' from the invitation to submit on these regulations creating a dangerous precedent. This increases the risk of errors in developing appropriate regulations.

My name and contact details may be shared. I may be contacted for further information.

Gary Stoneley

Managing Director

NZ Lifestyle Camping Ltd.

(Self-containment issuing authority)

6. ToiletsNZ

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Leamington
Cambridge

021 877 902

Email withheld for privacy reasons

www.toiletsnz.co.nz

23rd June, 2023

To: MBIE
Wellington

SUBMISSION for changes to THE DRAFT REGULATIONS Plumber, Gasfitters and Drainlayers (Self Contained Vehicles) Regulations 2023

As the New Zealand importing and retail agent for the Nature's Head and OGO waterless toilets I would like to make the following comments and suggestions relating to the Draft Regulations.

I note that the Draft is '*Performance Based*', rather than '*Prescriptive*', as the previous Standard was. However, I'm concerned that in several areas the Draft leaves the interpretation of a Regulation wide open to the plumber or authorised inspector and also the vehicle owner. This will inevitably lead to wide variations in inspection standards across New Zealand, as to what is an acceptable installation to achieve a 'performance based outcome'.

I believe that the Draft needs some prescriptive guidance for inspectors, particularly around the capacity required for cassette toilets and waterless toilets.

Over the last 10 years, for urine storage in a toilet, we have used the yard-stick of around 1.4 litres of urine per person, per day, when it comes to storage capacity - but this can also range from 800mls to 2 litres per person.

On a per person/per day, basis, in a cassette toilet installation I would allow 1.4 litres for urine, plus say 0.6 litre for solids, and say 0.25 litres for flushing = 2.25 litres per person x 3 days = 6.75 litres capacity. Two people - 13 litres approx. For three people 20.25 litres - which exceeds most 'fixed' toilets with removable cassettes.

This would mean that a 20 litre cassette is sufficient for two people for three days, but not for three or more people, as a lot of people will produce up to 2 litres of urine per day. This would necessitate carrying a spare cassette for three person certification, and definitely for four or more persons, and then increasing pro-rata as the number of people increases. Children must be factored in as adults in the certification process.

For waterless (composting toilets) where urine is diverted and stored separately from solids there also needs to be 'prescriptive' guidance for inspectors. I would suggest that the urine bottle capacity be supplemented where necessary by an additional bottle/s, or alternative hygienic sealed plastic container/s, based on 1.4 litres per day/per person - as we have recommended for ten years now under NZS 5465:2001

My suggestions for amending the Draft Regulations follow:

Suggestions:

Delete Regulation 3 (a) (ii) (b) "includes toilet"

Create a new definition "Waste Material - "means solid waste from a waterless toilet".

Amend 18. (2) (c) for the safe and secure offloading of solid **waste material** from a . . .

Reasoning: it is impractical to refer to the handling of both liquids and solid material with regard to waste tanks and pipes.

Regulation 16:

Add: 16 (d) Notwithstanding the requirements of **16 (b)** - waterless toilets of modular (two piece) construction may remove the bowl section as required, to facilitate the emptying of **Waste Material** from the storage bin.

Comment: The two leading brands of waterless toilets which have been used satisfactorily under the old Standard for the past ten years - (the Airhead and the Nature's Head) - require the bowl section to be temporarily detached so that the semi-composted waste material in the base of the unit can be hygienically removed. There are currently hundreds of Airhead and Nature's Head waterless toilets fixed in self contained vehicles under NZS 5465:2001

Add: 16 (e) Where a waterless toilet diverts urine away from solids, the urine can be plumbed into a grey waste tank for disposal.

Comment: This has been an accepted practice for the last ten years under NZS 5465:2001. The reasoning is that the urine does not contain solid or suspended faecal matter, and is no different in the waste tank from the water collected from the shower - where many people choose to urinate while showering. Additionally, E coli from body washing goes down the shower drain as well, and is more hazardous than urine, which is initially sterile at source.

Regulation 18 (2) (c)

Amend to offloading of solid **waste material** from

7. Tourism Holdings Ltd.

On behalf of thl we submit the following feedback/questions.

We think the best option would be Option 2 Prescriptive, as having set measurements it is easier to comply, takes away the guess work and arguments for what is "fit for purpose"

We have seen examples in the past where different opinions come in to play with standards and interpretations of such. One recently being Gas hoses, when we changed from POL (bayonet) to QCC (Quick Connect) on Imports. We had a Gasfitter in Blenheim challenge the legality for use of QCC on a motorhome, and thought they could only be used on appliances (ie BBQ's and Outdoor Heaters). It took a bit of work with the parts supplier and the Gas Practitioner who did the sign off confirm the approval for use.

