



CSIRO

BUILDING PRODUCTS & SYSTEMS

Appraisals

CSIRO Appraisals, PO Box 56, Graham Road, Highett, Vic. 3190
Tel: (03) 9252 6000 Fax: (03) 9252 6244
E-mail: appraisals@dbce.csiro.au
Web: www.dbce.csiro.au/appraisals

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TECHNICAL ASSESSMENT 359

June 2008

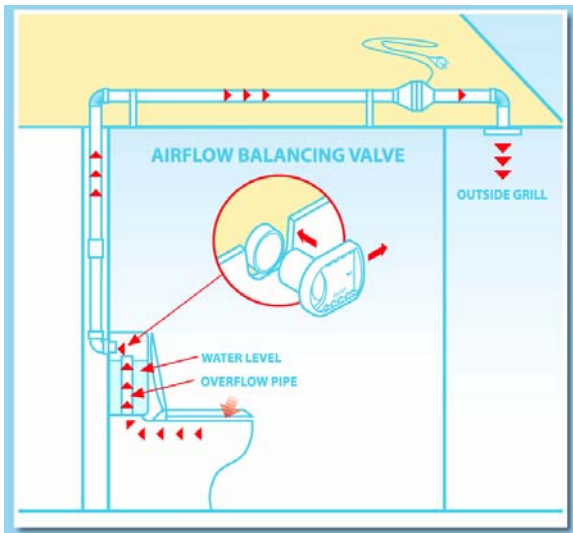
OdourVac™

PURPOSE

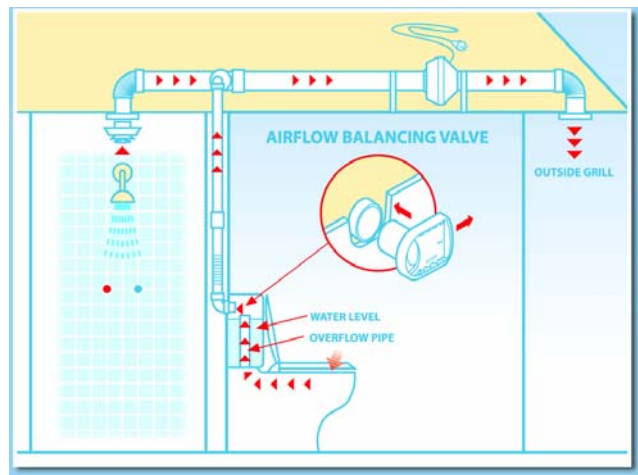
Toilet ventilation system that attaches to the rear of the toilet cistern and draws air from the flushing rim to enable the ventilation of individual toilet compartments and dual connected shower and toilet compartments and shower, toilet and laundry compartments.

APPLICANT

OdourVac Ventilation Systems Pty Ltd (ABN 90 088 309 237), 19 Ladd Road, New Gisborne, Victoria, 3438 (Manufacturer)



OdourVac Kit



ShowerVac Kit

TECHNICAL OPINION

In the opinion of CSIRO Appraisals, the OdourVac™, ShowerVac, Premium ShowerVac, ShowerVac & Laundry, and Premium ShowerVac & Laundry systems distributed by OdourVac Ventilation Systems Pty Ltd are suitable for use as a ventilation system for individual toilet compartments; toilet, shower & laundry compartments; and dual shower & toilet compartments under the following conditions;

1. The ventilation systems are installed by licensed plumbers and electricians in accordance with the installation instructions from OdourVac Ventilation Systems Pty Ltd.
 - Installation Instruction: OdourVac™ Kit Models OVK1, OVK1IW.
 - Installation Instruction: ShowerVac Kit 100 mm system Models OVK2-100, OVK2IW-100, OVK2RU-100, OVK2RUIW-100.
 - Installation Instruction: Premium ShowerVac Kit 150 mm system Models OVK2-150, OVK2IW-150, OVK2RU-150, OVK2RUIW-150.
 - Installation Instruction: ShowerVac & Laundry Kit 100 mm system: Models OVK3-100, OVK3IW-100, OVK3RU-100, OVK3RUIW-100.
 - Installation Instruction: Premium ShowerVac & Laundry Kit 150 mm system: Models OVK3-150, OVK3IW-150, OVK3RU-150, OVK3RUIW-150.

