**Appendix 2**

# KĀPITI COAST RAINWATER AND GREYWATER CODE OF PRACTICE

## Table of Contents


| | |
|---|---|
| Interpretation | 2 |
| Objective and Functional Statements | 3 |
| Definitions | 3 |
| Part 1 Sustainable water supplies for new dwellings in reticulated areas | 5 |
| Part 2 Rainwater tanks | 6 |
| Part 3 Greywater Diversion Devices | 10 |
| Part 4 Greywater Land Application System | 12 |
| Appendix 1 Dual Manifold | 13 |
| Appendix 2 Documentation for greywater diversion devices | 14 |
| Appendix 3 Installation Manual | 15 |
| Appendix 4 Assessing site suitability for greywater land application | 16 |

# Interpretation

The Kāpiti Coast Rainwater and Greywater Code of Practice (the Code) has been designed to provide performance solutions to meet the statutory requirements of the Kāpiti Coast District Plan (formally known as Plan Change 75), land discharge requirements from the Regional Council and the New Zealand Building Code. The aim is to ensure best practice solutions are put in place while allowing for innovation in materials and methods.

*Objectives* and *Functional Statements* are informative only and are included to provide an aid to interpreting the *Performance Criteria*. *Objectives* are the community expectations for the Code. *Functional Statements* describe how to meet those community expectations.

*Performance Criteria* have been developed to meet the *Objectives* and *Functional Statements*. The *Acceptable Solutions* provide a simple and direct manner of meeting the *Performance Criteria*.

Unless otherwise provided by the Code, the requirements of New Zealand Building Code and any relevant Australian and New Zealand Standards are applicable. Where there is any inconsistency, or the Code has additional requirements, the Building Code prevails.

The Australian / New Zealand Standards referred to in the Code, are taken to apply to all rainwater harvestings systems and greywater use facilities assessed under the New Zealand Building Code regardless of the limitations expressed in the relevant standard.

## Objective and Functional Statements

The Code adopts the same structure; Objective, Functional requirements and Performance criteria as the New Zealand Building Code.

**Definitions**

Unless noted otherwise, all terms have the same meaning as defined in the Building Act 2004, or a relevant Australian/New Zealand Standard.

If a definition given in a relevant standard is inconsistent with the New Zealand Building Code, Regulation or the Code, the Building Code prevails as to the extent of the inconsistency.

Note: Italicised words within the body of the text, other than legislation titles, are defined below.

**acceptable solution** means a solution that must be accepted as complying with the building code

**amenity** means an attribute of a *building* which contributes to the health, physical independence, and well being of the *building's* users but which is not associated with disease or a specific illness.

**building** has the meaning given to it by sections 8 and 9 in New Zealand Building Act 2004

**complying valve** means a device incorporated as part of the manifold which a Water Service Provider can use to securely restrict the flow of water, either partially or fully, to be installed upstream of a water manifold.

**Council** means Kāpiti Coast District Council

**design life** means the period during which the item is designed to meet the performance criteria. It is to be a minimum of 15 years. Building Code clause B2 Durability specifies the durability of building work. Specifying a time may cause a conflict with the building code in some cases.

**first-flush device** means a container that collects and disposes of the initial rain that falls on a catchment surface, removing both debris and soluble pollutants.

**greywater land application area** means an area in which greywater is disposed of by subsurface or surface irrigation.

**greywater land application system** means a greywater application area associated with a greywater facility

**greywater diversion device—**

1. A greywater diversion device is a device that:
   (a) directs and diverts greywater to sewer or a greywater application area; and
   (b) has a filtering system that uses a coarse filter to remove solids from greywater.
   (c) automatically diverts greywater from the facility to sewer if the facility does not work properly or at all; and
   (d) allows the manual diversion of greywater from the facility to sewer.

**greywater facility** means a facility that consists of a greywater diversion device and a greywater land application area;

**G12/AS1** means acceptable solutions that comply with the performance criteria of section G12 of the Building Code.

**household unit** — has the meaning given to it by the Kāpiti Coast District Plan

**reticulated water supply** means pipes, fittings and tanks used or intended to be used for the storage and reticulation of water from a *water main* or other water source, to *sanitary fixtures*, *sanitary appliances* and fittings within a *building*.

**sanitary appliances** means an appliance which is intended to be used for sanitation but which is not a sanitary fixture. Included are machines for washing dishes and clothes.

**sanitary fixture** means any fixture which is intended to be used for sanitation.

**Sewer** means any pipeline or culvert, above or below ground level, used or intended to be used to convey sewage

**top up valve –** means the valve that provides public water to the rainwater tank

**water supplier** – means the Kāpiti Coast District Council or nominee, who is responsible for operating, the local reticulated water supplies.

