



# Certified Self Containment APCNZ's Summary / Guidelines

For Motor Caravans , Caravans & Camper Vans

Updated June 2017

For Interpreting and Applying  
NZS 5465: 2001 incl. Amendment 2



## INTRODUCTION

This guideline has been developed by the All Points Camping Club of NZ to help persons completing self containment conversions and as a support tool for Self Containment Testing officers. It covers what is required under the standard and offers some suggestions. It is a guide only but can be referenced to as a discussion document if dispute arises. Other persons and organisations may apply different interpretations.

Self Containment is the ability to meet the ablutionary and sanitary needs of the occupants of a motor caravan or caravan, for a minimum of three days, without needing any external services or discharging any dry waste or sewage. All sewage is to be disposed of at a suitable waste dump station, which is connected to a sewerage or septic tank system. Dry waste should be carried and disposed of at a suitable rubbish disposal facility. Do not use chemicals in the self-containment system that could affect the operation of the dump station and attached systems.

### **All Points Camping's Participation in the Certified Self Containment Scheme**

The All Points Camping Club of New Zealand also known as All Points Camping NZ or All Points Camping, supports all classes of camper in the NZ from tenters through to Motorhomes. The CSC scheme applies to a large proportion of our membership and was developed as way to manage the health risks to individuals and communities in relation to people travelling or living in motorhomes or caravans. It does not and can not cover every class of camper. APCNZ endorses international practices for managing waste, including human and the CSC scheme is a part of that. APCNZ is actively working with and through local government and other organisations to ensure fair representation for all campers and fair implementation of the Freedom Camping Act and Self Containment bylaws.

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## VEHICLES SUITABLE FOR CERTIFICATION

Under the Standard the vehicle should come under the definition of being either a Motor Caravan or Caravan to be able to be certified or inspected for self containment.

**CARAVAN:** Defined under the Standard as “Any structure designed for human habitation, which is capable of being moved from one place to another, by being towed, or transported on another vehicle.”

**APCNZ Note:** *This definition of a caravan includes slide on type camping units and box type e.g. tiny houses and accommodation type camper trailers, when those structures have been designed for human habitation. The standard is not specific as to the physical structure of the unit and may include canvas or part canvas construction.*

**MOTOR CARAVAN:** Defined under the Standard as “a motor vehicle which can be used as a place of abode and has facilities for cooking, eating, sleeping and washing and is not a passenger vehicle.”

**APCNZ Note:** *Under the Standard’s definition of a Motor Caravan the vehicle must have facilities for cooking. This could include a portable gas or electric hotplate which may be used inside or outside of the vehicle. ‘Not a passenger vehicle has no clear definition. The NZTA website states:*

*“Passenger vehicles can include cars, vans, people-movers and some off-road vehicles.”*

*In interpreting this part of the act it should be understood that **a vehicle that has not being adequately converted from the main purpose of carrying passengers to that of a motorcaravan it will not qualify. The vehicle must have been converted to be fit for the purpose of accommodation.***

## CERTIFICATE OF SELF CONTAINMENT

Every motor caravan or caravan equipped as per the Standard may be presented for the issue of a self-containment certificate and a warrant of compliance, with appliances installed that are "fit for purpose" and qualifying as motor-home or caravan.

### SELF CONTAINMENT WARRANT / WINDOW CARD

Such a warrant card, if granted, shall be affixed to the inside of the left side front window, or the left side of the windscreen so as to be visible from the footpath. It shall clearly state:

- The registration number of the vehicle
- The date of issue
- The issuing authority
- The expiry date
- The maximum number of people which are to be accommodated.



No Warrants shall be valid for more than forty eight (48) months, and must be renewed immediately if any alterations to the self containment set-up are made.

Transitional arrangement under Amendment No.2 31/05/2017 any subsequent warrants issued under the old (Amendment No.1) re toilets will only be valid until 1/02/2018. Certificates / warrant cards issued in accordance with the new standard will be valid for 48 months as per normal.

## SELF CONTAINMENT STICKER



This blue square sticker was introduced at the beginning of 2012. It provides Council enforcement officers with a visual tool to immediately verify whether or not a vehicle may be certified self contained. The placement of the sticker is vital for the scheme to work and must be fitted to the lower right hand rear of the vehicle. The blue sticker is not legally required under the standard but is considered an essential part of the scheme.

## ISSUING AUTHORITY

Self-containment certificates and warrants are issued by a Self Containment Issuing Authority, i.e. a registered plumber, or any organisation (such as All Points Camping Club of NZ and the New Zealand Motor Caravan Association Inc.)