Hopefully the new "Green Warrant" would be similar to an EWOFF sticker, as the current "Blue Warrants" fall out of the pockets and can become lost in the Dashboard.

The infringement cost for " Failing to display" will be from \$200 to \$600. Does this assume we will no longer be able to fit a temporary label? as infringements also includes " Displaying an altered or fraudulent warrant"

Vehicle Inspectors (VI) - Plumbers and Gasfitters are automatically authorised VI's, We currently have NZMCA inspector authority we would like this to be transferred or ability to re-sit the exam under the PGDB. If thl/Action Manufacturing can't be authorised self-certifying agents, then all our new builds will need SC to signed off by the Gasfitters, at the time they certify the Gas, this is done as they leave the production line and will add considerable cost to manufacturers.

Thl manufacture units throughout the year, but they are not registered at the point of production being completed, and could be up to 6 months before they do get Registered. Is there a limit on the time between the Test and submitting the Registration Plate numbers?

Based on the proposal 4 yearly Rechecks would need to be done at the Branch's by their Registered Plumber, which means costs will escalate considerably. As per earlier point, thl would like to see our internal inspectors authority be transferred, or have the ability to re-sit the exam under the PGDB to ensure we aren't just lumping costs onto manufacturers and operators.

Cheers,

Matt

8. The Recreational Vehicle Industry Association

	Part 2	
	Inspection and certification of self-contained motor vehicles	
	<i>Objective</i>	
11	Objective of this Part	7
	<i>Requirements for self-containment certification</i>	
12	Requirements for self-containment	7
13	Requirements for self-containment: further detail	7
14	Critical self-containment elements	8
	<i>Specifications for facilities of self-contained motor vehicles</i>	
15	Water supply system specifications	8
16	Toilet specifications	9
17	Wastewater system specifications	9
18	Loading and offloading mechanism specifications	10
19	Ventilation system specifications	10

Commented [KN1]: Use of the words motor vehicles highlighted in green throughout the document – so these Regulations do not apply to caravans, travel trailers, horse floats etc??

Commented [KN2]: Motor vehicle – see all future green highlights

Plumbers, Gasfitters, and Drainlayers (Self-Contained Vehicle) Regulations 2015 Part 2 r 17

- (b) be protected from contamination from external sources; and
- (c) be installed in a manner that—
- (i) avoids the likelihood of contamination within the system and from the water main; and
 - (ii) uses components that will not contaminate the water; and
 - (iii) pipes water to sanitary fixtures (such as toilets, showers, and handbasins) and sanitary appliances (such as dishwashers) at flow rates that are adequate for the correct functioning of those fixtures and appliances under normal conditions; and
- (d) be constructed in a way that allows air to enter the system in order to displace the water leaving the tank; and
- (e) include 1 or more water storage tanks that are—
- (i) protected from the risk of deterioration from sun exposure, either by being—
 - (A) made of a material that is resistant to ultraviolet light; or
 - (B) stored in a way that avoids exposure to sunlight; and
 - (ii) adequately supported and secured to avoid creating any hazard while the motor vehicle is in motion.

Commented [KN3]: This clause is so vague as to be unenforceable and unnecessary – is it supposed to demonstrate some 'intent' to achieve a certain standard of installation?

16 Toilet specifications

In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(b), a motor vehicle must have toilets that—

- (a) are fit for purpose; and
- (b) are fixed to the motor vehicle with the seat rigidly mounted in position and do not require removal in order to empty human waste; and
- (c) drain or flush directly into a suitably designed and fitted blackwater tank.

Commented [KN4]: Plural – does this mean vehicles are required to have more than one toilet?

Commented [KN5]: This one can be argued (and will be in the Courts) – the move to restrict the style of toilet to those referred to as 'cassette' toilets (or fully plumbed black water toilets – which are very rare in New Zealand and non-existent in European vehicles, where the bulk of imported vehicles are sourced for our market) does not fully satisfy this clause. It will be argued that in removing the cassette elements of the toilet – the toilet is being removed from the vehicle for emptying – thus rendering so-called porta pottis allowable under these Regulations.

17 Wastewater system specifications

- (1) In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(c), a motor vehicle must have a waste water system that—

- (a) safely and reliably conveys wastewater from the facilities that the motor vehicle is required to have to storage tanks or vessels and stores this wastewater securely within the motor vehicle until the tanks or vessels are emptied; and
- (b) stores greywater and blackwater separately; and
- (c) has water drainage pipes that are a sufficient size, watertightness, and gradient to allow for the effective and convenient egress of wastewater from any sinks, basins, and showers into greywater storage.