**Watermark –** is a certification trademark used in relation to water supply, sewerage, plumbing and drainage goods.

**waterways** – means any receiving water body including – ponds, rivers, streams, raceways, coastal marine area

# Part 1 – Sustainable water supplies for new dwellings in reticulated areas

| PERFORMANCE CRITERIA | | | ACCEPTABLE SOLUTIONS |
|---|---|---|---|
| **New Households** | | | |
| P1 | New residential dwellings supplied directly with water from the reticulated town water supply system, by the Kāpiti Coast District Council, must achieve targets listed in P1(a).<br><br>To achieve the targets in P1(a), new homes must use other sources of water in conjunction with reticulated water supply system. | A1 | The Council has two acceptable solutions comply with P1.<br><br>The two acceptable solutions are:<br><br>(a) 10,000 litres of rainwater storage connecting to all toilets and outdoor taps; or |
| P1(a) | Residential dwellings connected to a reticulated town water supply system must reduce peak reticulated water used by household by 30%[1], while;<br>• Protect reticulated water supply and household from cross contamination; and<br><br>• Preventing unacceptable risk to the receiving environment | | (b) 4,000 litre of rainwater storage connecting to toilets and outdoor taps and a greywater diversion device; or<br><br>On application, alternative measures that can demonstrate compliance with the P1(a) performance criteria will be considered by Kāpiti Coast District Council. |

**[1] As per the Kāpiti Coast District Plan the target is to reduce water use from 1536 litres/house/day by 30%.**

## Part 2 Rainwater systems

| PERFORMANCE CRITERIA | | ACCEPTABLE SOLUTIONS | |
|---|---|---|---|
| Rainwater tank installation, capacity and water quality protection measures | | | |
| P2 | A rainwater tank must have sufficient storage capacity to provide an acceptable contribution to meet water savings targets listed in P1(a) allowing for:–<br><br>(a) local rainfall pattern;<br><br>(b) roof catchment area; and<br><br>(c) area available to site the rainwater tank.<br><br>Diagram 1 details the rainwater system.<br><br>For performance requirements and acceptable solutions for greywater diversion devices please refer to part 3 | A2 | A rainwater tank(s) –<br>(a) has a minimum storage capacity –<br>(i) of at least 10,000 litres for new residential dwellings; or<br>(ii) of at least 4,000 litres for new residential dwellings in conjunction with an approved greywater diversion device<br><br>(b) is installed to receive rainfall from a minimum roof catchment area of one half of the total roof area or 100m2, whichever is the lesser; and<br><br>(c) is connected to –<br>(i) toilet cisterns; and<br>(ii) taps for outdoor use; |
| P3 | A rainwater tank must have suitable measures to prevent contaminants from entering the rainwater tank appropriate to the nature and level of contaminants within the locality. | A3 | A rainwater tank has –<br>(a) a screened downpipe rain head, having screen mesh 4mm – 6mm and designed to prevent leaves, from entering each downpipe; and<br><br>(b) if washing machines or hotwater services are to be supplied by rainwater, there must be a first flush diverter installed to remove a minimum of 20 litres of the first flush of roof catchment before entering the rainwater tank. |