## SELF CONTAINMENT OFFICERS

Qualified Self-Containment Officers who are a member of an Issuing Authority are eligible to inspect vehicles for self-containment warrants. For a new check your vehicle will need to be checked by any two members suitably qualified as Self-Containment Officers; and for a retest, any one Self-Containment Officer. The exception to this under amendment No.2 allows for an initial inspection by one (1) qualified testing officer who has inspected more than 20 vehicles and inspects more than 10 in a year. (A schedule of inspections must be retained).

To qualify as a new Self-Containment Officer under All Points Camping Club of NZ, individuals must have demonstrated a thorough knowledge and understanding of the four (4) APCNZ self containment certification modules and NZS 5465:2001. Testing officers must be able to demonstrate the ability to correctly interpret, explain and apply the standard, as part of a competency test, correctly maintain documentation and be able to succinctly justify decisions made.

A new testing officer may be notarised as passing the competency test as Self Containment Officer by either an experienced self containment officer (2+ years), a registered plumber, gasfitter or drainlayer, or a person appointed to do so by All Points Camping NZ management.

***A Registered plumber can check or recheck a vehicle for self containment by themselves, and be the issuing authority for the certificate/warrant in their own right. If the All Points Camping Club of NZ is to be the issuing authority for the certificate and the plumber is not a member of the club, the certificate/warrant will be issued by APCNZ as an agent for the plumber under NZ law. Plumbers are required under their registration to comply with the requirements of the standard.***

See a listing of Self-Containment Officers on our website [www.getcertifiednz.org](http://www.getcertifiednz.org)

## EVENTS

All Points Camping NZ will on occasion hold events around NZ. These are a good opportunity to meet other campers and should be promoted as an opportunity to get your vehicle certified or checked for compliance. The cumulative knowledge and experiences at these gatherings is immense. APCNZ provides rally guidelines and liability cover for member organised events.

## DISPUTES

Any disputes arising should be resolved by the parties involved the first instance and referred to All Points Camping NZ if there is no resolution. Notes should be kept of any dispute. Refer APCNZ CSC modules. A registered plumber, gasfitter or drainlayer has professional responsibility to resolve disputes.

## BASIC CSC REQUIREMENTS FOR MOTORCARAVANS

The following covers the 'basic requirements' for self containment in motor caravans & caravans only. (For full details on Self Containment, purchase the Standard NZS 5465:2001 from Standards NZ, or contact a Self Containment Testing Officer who has a copy of the Standard).

### WATER SUPPLY

The motor caravan shall be fitted with a fresh water tank. The tank shall hold at least 4 litres per day for each person that the motor caravan will be certified to accommodate for three days. (i.e. a minimum of 12 litres of water per person).

The tank shall be:for

1. Made of a material that is inert and opaque, and be capable of storing fresh water indefinitely, while maintaining its potability.
2. Adequately supported and fastened to the motor caravan so that it does not cause any hazard whilst the vehicle is travelling on the road.
3. Fitted with an inlet of not less than 25 mm diameter (or 12mm diameter if pressure fed), and have a cap or seal to prevent foreign matter entering the tank.
4. If of rigid construction have an air vent of not less than 10 mm, fitted with a device to prevent the entry of any contaminant into the tank.

### WATER RETICULATION

Water reticulation shall be approved food grade dense opaque non-toxic pipe. Clear plastic pipe shall not be used. (Tip: If piping hot water or operating a pressurised system ensure the pipe / tubing is rated accordingly and securely clamped. Hoses and clamps in European caravans should be regularly checked for leakage.)