Note: These instructions are available from OdourVac Ventilation Systems Pty Ltd, 19 Ladd Road, New Gisborne, Victoria, 3438 (Phone 03 5428 2099).

2. The make-up air is drawn from either outside the building, or from within parts of the building that meet Building Code of Australia (BCA) requirements for ventilation.
3. The **OdourVac™** system is suitable only for individual toilet compartments containing a single toilet.

The **ShowerVac** system is suitable only for individual shower compartments or for dual connected shower and toilet compartments.

The **Premium ShowerVac** system is suitable only for individual shower compartments or for dual connected shower and toilet compartments.

The **ShowerVac & Laundry** system is suitable only for shower, laundry and toilet compartments.

The **Premium ShowerVac & Laundry** system is suitable only for shower, laundry and toilet compartments or for dual connected shower and toilet compartments.

4. OdourVac™, ShowerVac and ShowerVac & Laundry systems have not been appraised for use in situations where there are additional odour sources other than individual toilet compartments, dual connected shower and toilet compartments, and connected shower and laundry compartments (e.g. urinals). In these instances, the installed system must comply strictly with AS 1668.2
5. PVC, ABS or polypropylene waste pipe complying with AS/NZS 1260 must be used for ducting for the OdourVac™ systems, although flexible ducting may be used for the ShowerVac and ShowerVac & Laundry systems, provided that the minimum required air flow rate of 25 l/s is maintained in accordance with AS 1668.2.
6. The minimum height of the outlet of the system is 2 m above ground level.
7. A minimum gap of 10 mm must be provided under the shower room door to provide sufficient make-up air for the ShowerVac and ShowerVac & Laundry systems. The minimum door width is 810 mm.
8. At the time of printing the only toilet suite identified by the applicant as being incompatible with OdourVac™ are the Pizzie Genori toilet suites. OdourVac Pty Ltd can provide advice with respect to the suitability of the OdourVac™ with specific toilet suites.

BUILDING CODE of AUSTRALIA

In the opinion of CSIRO Appraisals, the systems described in this Technical Assessment and installed under the conditions listed herein will satisfy the performance required of Clauses FP4.4 & FP4.5 (Volume 1 - Class 2 to Class 9 buildings) and Clauses P2.4.5 (Volume 2 – Class 1 & 10 buildings) of the Building Code of Australia 2008.

Notes:

- (i) The inclusion of this clause with reference to the BCA is aimed at assisting those involved in the design, specifying and building approval/permit process relate the Appraisal to the relevant Performance Requirements of the BCA.
- (ii) Any changes made to the BCA will be reviewed during the term of validity of this Technical Assessment and, where necessary, any amendment required will be published on the CSIRO Appraisals web pages on <http://www.cmit.csiro.au>.

RELATED INFORMATION

VALIDITY OF THE ASSESSMENT

Condition:

This Technical Assessment applies only to the use of the OdourVac™, ShowerVac and ShowerVac & Laundry systems as described herein.

Withdrawal:

This Technical Assessment will be withdrawn or amended if CSIRO Appraisals considers that a change in design or manufacturing quality renders the basis of appraisal invalid, or if reported field experience convinces CSIRO Appraisals of unsatisfactory quality or performance.

Term of Validity:

This Technical Assessment is valid until 31 December 2009. Technical Assessments may be amended or withdrawn during the term of validity. Users of this Technical Assessment should verify that it remains valid and is the current version by checking on the CSIRO Appraisals website:
<http://www.cmit.csiro.au/services/appraisals/>.

RELEVANT DOCUMENTS

Installation Instruction: OdourVac™ Kit Models OVK1, OVK1IW.

Installation Instruction: ShowerVac Kit 100 mm system Models OVK2-100, OVK2IW-100, OVK2RU-100, OVK2RUIW-100.