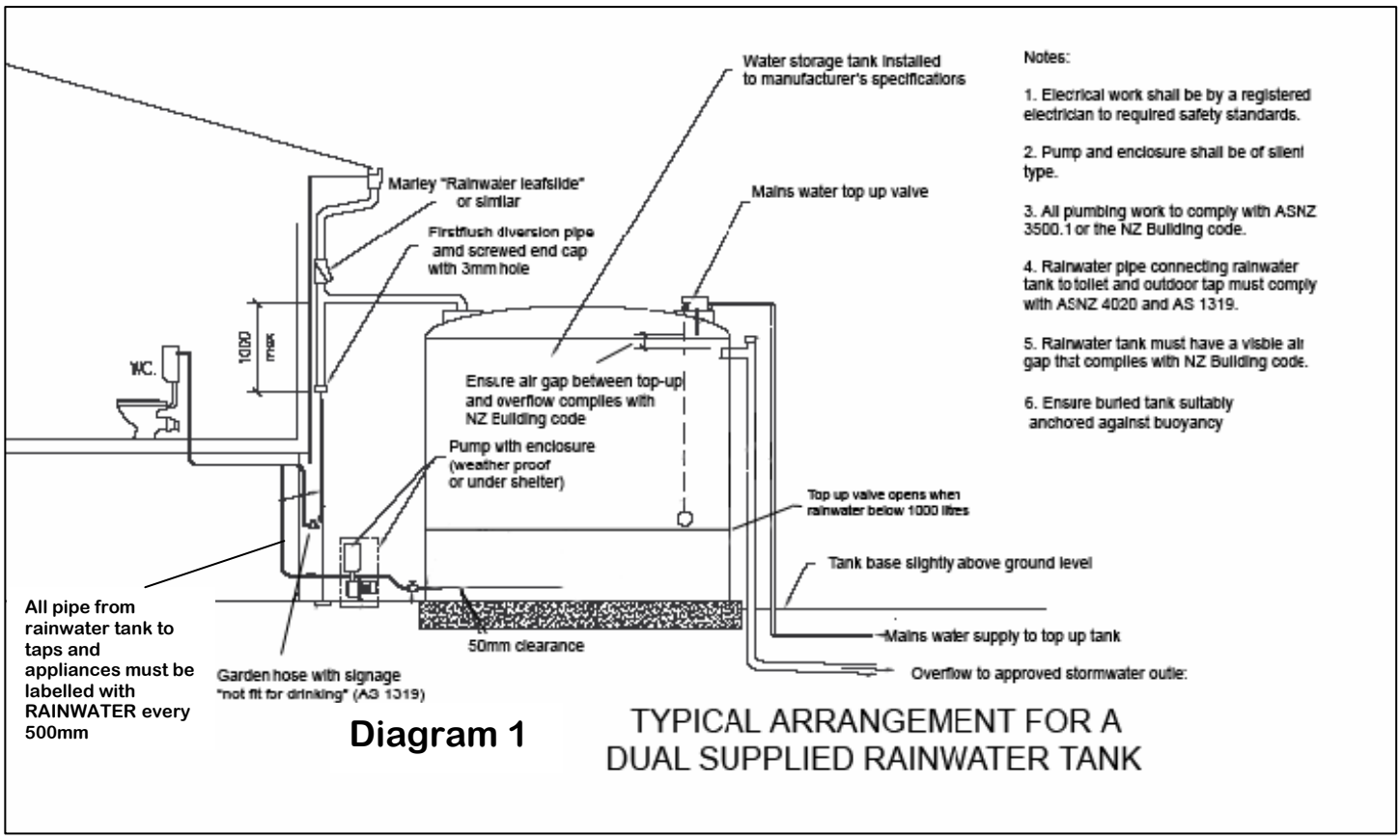



**Diagram 1** TYPICAL ARRANGEMENT FOR A DUAL SUPPLIED RAINWATER TANK

Greywater Diversion device to harvest water from the bathroom and washing machine (1).

As kitchen water is poor quality, it is not used and plumbed to sewer (2).

Toilet plumbed to sewer (3).

A compliant greywater diversion device needs to be able to divert the greywater to the sewer (4) if:

- the greywater is not needed in the garden
- the greywater is of poor quality

The greywater diversion device contains a mesh screen to filter out any hair, lint or solids that may block up the pipes or reduce the performance of the system over time (5).

A reliable diversion device should have an easy maintenance schedule to keep the filter clean.

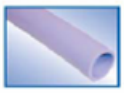
In case of system failure or power cuts, greywater needs to be able to overflow to the sewer (6).

## Diagram 2 TYPICAL ARRANGEMENT FOR A GREYWATER FACILITY AND APPLICATION AREA

The system needs to be able to distribute greywater effectively from the bathroom and laundry for irrigation of the desired outdoor areas (7).

For flat sites, a pumped system is recommended.

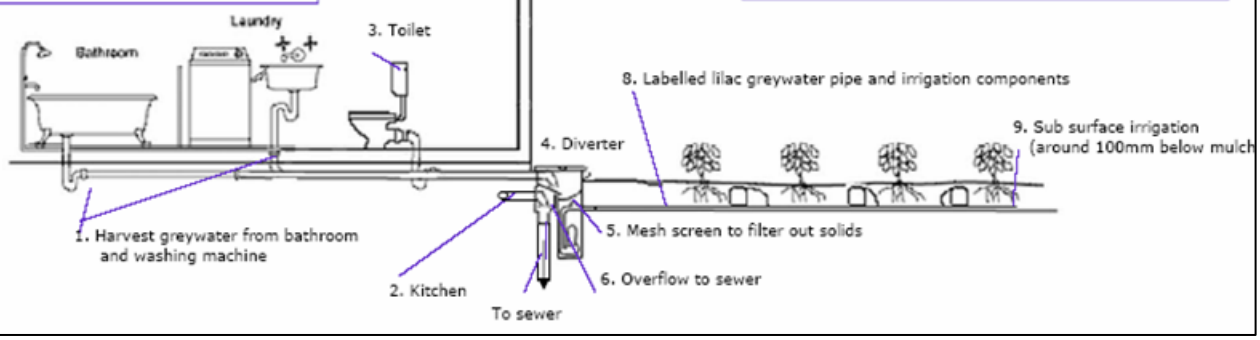
All pipe work and irrigation components carrying greywater needs to be lilac in colour and have stamped on them "Non-potable or recycled water not fit for drinking" (8).