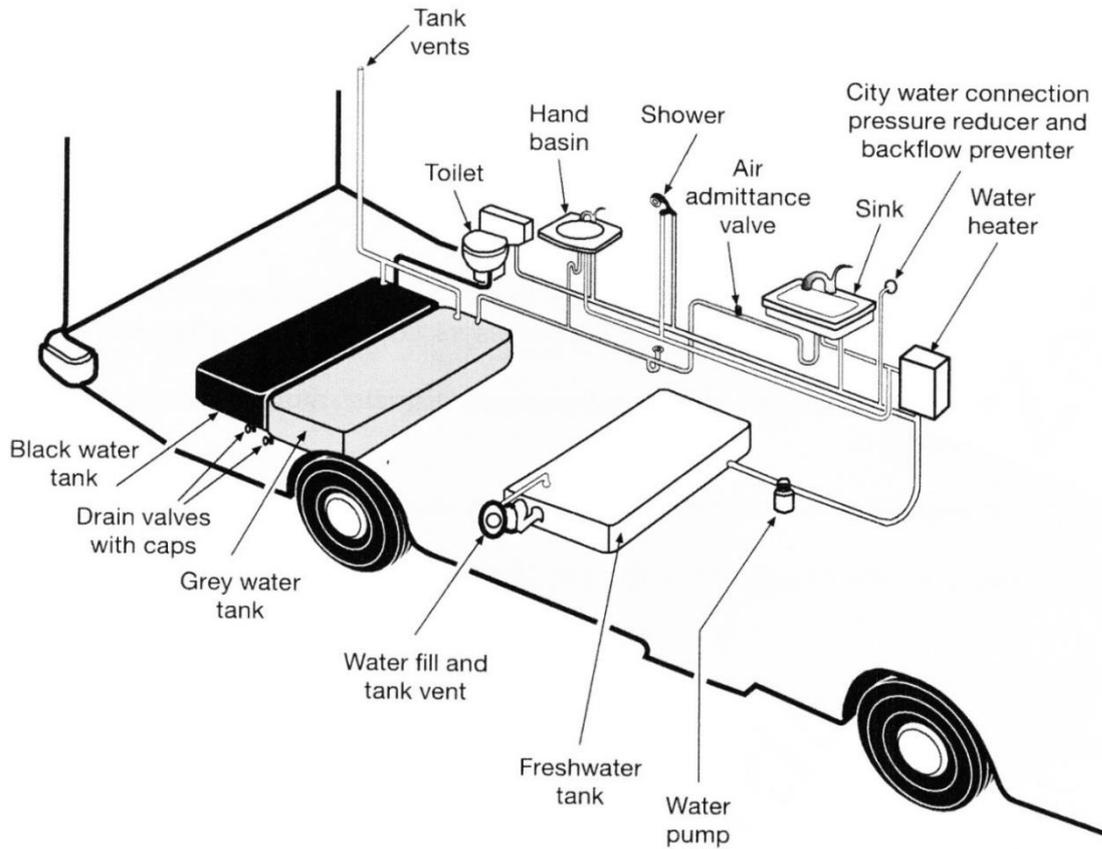
A typical plumbing layout / schematic for a motor caravan is shown on the following page.

### Explanation

1. Clear plastic pipe admits light, which encourages the growth of algae in the pipe. This discolours the water, and has potentially harmful effects on your digestive system.
2. Where a water-heating device such as a gas califont is installed, it is suggested the hot water reticulation should be in 10 mm or std 12mm pipe suitable for hot water. This pipe is easily routed around corners and can be installed in one length from the gas califont to the outlet tap. (The gas califont exhaust shall be expelled to the outside of the vehicle)

The flow of water through the 10 mm pipe is more than adequate, as the gas califont restricts the water flow so that the gas flame will heat the water in the pipe as it passes through the flame.

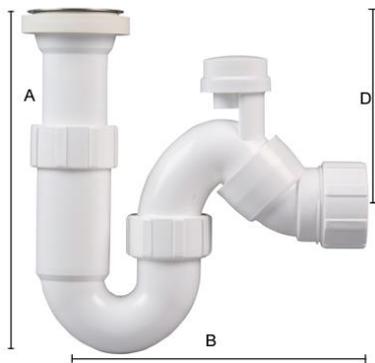
*With storage water heaters an inlet pressure regulator and pressure relief valve will be necessary*



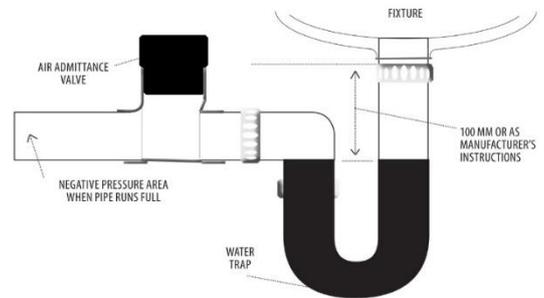
**SINK**

The motor caravan or caravan shall be equipped with a sink. The sink must be attached to the vehicle. Additional sinks, hand basins and shower are optional. Every sink, hand basin or shower fitted shall be supplied with water from the fresh water tank, in such a way to ensure that there is no back siphoning.

All waste pipes from sinks, hand basins and shower trays shall have a water seal of not less than 40 mm, fitted close to the outlet of the fitting and no more than 1 m from the fitting.



Suggestion: On older vehicles it has often been found that 40mm water traps are insufficient due to the rough ride. It has to be recommended that in these cases you fabricate your own water traps using 90degree bends as shown. A water trap depth of 75-90mm appears to work well.



The diameter of the waste pipe from a sink, hand basin, shower tray or other fitting shall not be less than 18 mm.