Commented [KN6]: Again – so vague, it's unenforceable and leaves too much in the hands of the Testing Officer

9. Waterless Composting Toilets NZ Ltd.

Regulations

1 Title
These regulations are the Plumbers, Gasfitters, and Drainlayers (Self-Contained Vehicles) Regulations 2023.

2 Commencement
These regulations come into force on 1 October 2023.

3 Interpretation
In these regulations, unless the context otherwise requires,—

Act means the Plumbers, Gasfitters, and Drainlayers Act 2006

blackwater means the wastewater described in paragraph (a)(i) of the definition of wastewater

Board means the Plumbers, Gasfitters, and Drainlayers Board

certificate of self-containment means a certificate issued under section 87U(3)(d) of the Act

greywater means the wastewater described in paragraph (a)(ii) of the definition of wastewater

self-containment certification authority or **authority** means a person appointed under section 87C of the Act, or reappointed under section 87E of the Act, as a self-containment certification authority

self-containment levy means a levy described in section 172B of the Act

warrant card means a warrant card described in section 87X(1)(b) of the Act

wastewater—

(a) means—

(i) any water or other material discharged from a fixture that is used to receive, process, or discharge human excrement;

(ii) any water, other than water referred to in subparagraph (i), discharged from a fixture (for example, a kitchen sink)

(b) includes solid waste material from a waterless toilet

wastewater system means the pipes and other fixtures that transport wastewater from the place where water is received or used to the place where it is ultimately discharged.

3. wastewater system - again, need to add definitions for treatment and containment systems. Many dry toilets do not "transport" wastewater via pipes/fixtures, but contain to discharge i.e. exhibit no criteria of treatment or transportation but are a primary containment vessel for the control of expressed hazardous substance value until proper disposal is achieved.

Definition may need sub-bullets:

"wastewater system means the pipes and other fixtures that are used to -
(a) transport wastewater from the place where water is received or used to the place where it is ultimately discharged;
(b) treat wastewater to various standardized levels established prior to discharge or disposal; or
(c) contain wastewater before it is discharged.

3. wastewater (a)(i) "any water that is discharged" - concerning use of "discharged" in beginning of sentence. Not all fixtures discharge. Needs to include fixtures that are used to contain, or treat human excrement.

Definition could be: "any water from the human body or water/solution used for transporting, receiving, processing, containing, treating or discharging human excrement." Another approach could be breaking it up into fixture types i.e. "wet fixtures" (waterborne) and "dry fixtures" (non-waterborne such as composting toilets, incinerating toilets and other systems.)

Part 2

Inspection and certification of self-contained motor vehicles

Objective

12.(f) What does "mechanism" mean in this context?

Does it eliminate manual interaction entirely or is manual interaction still considered an appropriate means of disposal? If manual interaction is ruled out, this will mean many dry toilets no longer qualify, even though they still offer a secure way of disposal without exposing the person undertaking the disposal to contact with wastewater. "Mechanism" is the byproduct of free market engineering and should not be limited by definition exclusively as mechanisms themselves might not be needed if means can be satisfied.

Suggestion: "mechanism" could be changed to "means" to read "a means of wastewater disposal that enables wastewater to be disposed of securely and without exposing the person undertaking the disposal to contact with that wastewater."

11 Objective of this Part

The objective of this Part is to protect the natural environment from contamination and pollution from wastewater and solid waste by ensuring that all certified self-contained motor vehicles provide the prescribed minimum facilities needed to contain the waste that vehicle occupants produce and to be capable of providing the fresh water those occupants require.

Requirements for self-containment certification

12 Requirements for self-containment

The requirements for self-containment for a self-contained motor vehicle as referred to in section 87U(3)(b) of the Act are as follows:

- (a) a water supply system that stores and conveys water in a secure manner that prevents contamination of the water;
- (b) a fixed toilet that collects human waste securely and hygienically;
- (c) a wastewater system that both stores and collects greywater and blackwater securely and hygienically;
- (d) a sink that is installed safely and drains to a grey water tank;
- (e) a mechanism that enables water to be loaded into the motor vehicle securely and in a way that does not contaminate that water;
- (f) a mechanism that enables wastewater to be disposed of securely and without exposing the person undertaking the disposal to contact with that wastewater;
- (g) secure rubbish storage;
- (h) a ventilation system that remove odours from the motor vehicle.