This will help prevent any accidental misuse of the water.

Applying greywater below the surface (9) not only prevents children or pets playing in greywater but the soil also treats the greywater as it is applied.

A soakage test may be required to ensure greywater does not pond on the surface or run off into neighbouring properties.



| | | | |
|---|---|---|---|
| P4 | The rainwater tank must have a continuous supply of water for the sanitary fixtures and sanitary appliances supplied with water from a rainwater tank. [1, 2, 3] | A4 | A rainwater tank has a trickle top up system, providing supplementary water from the reticulated town water supply with -<br>• a flow rate of 25 litres per hour; and<br>• an approved top-up valve installed in tank in an accessible location; and<br>• a maximum storage volume of reticulated town water supply top up not exceeding 1,000 litres |
| P5 | Water from a rainwater tank must not contaminate the drinking water within a reticulated town water supply system. | A5 | Backflow prevention must be installed to protect the drinking water within the reticulated town water supply system in accordance with G12/AS1. |
| P6 | Any outdoor taps connected to rainwater must have signage stating it is not fit for drinking. | A6 | The outdoor signage must comply with the G12/AS1 or AS/NZS 3500.1:2003 Water supplies |
| P7 | All piping from a rainwater tank must be clearly labelled as rainwater pipe to prevent cross connecting drinking water appliances with untreated rainwater. | A7 | The pipe must comply with AS/NZS 3500.1.2003 where all pipe supplying rainwater to toilet and outdoor taps needs to be clearly labelled with NONPOTABLE every 500mm in contrasting colour. |
| System materials | | | |
| P8 | Materials used in a rainwater tank must be suitable for its intended use. | A8 | (a) Polyethylene tanks complying with AS/NZS4766:2006 polyethylene storage tanks for water and chemicals.<br>(b) Galvanised steel sheet complying with AS1397:2001 steel sheet and strip – hot-dipped zinc-coated or aluminium/zinc-coated, and have a minimum coating of 550 g/m2.<br>(c) Concrete tanks complying with AS3735:2001 concrete structures containing liquids.<br>(d) Collection well/underground water cell (non potable), or bladder tank complying with Vertical Axis Type Section 10 of AS/NZS 1546.1:1998 on-site domestic wastewater treatment units – Septic Tanks. |

[1] Appendix 1 details the new manifold Council will use for providing water to new dwellings with rainwater reuse.

[2] Any tobies or manifolds needing upgrading to comply with the district plan will be at the homeowner's expense.

[3] The Council's responsibility for maintaining the reticulated water supply stops at the manifold. The home owner is responsible for maintaining the water supply on their property.

| | | | |
|---|---|---|---|
| Rainwater tank stands | | | |
| P9 | Where a rainwater tank is supported on a stand or other structure, the supporting structure must be capable of withstanding any loads likely to be imposed on it. | A9 | (a) A rainwater tank stand or other supporting structure complies with the New Zealand Building Code, Clause B2, Structure. |
| Rainwater tank openings | | | |
| P10 | Rainwater tank openings are constructed to prevent ingress of surface stormwater and groundwater. | A10 | (a) All rainwater tanks are sealed to prevent surface stormwater and groundwater entering the rainwater tank.<br>(b) Non water-tight access lids terminate a minimum 150 mm above finished ground level with the ground sloped away from the tank and access lid.<br>(c) Water tight access lids are permitted to finish flush with the finished surface level. |
| Rainwater tank overflow – point of discharge | | | |
| P11 | Rainwater tank placement and tank overflow is to be designed to ensure stormwater does not pond under building floors or flood around foundations of buildings. | A11 | (a) The rainwater tank overflow is connected to a Council approved stormwater system in accordance with the Council's Subdivision and Development Principles and (b) A physical air break or non-return valve on the outlet from the rainwater tank overflow is provided before connecting to the stormwater drainage system.<br>(c) All plumbing and stormwater connections comply with New Zealand Building Code requirements. |