Where the length of pipe exceeds 3 metres it shall not be less than 25 mm diameter and be vented with an air admittance valve of not less than 18mm as shown.

## Toilets and Waste Evacuation

### PORTABLE TOILET

For the avoidance of doubt, Amendment 2 of the Standard states “a portable toilet shall be readily usable within the vehicle, including sufficient head and elbow room when required, even with the bed made up.” (Required is defined as essential or necessary.) Once this condition has been met, a person may also use a portable toilet externally, e.g. within a toilet tent or awning, where it is appropriate and convenient to do so.

Portable toilets are required to be adequately restrained or secured when travelling and have a seal unless it is a Composting model.

### PERMANENT TOILET

Permanent toilets are to be installed in accordance with the manufacturer’s instructions or to comply with the sanitary requirements of the NZBC.

Where the toilet is permanently mounted, it shall be connected to the waste tank by a pipe, preferably of flexible material or with a flexible joint. Where an **efficiency flushing** toilet is used and evacuation is by gravity, the pipe or hose shall not be less than 75 mm diameter, and not deviate from the vertical by more than  $\pm 30^\circ$ .

For marine toilets it should be noted that some have a 32 mm waste outlet opening. As with other types of toilets these must be installed in line with manufacturer’s requirements.

### Explanation

Toilets shall have sufficient waste holding capacity to provide for the occupants of the motor caravan for a minimum of three days. The waste holding capacity shall be the net capacity after deducting the internal flushing water. The capacity per person per day is 1 litre, e.g. four people for the three day self containment period would require a net total of 12 litres.

The holding capacity of the toilet tank may be included in the calculation of liquid waste storage when calculating the total waste for the vehicle.

The toilet should be able to be used in situ and have adequate space and ventilation to avoid the need for other occupants to vacate the RV during use. Privacy should be considered but is not a requirement of the standard.

Manufacturers instructions should be followed when calculating the waste holding capacity for toilet waste.

The minimum capacity allowable under the standard is 1 litre per person per day for self containment. Most users will need more than this. It is recommended to carry a spare cassette if possible.

Minimum 3 day Capacity -     for 2 persons 6 litres + initial charge (1litre) = 7 litres (recommend 9l )  
  for 4 persons 12 litres + initial charge (1litre) = 11 litres (recommend 13l)  
  for 5 persons 15 litres + initial charge (1litre) = 16 litres (recommend 18l)  
  for 6 persons 18 litres + initial charge (1litre) = 19 litres (recommend 20l)

The above are recommended minimums. Every personal situation is different.

*A friendly warning. Young children like pressing the flush button. It is very likely, that with children on board, your toilet holding capacity will severely be compromised.*

**MARINE TOILETS** - These shall not draw their flushing water from the drinking water supply.

*Explanation: The barrel of a marine toilet pump is used for pumping both the waste to the waste tank, and drawing in the flushing water. It is therefore unavoidable that contamination will travel from the waste to the clean water supply. To use marine toilets in a motor caravan, install a separate tank for flushing water with an air gap between the fresh water supply and the flushing tank water.*

### **COMPOSTING TOILETS**

Under amendment No. 2 31/05/17, Defines Composting Toilets as an aerobic processing system to treat human waste by composting. Where any waste water is separated it shall be via a black water tank or a combined grey & black waste tank. Some composting toilets have a removable black water tank that is rated to hold urine for three (3) persons for one (1) day. This would not meet the CSC requirements for three days if the vehicle is certified for more than one (1) person. In such cases there will have to be a small black water tank, of some form or a combined grey black tank to store the extra liquid waste, for the vehicle to meet the standard.

### **WASTE TANK**

The motor caravan or caravan shall be fitted with a waste tank or tanks to receive the wastewater and sewage from all permanently installed fixtures. “The capacity of the waste tank shall not be less than, and preferably larger than, the minimum water supply.” **The waste tank can be less volume than the fresh water, as long as it is greater than the minimum size and has a clearly visible, functioning monitor.**

The tank shall have a vent which extends above the lowest appliance and then exits to the exterior of the vehicle. The minimum size for the waste tank is the same as the minimum fresh water capacity (i.e. 24 litres for two people).

**Note:** If the vehicle has a combined tank for sewage and grey water the capacity ‘Must’ be sufficient for both. In the case of a composting toilet requiring discharge of urine into a waste tank this must also be added to the waste capacity eg 1 litre per person per day.