13 Requirements for self-containment: further detail

(1) In order for a self-containment certification authority to be satisfied that a motor vehicle meets the requirements for self-containment set out in regulation 12, the facilities described in the requirements must—

- (a) be of sufficient size, volume, and durability to be able to operate for a minimum of 3 days for the maximum number of occupants for which the self-contained vehicle is certified; and
- (b) be constructed from fittings or items of equipment that are—
 - (i) fit for purpose; and
 - (ii) made from suitable materials, including that—

16.(b) What does it mean that toilets are to be "fixed to the motor vehicle with the seat rigidly mounted in position AND do not require removal in order to empty human waste"? Does it mean the entire toilet is not to be removed for emptying or does it mean that the lid cannot be removed for emptying either? If the lid of a composting toilet cannot be accessed, this eliminates this type of system as a viable solution for self-containment. However, these systems only require the lid is removed for access to chambers - the entire toilet does not need removal and the housing is always secured in place. Disassembly of toilet should be permitted as long as the foundation of the housing is locked in place. If it is of a dry

- (b) be protected from contamination from external sources; and
- (c) be installed in a manner that—
 - (i) avoids the likelihood of contamination within the system and from the water main; and
 - (ii) uses components that will not contaminate the water; and
 - (iii) pipes water to sanitary fixtures (such as toilets, showers, and handbasins) and sanitary appliances (such as dishwashers) at flow rates that are adequate for the correct functioning of those fixtures and appliances under normal conditions; and
- (d) be constructed in a way that allows air to enter the system in order to displace the water leaving the tank; and
- (e) include 1 or more water storage tanks that are—
 - (i) protected from the risk of deterioration from sun exposure, either by being—
 - (A) made of a material that is resistant to ultraviolet light; or
 - (B) stored in a way that avoids exposure to sunlight; and
 - (ii) adequately supported and secured to avoid creating any hazard while the motor vehicle is in motion.

Toilet specifications

In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(b), a motor vehicle must have toilets that—

- (a) are fit for purpose; and
- (b) are fixed to the motor vehicle with the seat rigidly mounted in position and do not require removal in order to empty human waste; and
- (c) drain or flush directly into a suitably designed and fitted blackwater tank.

16.(c) "drain or flush" - many dry systems do not "drain or flush". Is draining from the human body directly into a containment vessel compliant?

Wastewater system specifications

In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(c), a motor vehicle must have a waste water system that—

- (a) safely and reliably conveys wastewater from the facilities that the motor vehicle is required to have to storage tanks or vessels and stores this wastewater securely within the motor vehicle until the tanks or vessels are emptied; and
- (b) stores greywater and blackwater separately; and
- (c) has water drainage pipes that are a sufficient size, watertightness, and gradient to allow for the effective and convenient egress of wastewater from any sinks, basins, and showers into greywater storage.

Amendment suggestion: (c) drain, flush, or receive wastewater directly into a suitably designed and fitted blackwater tank.

Amendment suggestion: "fixed to the motor vehicle with the seat rigidly mounted in position and can be emptied without removing the foundation of the toilet housing which is to remain locked in place at all times."

17.(1)(a) "conveys wastewater" - again, many dry systems do not "convey" or "move" wastewater. They "contain" wastewater. Is conveying wastewater from the human body directly into the dry toilet containment vessels compliant?

Amendment suggestion: "safely and reliably conveys or contains wastewater from the facilities that the motor vehicle is required to have to storage tanks or vessels and stores this wastewater securely within the motor vehicle until the tanks or vessels are emptied;"

3.(a) "cassettes" - should also include "chambers" - this is industry standard terminology in dry toilet practice, and would be a good nod to keeping dry toilets as a viable option. This could also be addressed in above regulations wherever "tanks" or "vessels" are mentioned. By definition, a chamber is "a natural or artificial enclosed space or cavity."

Amendment suggestion:
"(a) removable cassettes or chambers that fit in the motor vehicle's toilet;"

- (2) The storage of greywater referred to in subclause (1)(b) must be in either—
 - (a) 1 or more fixed tanks that are connected to the motor vehicle; or
 - (b) 1 or more portable tanks that are connected to the motor vehicle.
 - (3) **The storage of blackwater referred to in subclause (1)(b) must be in either—**
 - (a) removable cassettes that fit in the motor vehicle's toilet; or**
 - (b) 1 or more fixed tanks that have an isolating valve that allows the system to be emptied safely.
- 18 Loading and offloading mechanism specifications**
- (1) In order to meet the requirement for self-containment relating to a water supply system in regulation 12(1)(e), a motor vehicle must have pipes and hoses for loading water into water storage tanks that are protected from backflow or any cross-contamination.
 - (2) In order to meet the requirement for self-containment relating to a wastewater system in regulation 12(1)(f), a motor vehicle must have—
 - (a) pipes and hoses for discharging wastewater from the motor vehicle that are of a sufficient size, strength, and durability for the clean, convenient, and safe discharge of wastewater; and
 - (b) appropriate storage for the pipes and hoses used to discharge wastewater that minimises the health risks associated with residual contaminants on the pipes and hoses; and
 - (c) sufficient facilities for the safe and secure offloading of solid waste from a waterless toilet (if applicable).