## Part 3 – Greywater Diversion Devices

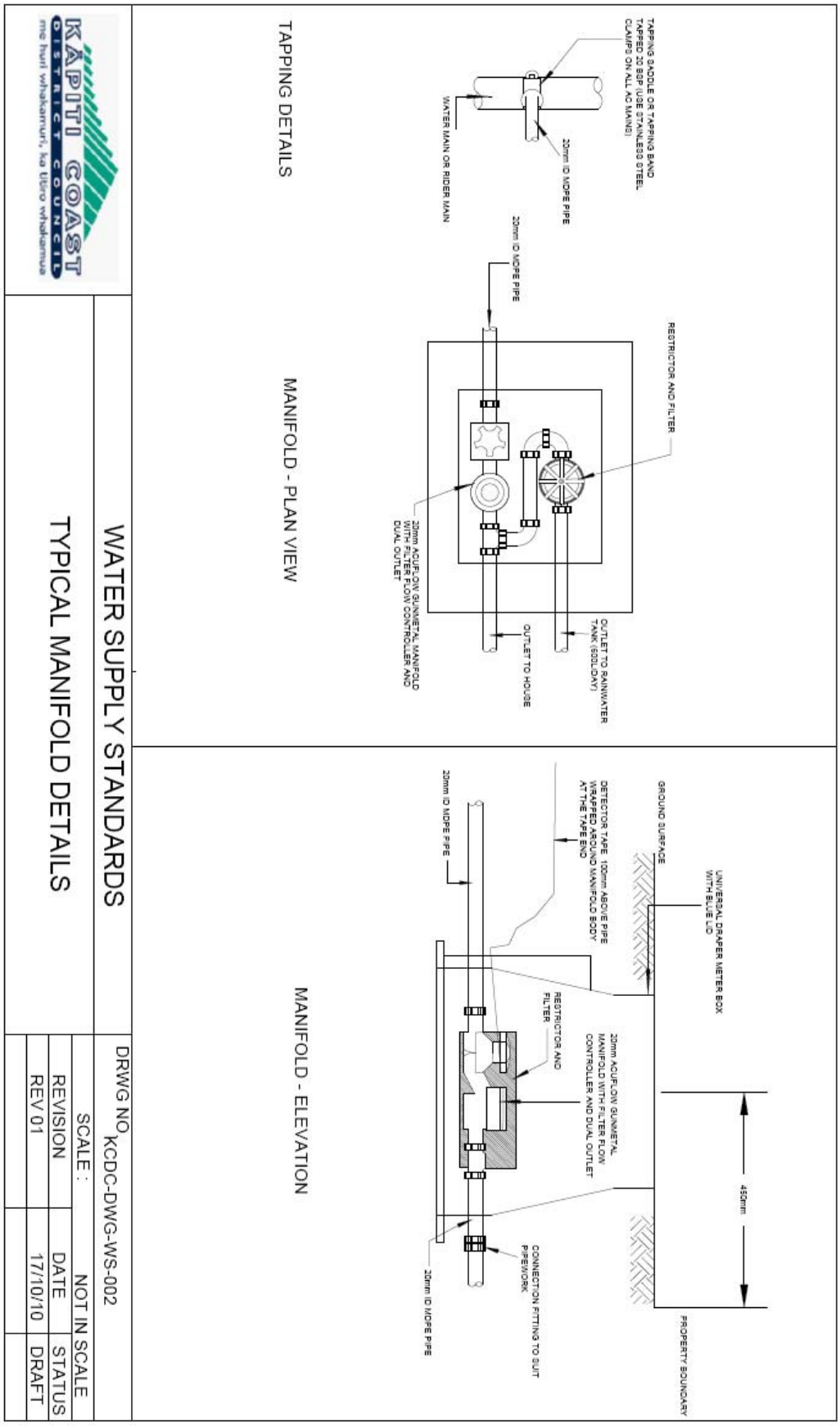
| PERFORMANCE CRITERIA | | ACCEPTABLE SOLUTIONS | |
|---|---|---|---|
| P12 | A greywater facility must be designed, constructed, installed and maintained in such a manner as to—<br>(a) protect public health by ensuring that risks associated with the use and/or dispersal of greywater to the greywater land application area are minimised; and<br>(b) protect the environment by ensuring—<br>i) surface and ground water are not polluted; and<br>ii) soil productivity is maintained or enhanced; and<br>(c) minimise the impacts on the amenity by ensuring it has no adverse impact on—<br>i) the built environment; and<br>ii) people on and nearby the premises:<br>for the design life of the facility. | A1 | (a) Where greywater is disposed of to a greywater land application area, it complies with Part 4 of the Code; and<br>(b) The greywater facility otherwise complies with G13 of the New Zealand Building Code); and<br>(c) The greywater facility must be operated and maintained in accordance with the designer's or manufacturer's instructions (As outlined in Appendix 2). |
| P13 | A greywater facility must be designed, constructed and installed—<br>(a) with adequate treatment and storage capacity for the volume of waste and frequency of disposal;<br>(b) with adequate size, strength and rigidity for the nature, flow rates, volume of wastes and/or waste products which must be processed;<br>(c) to avoid the possibility of contamination of any drinking water supplies;<br>(d) to avoid the possibility of contamination of soils, ground water, waterways and the coastal marine area;<br>(e) from materials which are impervious both to the waste for which disposal is required and to water;<br>(f) to avoid the possibility of foul air and gases accumulating within or entering into buildings;<br>(g) to avoid the possibility of unauthorised access by people;<br>(h) to permit cleaning, maintenance, measurement and performance sampling;<br>(i) to avoid the possibility of surface water and stormwater entering the system;<br>(j) to avoid the possibility of uncontrolled discharge;<br>(k) to permit the manufacturer, model, serial number and design capacity to be reasonably easily identifiable after installation;<br>(l) to minimise nuisance (eg noise) to the occupants of neighbouring properties; and<br>(m) so that the installation throughout its | A2 | All greywater diversion devices must carry a Watermark or BRANZ appraised.<br>Greywater can be diverted by connecting the washing machine and bathroom waste pipe to a diversion device. Diagram two provides an example of a greywater facility and a greywater land application system.<br><br>The device must:<br>• have a filtering system that uses a coarse filter to remove solids from greywater.<br>• not be connected to the laundry tub<br>• be able to direct and divert greywater to sewer or a greywater land application area; and<br>• automatically divert greywater from the facility to sewer if the facility does not work properly or at all;<br>• allow the manual diversion of greywater from the facility to sewer.<br>• be fitted with a switch to divert greywater from the sewer to a subsurface or surface irrigation system.<br>• be able to automatically divert to the sewer if there is a blockage.<br>A pump diversion device incorporates a surge tank to cope with influxes of greywater for distribution by a pump. The surge tank must not operate as a storage tank. Greywater must be screened as it enters the tank, the coarse screens cleaned regularly and the tank flushed periodically.<br>Surge tanks must be:<br>• vented |