**Rollaway/portable** tanks can be used as an alternative to fixed tanks. There are many differing opinions on the use and advantages or disadvantages of a roll a way waste tank. Modern rollaway tanks are required to be a sealed unit so the risk of any spillage is minimal. If staying in facilities with a dump station they are easy to wheel but have considerable weight when emptying. Assistance should be sought / may be required to lift a full tank.

Motor homes and caravans with removable grey water tanks are allowed as long as they are connected with a water tight seal and the pipe that feeds them has a shut-off valve and cap. The tank shall have a vent which extends above the lowest appliance Portable tanks should not be more than 20 litres or lifting becomes difficult. 1 litre = 1 kg.

All waste tanks shall be constructed of non-corrodible material. The bottom of the tank shall be shaped so that the contents can be evacuated through a quick acting gate valve. The valve shall not be able to operate from inside the vehicle and the valve shall be fitted with a cap when not in use. **All roll away tanks, fresh and grey water tanks (plus black) must be secured in the caravan or towing vehicle when in motion.**

### **Waste tank valve, pipe and discharge hose sizes:**

- |                               |  |
|-------------------------------|--|
| Grey wastewater               | Up to 200 litres 25 mm minimum diameter.<br>Over 200 litres 32 mm minimum diameter.      |
| Black wastewater              | Fed from a marine toilet or fed from a standalone macerator pump 32 mm minimum diameter. |
| Waste macerated on evacuation | 18 mm diameter or the size of the macerator pump openings.                               |
|                               | All other black water 75 mm minimum diameter.  |

## **Explanation**

The sizes stated above are the minimum. To get maximum evacuation of your tank and ensure that you dispose of all solids and paper, you should fit the largest valve and pipe work possible to the lowest point of your tank. This ensures that you evacuate all possible solids. In some cases where maximum flow is not achieved, you will get build up of solids in the tank that will reduce the tank volume. Eventually you will have to remove the tank or cut a hole in it large enough to flush it out.

All waste tanks shall be fitted with a vent of not less than 10 mm, preferably 25 mm, routed above the flood line of the lowest appliance and be vented to the outside of the vehicle. Preferably near the roofline and away from windows and doors. It is recommended that the vent pipe should be matched with the outlet at least 50%. To help quick evacuation of waste a vent pipe with a diameter greater than the 10mm minimum would ensure fast emptying. Where the evacuation of the tank is by a valve and greater than 50mm an air admittance valve shall be fitted in the system unless vent pipe is 50% of diameter of discharge hose & fittings. This is to prevent the water seals being destroyed and/or tanks imploding and to speed up the evacuation of the tank.

Fixed waste and sewage tanks must be adequately supported and fastened to the motor caravan, so as not to cause a hazard whilst the vehicle is in motion.

## **EVACUATION HOSE**

The motor caravan shall be fitted with an evacuation hose. The hose shall be fitted with a seal-able coupling for attaching it to the waste holding tank evacuation valve. The waste hose shall have a minimum length of 3 metres and the diameter shall be no less than the minimum waste tank valve and piping as required by the standard. The hose shall be carried in a separate sealed container if not carried in its own locker.

## **WASTE WATER TREATMENTS**

The chemicals or biological treatments used in a waste or sewage tank should:

1. Deodorise the waste
2. Disintegrate the waste
3. Be biodegradable
4. Eliminate coliform bacteria
5. Prevent foaming at pumping stations
6. Not interfere with the safe operation of a septic tank
7. Not affect component parts of the sanitation system

The manufacturers instructions should be followed when using the treatments.

**Explanation:** *When putting chemicals into your toilet system (portable toilets and waste tanks) it is important to take into account the amount of waste that you will deposit before emptying the tank. No use putting in the full dosage when you are going to empty the tank when it is half full. All you have done is put in twice as much chemical as is needed. Better to put in half the chemical dosage to start with and top it up if you are going to use the full capacity before disposing of the waste at a dump point.*

## **REFUSE CONTAINMENT**

The motor caravan shall be fitted with a sealable refuse container designed for the purpose and of suitable capacity for the number of occupants. Plastic bags hanging on a hook inside cupboard doors etc are not acceptable.

# CARAVAN SELF CONTAINMENT GUIDELINES

## TANK OPTIONS

1. Fit and secure fresh and grey tanks under the floor.
2. Portable rollaway tanks, one each for fresh and grey.
3. Install a connected bank of PVC pipes with sealed caps usually the length of the van under the floor.

## WATER SEAL OPTIONS

1. Standard "s" Bend.
2. HepVo valve available from plumbing stockists – 32 or 40 mm diameter pipe fitting. Can be installed in either vertical or horizontal position. Commonly used in shower waste lines where ground clearance low.
3. A loose loop of flexible tubes so that the 40mm depth is achieved (see photos). This can also be done with 3 right angle plastic fittings.