Installation Instruction: Premium ShowerVac Kit 150 mm system Models OVK2-150, OVK2IW-150, OVK2RU-150, OVK2RUIW-150.

Installation Instruction: ShowerVac & Laundry Kit 100 mm system: Models OVK3-100, OVK3IW-100, OVK3RUIW-100, OVK3RU-100.

Installation Instruction: Premium ShowerVac & Laundry Kit 150 mm system: Models OVK3-150, OVK3IW-150, OVK3RUIW-150, OVK3RU-150.

AS/NZS 1260-2002, PVC-U pipes and fittings for drain, waste and vent application.

AS 1668.2-2002, The use of ventilation and air-conditioning in buildings - Ventilation design for indoor air contaminant control.

AS/NZS 3100-2002, Approval and test specification - General requirements for electrical equipment.

APPROVED ASSESSMENT EXTRACT

The OdourVac™, ShowerVac and ShowerVac & Laundry systems manufactured by OdourVac Ventilation Systems Pty Ltd (ABN 18 076 338 755), New Gisborne, Victoria are suitable for the mechanical ventilation for individual toilet compartments; toilet, shower & laundry compartments; and dual shower & toilet compartments when the conditions of CSIRO Appraisals Technical Assessment 359 are fulfilled.

APPRAISAL

DESCRIPTION

The five variations of the OdourVac™ system appraised by CSIRO are:

- OdourVac™
- ShowerVac
- Premium ShowerVac
- ShowerVac & Laundry
- Premium ShowerVac & Laundry

The systems are supplied in kit form in individual packages with the contents of each package labelled on the outside of the package. The description of the systems and the installation procedures are based on information provided by the applicant.

OdourVac™ system

General

The OdourVac™ system kit consists of the following components:

- 1 × ODV1 in-line extractor fan with fixing brackets.*
- 1 × 500 mm external wall grill
- 2 × 500 mm × 90° bend
- 1 × 500 mm socket
- 1 × 500 mm × 400 mm socket reducer
- 1 × 250 mm length of 40 mm PVC
- 1 × 200 mm length of 40 mm clear flex
- 2 × 100 mm length of 40 mm PVC
- 1 × 400 mm × 90° bend
- 2 × 40 mm cover plate
- 1 balancing valve

OdourVac Ventilation Systems Pty Ltd can provide advice on installations with duct work of maximum 10-15 metres.

Installation

The OdourVac™ systems connect directly into the back of the cistern and draw air from the toilet pan via the internal overflow pipe. For this to occur, it is essential that an additional hole be located in the back of the cistern to enable the connection of the OdourVac™ system. If a toilet suite does not have an additional hole, prospective installers of the OdourVac systems should contact the applicant on 1800 222 969.

There are two stages when installing OdourVac™ systems.

Rough In – The project is at lock up stage and prior to the plaster going on the walls. At this stage the fans, pipework, bends etc are installed.

Fit Off – Once the plaster/painting/tiling has been completed and the plumber is commencing the toilet fit-off, the OdourVac™ systems can be fitted off. Connect the OdourVac system into the back of the cistern and install the internal ceiling diffuser and external grille or roof cowl (roof cowl not included).

Installation of the OdourVac™ system requires the following items which are not supplied as part of the system kit:

- 50mm PVC pipe (length as required).
- Extra bends if required.
- Pipe brackets and fixings.
- PVC glue.
- GPO Source installed by a licensed electrician where the fan will be located. The fan can be activated by any of the following options:
 - connection to light switch;
 - separate fan switch; or
 - movement sensor switch.

Prior to installation, the water supply should be turned off and the cistern then emptied by flushing the toilet.

OdourVac Ventilation Systems Pty Ltd will provide assistance with the design of individual installations on request. As the OdourVac™ system is designed for pipe lengths less than 20 metres, the assistance of OdourVac Ventilation Systems Pty Ltd should be sought for pipe lengths of more than 20 metres.

Rough In

Fan & Ductwork Location. Determine where fan is to be positioned and intended route of ductwork. Ensure the toilet suite to be used is known and where the OdourVac™ hole will be located in the cistern.