| | | | |
|---|---|---|---|
| | design life will continue to satisfy the requirements of items (a) to (l). | | • fitted with an overflow line connected to the sewer<br>• fitted with a scour line that is connected to the sewer<br>• have all access openings sealed and vermin proof<br>• fitted with a hopper floor sloped to the scour line<br>• designed based on household fixture ratings of AS/NZS 3500.2, section 6.1, which specifies the maximum discharge from any fixture to be 500 litres.<br><br>Greywater diversion devices must be designed and installed according to the following criteria:<br>• only for residential dwellings that generate up to 2,000 litres per day<br>• minimum maintenance requirements must be specified<br>• must meet relevant health and plumbing requirements<br>• overflow connection to the sewer must be maintained. |

# Part 4 – Greywater Land Application Systems

| PERFORMANCE CRITERIA | | ACCEPTABLE SOLUTIONS | |
|---|---|---|---|
| P14 | A greywater land application system must be designed constructed, installed and maintained in such a manner as to—<br>(a) complete the treatment, uptake and absorption of the greywater within the boundaries of the approved application area;<br>(b) avoid the possibility of the creation of unpleasant odours or the accumulation of offensive matter;<br>(c) avoid the possibility of the ingress of effluent, foul air or gases entering buildings;<br>(d) avoid the possibility of stormwater run-off entering the system;<br>(e) avoid the possibility of roots penetrating or ground water entering the system;<br>(f) protect against greywater contaminating household;<br>(g) provide adequate access for maintenance;<br>(h) incorporate adequate provisions for effective cleaning;<br>(i) avoid the possibility of unintended or uncontrolled discharge;<br>(j) avoid the possibility of blockage and leakage;<br>(k) avoid the possibility of damage from superimposed loads or ground movement;<br>(l) provide ventilation to avoid the possibility of foul air and gases from accumulating in the system;<br>(m) minimise noise nuisance to the occupants of neighbouring properties; and<br>(n) prevent greywater discharging into neighbouring properties; and<br>(p) ensure that the installation throughout its design life will continue to satisfy the requirements of items (a) to (n). | A1 | 1. The land application system complies with each of clauses (a), (b), (c) and (d) in determining the size and position of the land application system while taking into account any additional information (and any photographic material) produced as a result of an on-site inspection carried out in accordance with Clause 4.1.3.4(b) of AS/NZS 1547—<br><br>(a) the setback distances specified for a greywater diversion device in T1 Appendix 4.<br><br>(b) design loading rate is to be appropriate to the characteristics of the terrain and soil in and near the land application area (Table 2-6 Appendix 4), and<br><br>c) the environmental constraints and the anticipated daily volume of greywater in sewered areas. (Table 2-6 Appendix 4)<br><br>d) greywater must be discharged at a minimum of 100mm below the ground surface<br><br>2. Any pump or motor complies with the District Plan permitted noise levels.<br><br>3. The greywater land application system must be installed by a qualified plumber or drainlayer. |