### NOTE:

A) The waste tank vent must rise to the height of the next appliance, sink or basin when using HepVo.

B) All water seals must be as close as possible to the sanitary fitting outlet. One metre is maximum allowable from fitting.



## FRESH WATER TUBING

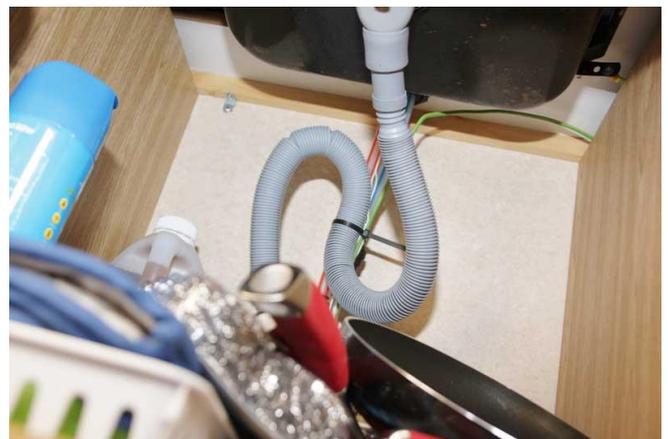
Tubes must be food grade. Not clear plastic, which allows sunlight to pass through and encourages algae growth. The standard tubing colours are blue for cold and red for hot.

## WASTE WATER PIPES

It is suggested that a suitable product is smooth bore Marley PVC Pipe, available in 25, 32 & 40 mm sizes. Most plumbing suppliers have a wide range of on/off valves, hose tail connectors, dust caps, sealable couplings, and flexible grey waste hose for those sizes. *NOTE: Flexible hose should not be used in horizontal plumbing waste lines as it may sag unless it is tied to the structure. Marley also make a range of right angles, 3 way junctions etc, for plumbing lines.*

## PERMANENT TANKS

These should be fitted where possible as a balanced unit usually secured underfloor in front of and behind the caravan wheels / axle, to keep the caravan balanced and eliminate "speed wobbles", when towing. Be aware of hand brake cables when locating tanks.



Fresh water tanks need a minimum 10mm air vent, which needs to vent approximately 150mm above the height of the tank top. Water inlet exterior side mount fittings often have a breather exit built into the fixture.



Grey tank venting is required to stop the tank imploding when emptying, and to ensure rapid flow to flush out all the contents. The grey tank outlet must be fitted with an on/off valve, a sealable coupling and a dust cap. The drain point should be as high as possible from ground level, and not at the extreme front or back of the van-likely to be damaged on undulating ground. Grey tank vent needs a minimum 18mm diameter and must exit to the outside of the caravan. For a "retro" fit, sometimes a vent tube can be installed through the floor and up inside a wardrobe and exit to the outside above the top of the window line through a vent cover. Alternatively bring the hose up into a cupboard and at 150 mm above the height of the lowest sanitary fitting form a gentle loop and take it back down through the floor.

Apart from achieving a rapid emptying flow, if the grey water tank is totally full and you empty the sink, it may backflow into the shower (if installed) or not drain from the sink! This is a visual warning that the grey tank is full!! Many owners install electronic tank monitors as well.

### **TANK EVACUATION**

A minimum 3 metre length hose is required (longer is better) fitted with the correct size hose tail connector to achieve leak free discharge from your on/ off valve into a dump station. The hose must be stored in a tight lidded container (preferably in an outside locker). Some owners adapt a piece of larger diameter plastic pipe for this function and fix it across the front or back of the caravan.

Caravan waste water plumbing should include "S" Bends, HepVo Valve where required, an exit point on/off valve, sealable coupling and dust cap.

### **ROLLAWAY / PORTABLE TANKS**

All rollaway tanks (full or empty) shall be securely fastened when in transit to a standard laid down by transport regulation, including additional cassettes and water containers.

To connect the rollaway to receive waste water, attach a short piece of flexible hose with a hose tail connector at each end and fit it to the on/off valves. When valves are opened, waste can flow into the rollaway. (shown below is a typical grey waste rollaway tank)

When the rollaway is full, turn off the caravan valve and drain the last residues into the rollaway before closing the rollaway valve and locking the dust caps onto the caravan and rollaway. Remember, a full rollaway weighs a kilo per litre so you should get assistance to lift it (20 - 40 Kgs).

The waste rollaway needs a visual full indicator and air release vent. Your rollaway may have the indicator as standard.