Affix fan to building structure using bracket supplied (ensure fan is facing in correct direction). Exhaust fan can be positioned horizontally or vertically in ceiling space.

Installation of 50 mm ductwork. Main ductwork pipe to be installed in ceiling cavity should be installed in most direct route as possible from the WC through to external discharge location (eaves, wall or roof cowl). Eliminate bends where possible. If necessary, use 2 x 45° bends instead of 90° bend.

- a) identify where the WC is to be positioned. Connect 50mm PVC pipe to suction end of exhaust fan (attached with duct tape). Direct pipe towards intended WC location.
- b) Return to exhaust fan, connect 50mm PVC pipe into discharge end of exhaust fan (attach with duct tape). Direct pipe towards intended discharge point ie: eave, through wall or roof.
- c) For exterior eave/wall discharge, glue 50mm 90° bend to 50mm pipe. Position pipe towards discharge point and leave loose in ceiling/eave/wall ready for fit off. Take measurements as to location for fit off.

Installation of WC connection – Two different installations are required to connect OdourVac™ to a toilet. Connection to back of cistern or to flushpipe.

Cistern connection. - The OdourVac™ system connects directly into the back of the cistern and draws air from the toilet pan via the internal overflow pipe. An additional hole may need to be drilled into the cistern to enable the OdourVac™ connection. If toilet suite does not have an additional hole, contact OdourVac on 1800 222 969 for information on cistern drilling.

- a) Check toilet dimensions, measure point to centre of OdourVac™ hole. Measured in (mm) either to left or right from centre of cistern and height from floor level (include thickness of floor bed and tiles). This is the reference point to which you rough in pipework in wall cavity.
- b) From 50mm PVC pipe installed in ceiling space continue 50mm PVC pipe down wall cavity. *(If pipework needs to be chased into brick or masonry walls, 40mm pipe may be used for full length of wall cavity – increase pipework to 50mm once in ceiling).*
- c) Connect 50mm socket to pipe and insert 40mm reducer to socket. Attach 250mm length 40mm pipe to reducer, then 40mm clear flexible ducting to PVC pipe. Glue all PVC fittings. Connect clear flex to PVC using duct tape/hose clamps.
- d) Attach short length of 40mm pipe to bottom of clear flex. Glue 40mm 90° PVC bend to pipe. Bend must terminate at the height and location of OdourVac hole in cistern. Bend must face hole in cistern. Leave duct work in wall cavity to be sheeted over. Take measurements as to location of pipe in cavity for fit off.

Flushpipe connections – OdourVac™ system connects directly to the flushpipe of inwall cisterns and draws air from toilet pan via flushpipe. An additional PVC flushpipe saddle is provided in kit to enable connection to flushpipe.

- a) Connect flush pipe saddle to flushpipe. Ensure 45° elbow is pointing in upward direction. Use screws and silicon to form tight seal on flushpipe.
- b) Using 40mm hole saw, drill down through centre of saddle and penetrate through flushpipe forming an open airway.
- c) Connect 50mm ductwork
- d) Connect 50mm socket and 40mm reducer. Attach 1 x 250mm length 40mm pipe to reducer. Attach 1 x 40mm 90° bend and remaining 1 x 250mm length 40mm pipe. Finally, attach 1 x 40mm 45° bend and join to flushpipe saddle. All PVC fittings to be glued.

Note: With all OdourVac™ inwall cistern systems, the connections are unable to be accessed after plastering of the wall cavity. It is therefore imperative to test system to ensure all connections are tightly sealed and that air is being extracted through bottom of flushpipe to pan. To test, run exhaust fan and cup hand over bottom of flushpipe. If the OdourVac™ connection is directly into top of inwall cistern, check for any air leakage from entire cistern. i.e.: Dust caps, access panels. A tight seal must be in place for system to operate effectively.