# Appendix 1 – Dual Supply Manifold



# Appendix 2 Documentation for greywater diversion devices

## Owner's Manual and label

Each greywater diversion device installed must be accompanied by an owner's manual prepared by the manufacturer. Each device must have securely affixed to it a label designed to last for the design life showing items (a), (b) and (c) below.

The manual must be written so that it can be easily understood by the intended reader and must include at a minimum –

(a) The diversion device's model designation.

(b) The name and telephone number of an appropriate service representative to be contacted in the event that a problem with the device occurs.

(c) The website from which the documentation can be downloaded during the design life.

(d) A statement confirming that the diversion device meets the requirements of this Code.

(e) A clear statement of examples of the types of waste that can be effectively treated by the device.

(f) A list of household substances that, if discharged to the diversion device, may adversely affect the garden or the environment.

(g) Comprehensive operating instructions that clearly delineate proper function of the diversion device, operating and maintenance responsibilities of the owner and authorised service personnel, and service-related obligations of the manufacturer or facility builder.

(h) Requirements for any required periodic removal of sludge from the diversion device.

(i) A course of action to be taken if the device is to be used intermittently or if extended periods of non-use are anticipated.

(j) Detailed methods and criteria to be used to identify device malfunction or problems.

# Appendix 3 Installation Manual

Manufacturers must provide comprehensive and detailed installation instructions to authorised representatives. The manual must be written so that it can be easily understood by the intended reader and must include as a minimum –

(a) A numbered list of device components and an accompanying illustration, photograph, or print in which the components are respectively identified.

(b) Design, construction, and material specifications for the device's components.

(c) Wiring schematics for the device's electrical components.

(d) Off-loading and unpacking instructions including safety considerations, identification of fragile components and measures to be taken to avoid damage to the device.

(e) A process overview of the function of each component and the expected function of the entire device when all components are properly assembled and connected.

(f) A clear definition of device installation requirements including plumbing and electrical power requirements, ventilation, air intake protection, bedding, hydrostatic displacement protection, water tightness, slope and miscellaneous fittings and appurtenances.

(g) Repair or replacement instructions in the event that a device possesses flaws that would inhibit proper functioning and a list of sources where replacement components can be obtained.

(h) A detailed start-up procedure.

# Appendix 4 Assessing site suitability for greywater land application

**Table T1** - Setback distances from a greywater diversion device

| Feature | Setback Distance (metres) |
|---|---|
| Property boundaries, pedestrian paths, and driveways. | 0.5 |
| Footings of buildings. | 1.5 |
| Retaining wall footing. | 1.0 |
| In ground swimming pool surrounds. | 1.0 |
| In ground potable water tank. | 6.0 |
| Bores intended for human consumption. | 50 |
| Waterways and Coastal Marine Area | 20 |

**Table T2** - Calculating greywater produced each week

| 40 litres | + | 60 litres | = | 100 litres | x | | x | 7 days | = | litres |
|---|---|---|---|---|---|---|---|---|---|---|
| Laundry usage | | Bathroom usage | | Total daily usage | | Occupancy* (depends on number of bedrooms) | | Days per week | | The amount of greywater produced each week[1] |

[1] maximum daily limit is 2000 litres

**Table T3** - Determining occupancy

| Bedroom numbers in home | Occupancy for design purposes |
|---|---|
| **1** | **2** |
| **2** | **4** |
| **3** | **5** |
| **4** | **6** |
| **5** | **8** |
| **6** | **9** |

**Table T4** - Calculating area needed for greywater irrigation

| Litres produced each week | ÷ Soil irrigation rate(T5) | = area needed for irrigation |
|---|---|---|
| litres/week | mm/week | $m^2$ |