With rollaway or portable tanks the conditions are the same as with a fixed tank regarding amounts of water, waste traps fitted to appliances, rubbish containers, toilet etc. The reason for CSC is to protect the occupants and the environment by ensuring that no waste water flows from the van onto the ground.

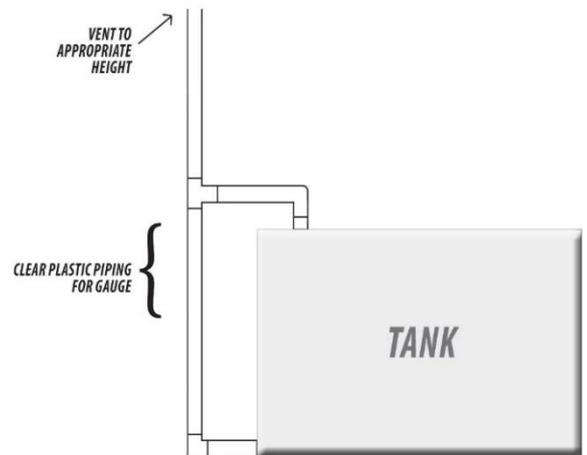
To achieve this, all connections between the van and tanks (regardless of whether the tank is fixed or portable) must be leak proof. A waste tank vent to allow air to escape from the tank while filling must be fitted to the height of the lowest appliance, usually the shower. If a 'Hepvo' (rubber veined type of trap) is fitted, then the vent must rise to the height of the next appliance, the sink or basin. All vents must terminate to the outside of the van. The vent can be a clear rigid pipe rising from the tank and clipped to the required height, above the floodline of the shower or sink.

When using a portable tank the van must have a valve at the discharge point of the vehicle, with a cap fitted, when disconnected from the portable tank. The tank should be fitted to the discharge valve with a flexible hose, with all connections leak proof. The length of the hose needs to be as short as practicable to ensure no spillage when disconnecting.

If two extra caps are purchased they can be modified, one to take the inlet pipe and the other the vent pipe, allowing the second set of caps to be put on for travel or wheeling to dump point for emptying.

In most cases a gauge is not required, as you can see the water level in the tank. Some tanks already have gauges. Tanks can have a float gauge that changes colour as the water level rises, others have a float that rises up out of the tank to indicate water level. A tank can be a light colour (opaque) that allows the level to be seen or have a clear strip window gauge.

When a tank has no gauge the vent can be made from clear plastic pipe to show when the tank is full.



The tank must be able to be removed for emptying without spillage. The connecting hose and vent need to be stored in a separate locker or container when not in use to prevent contamination. All portable tanks must be securely stored so they cannot move while the van is in motion.

If an underfloor waste tank is fitted to a caravan and it has a vented front locker a simple option for venting is to run 10 or 12mm irrigation type tubing from the top of the waste tank under floor and up into the front locker.

This install shows a 76 litre waste tank suspended on swung galvanised frame behind the axle on a European caravan. Owners should be aware that an install like this when full may add 100kg plus to the weight of the van. GVM limits apply

## SELF CONTAINING EUROPEAN CARAVANS

The purpose of Self Containing is that nothing can spill onto the ground and that smell doesn't enter the living area.

Requirements are that smell traps can be fitted on each waste outlet where the pipes exit under the van. Joints onto into the rollaway tanks must be a sealed connection with caps to prevent leakage.

**The UK waste plumbing system is called "Push Fit". This system has 27.5 mm pipe that pushes together without glue so is very easy to modify to meet the standards, when completed all joints shall be glued. The three waste outlets need to be connected to one outlet with a tap and caps. The rollaway tank needs the same inlet and a cap plus a vent that has a cap for transporting. A Clear plastic vent acts as a sight glass or monitor.**

A short hose connect it all together and a stick on hook hangs the vent up without drilling holes in the side of the van. Converting the outlet to side exit is worth doing so the tap does not drag on the ground if on the rear of the van.

This kit shown in the image contains all that is needed to prepare an English caravan waste system fitted with smell traps for Self Containment



There are variations in the caravans as to where the kitchen and hand basin/ shower are placed. Some of the tandem axle vans the pipes are coming out behind the axle and wheels. Some exit at the rear.

This is a general description but keep in mind that the rollaway tank needs to be vented away from the living area and the vent not under a window. If the outlets are at the rear there is a very strong possibility of wiping them off going over crossings or even the speed humps into parks etc. Waste pipe over 3m must also have an air admittance valve. A good practice is to move them to the driver side and just behind the wheels.

The following videos are recommended viewing.