Fit Off (For Flushpipe connections go to g)

- a) Refer to previous rough in measurements for pipework location in wall cavity.
- b) Position cistern and mark hole location. Remove and cut hole in plaster or tiles.
- c) Locate 40mm bend in wall cavity and glue final short length 40mm PVC to bend. *This pipe is adjusted after connecting cistern and installing balancing valve.* Slide 40mm coverplate over 40mm PVC to cover any excess hole.
- d) Feed pipe through hole in cistern and re-attach cistern to pan.
- e) Trim 40mm inlet pipe approx flush with inside of cistern. Attach OdourVac™ Balancing Valve by pushing into pipe. Soft foam gasket will seal any other gaps. Once installed, seal any gaps with silicone which may affect performance.
- f) Adjust balancing valve to 100% open and fine tune for optimum comfort.
- g) To fit the external weatherproof louvre grille go to exterior of building, refer to rough in measurements for location of flexible ductwork in eaves/wall. Cut hole in eaves or wall. Locate 50mm bend, attach external grille with duct tape, secure grille with screws/silicon.
- h) Ensure power is supplied to exhaust fan. Commission by testing and adjust to achieve correct airflow.

ShowerVac and Premium ShowerVac

General

The Premium ShowerVac has a higher capacity extraction fan and 150 mm piping and ducting compared to the standard ShowerVac system which has 100 mm piping and ducting. The kits come in the following configurations:

- Standard (OVK2-100 & OVK2-150)
- Roof Unit (OVK2RU-100 & OVK2RU-150)
- Flushpipe Connection (OVK2IW-100 & OVK2IW-150)
- Roof Unit for Flushpipe Connection (OVK2RUIW-100 & OVK2RUIW-150)

The standard OVK2 - 100 ShowerVac system kit consists of the following components:

- 1 x ODV4 Inline fan
- 1 x 100mm backdraft shutter
- 2 x 150 x 100mm flex adaptor
- 2 x 1.5 m length of 150Ømm flex duct
- 1 x 150mm round ceiling diffuser
- 1 x 150mm square external wall grille
- 1 x 100mm x 50mm boss junction
- 1 x 50Ømm x 90° bend
- 1 x 50Ømm socket
- 1 x 50Ømm x 40Ømm socket reducer
- 1 x 250mm length of 40mm PVC
- 1 x 200mm length of 40mm clear flex
- 2 x 100mm length of 40mm PVC
- 1 x 40Ømm x 90° bend
- 2 x 40mm cover plate
- 1 x balancing valve

OdourVac Ventilation Systems Pty Ltd can provide advice on installations with duct work of maximum 15-20 metres.

Installation

Installation of the ShowerVac systems requires the same items as detailed for the OdourVac system.

OdourVac Ventilation Systems will provide assistance with the design of individual installations on request. As the OdourVac system is designed for pipe lengths less than 20 metres, the assistance of OdourVac should be sought for pipe lengths of more than 20 metres.

Rough In

Fan & ductwork location - Determine where fan is to be positioned and intended route of ductwork. Ensure the toilet suite to be used is known and where the OdourVac™ hole will be located in the cistern.

- Inline Fans - Affix fan to building structure using bracket supplied (ensure fan is facing in correct direction). Exhaust fan can be positioned horizontally or vertically in ceiling space. For optimum results OdourVac recommends installing 1 metre length of PVC pipe between discharge outlet of inline fan and the external grill. Additionally a 300mm length of PVC pipe should be installed either side of inline fan prior to any bends/junctions.
- Roof Mounted Fans - Using 100mm PVC pipe, perform roof penetration and flash using decktite. Mount exhaust fan on top of PVC pipe. Ensure lead/plug is fed back into ceiling space for wiring back to room/s being ventilated (by electrician).

Installation of Main 100mm Ductwork

For optimum results main ductwork pipe in ceiling cavity should be installed in the most direct route as possible from ceiling diffuser (shower) to exhaust fan, through to external discharge location (either eaves, wall or roof cowl). Eliminate using bends where possible and use 2 x 45° bends instead of a 90° bend.