**Table T5** - Soil irrigation rate for soil classes (ASNZ 1547 2000)

| Soil Category | Soil Texture | Soil irrigation rate for greywater | Indicative drainage class |
|---|---|---|---|
| 1 | Gravel and sands – structure-less | 35 mm/week | Rapid draining |
| 2 | Coarse to medium sand | 35 mm/week | Free draining |
| 3 | Medium-fine and loamy sand, sandy loam | 35 mm/week | Good drainage |
| 4 | Loam and silt loam | 28 mm/week | Moderately well drained |
| 5 | Sandy clay loam, clay loams, silt clay loam, peaty loam | 20 mm/week | Moderate to slow drainage |
| 6 | Sandy clay, non-swelling clay and silty clay, peat | 15 mm/week | Slowly draining |
| 7 | Swelling clay, grey clay, hardpan | 15 mm/week | Poorly or non-drained |

The Council has developed a blanket assessment of the Kāpiti Coast to identify areas suitable for greywater irrigation. The blanket assessment used the criteria in Tables T6 and T7. While the blanket assessment provides guidance on areas suitable for greywater irrigation, site specific information may still be required from Council.

Land shaded green will only need to submit the **Water Demand Management Declaration of Compliance form** (Tables T1 – T5) with the building consent application.

Areas shaded yellow will need to provide further information on how the proposed greywater facility will comply with the Kāpiti Coast Rainwater and Greywater Code of Practice in conjunction with **Water Demand Management Declaration of Compliance form** and areas shaded red are unlikely to be suitable for greywater irrigation.

**Table T6** – Site assessment for soil suitability for greywater irrigation

| Soil Feature | Minor limitation | Moderate limitation | Major limitation[1] | Restrictive feature |
|---|---|---|---|---|
| **Depth to bedrock or hardpan (m)** | >1.0 | 0.5 – 1.0 | <0.5 | Indicates potential for excessive runoff and/or water logging |
| **Depth to high episodic/ or seasonal water table** | >1.0 | 0.5 – 1.0 | <0.5 | Groundwater pollution hazard, ponding hazard |
| **Soil permeability Category[2]** | 2, 3 and 4 | 5 and 6 | 1 and 7 | Excessive runoff, water |
| **Bulk density (g/cm3)**<br>**Sandy loam**<br>**Loam & clay loam**<br>**Clay** | <br><1.8<br><1.6<br><1.4 | | <br>>1.8<br>>1.6<br>>1.4 | Indicates permeability |
| **Electrical conductivity (dS/m)[3]** | < 4 | 4– 8 | >8 | Excessive salinity undesirable |

1. Sites with these properties are generally not suitable.
2. See Table T4
3. Because of the elevated levels of sodium in domestic greywater, gypsum should be put on the application areas each year. Greywater land application systems should also be dosed on a regular basis.

**Table T7** - Site assessment criteria for greywater irrigation

| Site feature | Minor limitation | Moderate limitation | Major limitation | Problem |
|---|---|---|---|---|
| **Flood potential** | Inundated in 1:100 year event | Inundated in 1:50 year event | | High runoff and contamination risk |
| **Exposure** | High sun and wind exposure | | Low sun and wind exposure | Poor evapotranspiration |
| **Slope percentage** | 0–10 | 10–20 | >20 | Run-off, erosion |
| **Landform** | Hill crest, convex side slope and plains | Concave side slopes & foot slopes | Drainage plains and incised channels | Groundwater pollution hazard, ponding hazard |
| **Run-on and upslope seepage** | None–low | Moderate | High–diversion not practicable | High runoff and contamination risk |
| **Erosion potential** | No signs of erosion potential present | | Signs of erosion, e.g. rills, mass movement and slope failure, present | Soil degradation and transport, system failure |
| **Site drainage** | No visible signs of surface dampness | | Visible signs of surface dampness, such as moisture–tolerant vegetation (sedges and ferns), and seepages, soaks and springs | Groundwater pollution hazard, ponding hazard |
| **Fill** | No fill | Fill present | | Subsidence, variable permeability |
| **Buffer distance** | See Table T1 | | | Health and pollution risks |
| **Land area** | Area is available | | Area is not available | Health and pollution risks |
| **Rocks and rock outcrops (percentage** | <10% | 10–20% | >20% | Limits system performance |

| | | | | |
|---|---|---|---|---|
| **of land surface containing rocks >200mm diameter)** | | | | |
| **Geology** | | | Major geological discontinuities, fractured or highly porous | Groundwater pollution hazard |