<https://www.youtube.com/watch?v=jeMvyMXmO6s>

<https://www.youtube.com/watch?v=kE1dK8FmDkA>

<https://www.youtube.com/watch?v=dqWrl1gnezk>

## CAMPER VAN CONVERSIONS



For a two person setup, 2 x 25 litre narrow opaque plastic cans, can be used, stored alongside the sink or in a cupboard, removable for ease of filling and emptying.

### **The tanks need vents.**

The fresh tank needs an opaque supply to the sink and a vent. A small fresh water tank could be secured above the sink with a tap to the sink.

The grey water may drain from the sink through a looped hose water trap into the grey water tank. The hose into the tank is to be a water tight fit that is leak proof. A 6mm vent shall be fitted to the waste water tank rising above the height of the sink base or floodline of the shower if fitted and terminating to the exterior.

In most cases a gauge is not required, as you can see the water level in the tank. The tank can be a light colour (opaque) that allows the level to be seen or have a clear strip window gauge. *These opaque portable tanks do become brittle over time and should be checked for cracks.*



The grey water tank must be able to be removed for emptying without spillage. The connecting hose and vent must be stored in a separate locker, container or *sealable* plastic bag, when not in use to prevent contamination. All portable tanks must be securely stored so they cannot move while the van is in motion. There shall be a rubbish contain with a lid.

The campervan shall be equipped with a toilet that is adequately restrained or secured when travelling. The toilet shall be readily usable within the vehicle including sufficient head and elbow room at all times, even with the bed made up. Once this has been ascertained / certified as a practicable the toilet may then be used in a toilet tent or awning. The capacity of the toilet is 1 litre per person per day.



With creative thinking solutions can be found for most problems. The image to the left is not ideal but if there is sufficient head and elbow room meets the requirements.



## Slide on Campers and Utility Based Campers

Where **All** the requirements the standard have been met these units can be certified. Amendment 2 of the standard requires that the toilet must be able to be used inside the vehicle with the bed made up. Once these conditions have been met the toilet can be used outside.

When separate from the vehicle the unit would be considered a caravan under the definition of the standard.

When the unit is attached the unit it is considered to be part of the vehicle as with a canopy.

The CSC window card /warrant will be linked to the registration of the vehicle to which it is attached. If the base vehicle is changed we consider a recheck would be required to ensure documentation is correct.



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### Guideline Comment

This document is a guideline based on interpretation of NZS 5465:2001 and has been developed collaboratiely using accumulated knowledge. It is a resource for testing officers and installers. It is a collaborative document and will be added to and amended as required. We welcome your contributions of tips and tricks or links to other resources.

The guideline relates solely to ' Certified' Self Containment. A camper or other temporary abode might still be self contained but not meet the requirements of the standard and therefore not receive documentation. Certified Self Containment is not a legal requirement in itself but is used as a tool by local authorities to help manage campers and camping locations / facilities.

Our initial guidelines do not provide suggestions for trailer campers and we will be seeking comment from the industry and owners of such vehicles. We are concerned at an anomaly in the wording of Amendment No. 2 which states *“a portable toilet shall be readily usable within the vehicle, including sufficient head and elbow room when required, even with the bed made up”*. The placement of the phrase 'when required' in this sentence and interpretation of it's legal meaning has a effect on the application of this clause of the standard and when certifying a vehicle.

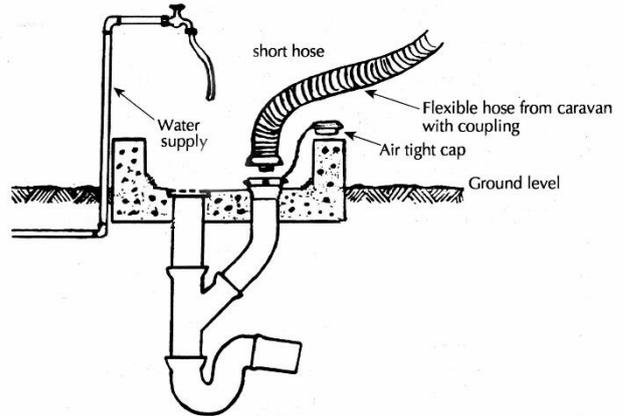
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## Appendix.

### DUMP POINT SCHEMATIC

This diagram shows a schematic of a typical dump point (do not use these drawings as design material). Obtain NZS 5465:2001 *NZ Standard for the Self-Containment of Caravans and Motor Caravans* for full details and specifications.



## 7 Principles of Leave No Trace

1. Plan ahead and prepare
2. Travel and camp on durable surfaces
3. Dispose of waste properly
4. Leave what you find
5. Minimize campfire impact
6. Respect wildlife
7. Be considerate of other visitors