- Identify where ceiling grille is to be positioned in bathroom. Connect 100 mm PVC pipe into suction end of exhaust fan (attach via with duct tape). Direct pipe towards intended ceiling grille location.
- Continue 100mm pipe to bathroom. Join 150 x 100 flex adaptor to end of 100 mm PVC pipe. Attach 150 mm length of flexible ducting to flex adaptor (use duct tape). Leave flex loose in ceiling cavity above shower ready for fit off. *Note: To assist in reducing noise levels, use the full 1.5 metre length of flex. Take measurements as to location of flex for fit off.*
- Return to exhaust fan, connect 1 m PVC pipe into discharge end of exhaust fan (attach with duct tape). Direct pipe towards intended discharge point ie: eave, through wall or roof.
- For exterior eave/wall discharge, glue 150x100 mm flex adaptor to end of 100mm pipe. Connect 1500 mm flexible ducting to flex adaptor (use duct tape). Position flex towards discharge point and leave loose in ceiling/eave/wall ready for fit off. Take measurements as to location for fit off. *Note: The 1.5 m length flex may be cut down to suit the installation.*

Installation of boss junction

- Choose preferred location where the WC connection will branch off the main 100mm PVC pipe.
- Drill a 50mm hole in the PVC pipe and place the boss junction over the drilled hole, ensuring the hole & boss junction are aligned.
- Fix screws to boss junction (as indicated) and seal using silicon.

Installation of WC connection. Refer to OdourVac above.

Fit off (refer to OdourVac™ above and following points below)

To install ceiling diffuser for shower. Refer to rough in measurements for location of flexible ductwork in ceiling cavity.

Use ceiling diffuser template in diffuser box, mark/cut out hole in ceiling.

Locate flexible ducting and attach to ceiling diffuser (duct tape).

To attach diffuser to ceiling, load the 3 toggle clips by pushing clips up.

Raise diffuser to ceiling and position so that the 3 clip levers are touching ceiling. Push upwards and clips will set off securing diffuser in place.

ShowerVac & Laundry and Premium ShowerVac & Laundry

General

The Premium ShowerVac & Laundry has a higher capacity extraction fan and 150 mm piping and ducting compared to the standard system which has 100 mm piping and ducting. The kits come in the following configurations:

- Standard (OVK3-100 & OVK3-150)
- Roof Unit (OVK3RU-100 & OVK3RU-150)
- Inwall Cistern (OVK3IW-100 & OVK3IW-150)
- Roof Unit for Inwall Cistern (OVK2RUIW-100 & OVK2RUIW-150)

The standard OVK3 – 100 ShowerVac & Laundry system kit consists of the following components:

- 1 x ODV4 Inline fan
- 1 x 100mm backdraft shutter
- 3 x 150 x 100mm fl ex adaptor
- 3 x 1.5 mtr length of 150Ømm fl ex duct
- 2 x 150mm round ceiling diffuser
- 1 x 150mm square external wall grille
- 1 x 100mm x 85° junction
- 1 x 100mm x 50mm boss junction
- 1 x 50Ømm x 90° bend
- 1 x 50Ømm socket
- 1 x 50Ømm x 40Ømm socket reducer
- 1 x 250mm length of 40mm PVC
- 1 x 200mm length of 40mm clear fl ex
- 2 x 100mm length of 40mm PVC
- 1 x 40Ømm x 90° bend
- 2 x 40mm cover plate
- 1 x balancing valve

Installation

Installation of the ShowerVac systems requires the same items as detailed for the OdourVac™ system.

OdourVac Ventilation Systems will provide assistance with the design of individual installations on request. As the OdourVac™ system is designed for pipe lengths maximum 15-20 metres, the assistance of OdourVac should be sought for pipe lengths of more than 20 metres.

Fan and ductwork location. Refer to ShowerVac above.

Installation of Main Ductwork

For optimum results main ductwork pipe to be installed in ceiling cavity should be installed in the most direct route as possible from ceiling diffuser (shower) to exhaust fan, through to external discharge location (either eaves, wall or roof cowl). Eliminate using bends where possible and use 2 x 45° bends instead of a 90° bend.

- a) Identify where ceiling grille is to be positioned in bathroom. Connect 100mm PVC pipe into suction end of exhaust fan (attach with duct tape). Direct pipe towards intended ceiling grille location.
- b) Determine where the branch to the laundry grille will be located in the main ductwork and install the 100mm x 85° junction (glue).
- c) Continue 100mm pipe from junction to bathroom. Join 150x100 mm flex adaptor to end of 100mm PVC pipe. Attach 150mm length of flexible ducting to flex adaptor (use duct tape). Leave flex loose in ceiling cavity above shower ready for fit off. *Note: To assist in reducing noise levels, use the full 1.5 m length of flex.* Take measurements as to location of flex for fit off.
- d) Repeat step C for the laundry grille and also take measurements.
- e) Return to exhaust fan, connect 100mm PVC pipe into discharge end of exhaust fan (attach with duct tape). Direct pipe towards intended discharge point i.e.: eave, through wall or roof.
- f) For exterior eave/wall discharge, glue 150x100mm flex adaptor to end of 100 mm pipe. Connect 150 mm flexible ducting to flex adaptor (use duct tape). Position flex towards discharge point and leave loose in ceiling/eave/wall ready for fit off. *Note: The 1.5 m length of flex may be cut down to suit the installation.* Take measurements as to location for fit off.

Installation of Boss Junction (refer to ShowerVac above).

Installation of WC Connection (refer to ShowerVac above).

Fit Off (refer to ShowerVac above)

Operation

The OdourVac™ system extraction fan draws air or steam from the compartment and discharges it to the outside through the ductwork. Make-up air is drawn into the compartment through conventional means from gaps under doors or gaps around windows.

DESIGN INFORMATION

General:

The OdourVac™, ShowerVac and ShowerVac & Laundry systems provide mechanical ventilation of toilet compartments, dual shower and toilet compartments, and dual shower and toilet and laundry compartments.

Durability:

The OdourVac™, ShowerVac and ShowerVac & Laundry systems would be expected to provide many years of service when installed in accordance with manufacturer's instructions. Please note that CSIRO has not investigated the likely service life of the electric extraction fan units.

Maintenance:

It is not considered likely that the PVC duct or fittings and flexible duct will require maintenance during the service life of the OdourVac™ systems. The fan units for must be accessible by means of an access panel to enable the fan to be removed or replaced if required. It is recommended that the air intake for the shower (ceiling diffuser) be removed for cleaning on an annual basis or more often if required. Cleaning of the ceiling diffuser is by way of hot soapy water to remove build up of residue.

BASIS OF APPRAISAL

CSIRO Appraisals has assessed the following aspects in undertaking this appraisal:

- (a) the effectiveness of the system in providing mechanical ventilation of toilet compartments and dual shower and toilet compartments.
- (b) installation procedures; and
- (c) durability of the system.

The following documents and inspections were used in carrying out the appraisal.

Manufacturer's Information:

1. **OdourVac Ventilation Systems Pty Ltd (ABN 90 088 309 237), 19 Ladd Road, New Gisborne, Victoria, 3438:**
Installation Instruction: OdourVac™ Kit Models OVK1, OVK11W.
2. **OdourVac Ventilation Systems Pty Ltd (ABN 90 088 309 237), 19 Ladd Road, New Gisborne, Victoria, 3438:**
Installation Instruction: ShowerVac Kit 100 mm system Models OVK2-100, OVK2IW-100, OVK2RU-100, OVK2RUIW-100.
3. **OdourVac Ventilation Systems Pty Ltd (ABN 90 088 309 237), 19 Ladd Road, New Gisborne, Victoria, 3438:**
Installation Instruction: Premium ShowerVac Kit 150 mm system Models OVK2-150, OVK2IW-150, OVK2RU-150, OVK2RUIW-150.
4. **OdourVac Ventilation Systems Pty Ltd (ABN 90 088 309 237), 19 Ladd Road, New Gisborne, Victoria, 3438:**
Installation Instruction: ShowerVac & Laundry Kit 100 mm system: Models OVK3-100, OVK3IW-100, OVK3RU-100, OVK3RUIW-100.
5. **OdourVac Ventilation Systems Pty Ltd (ABN 90 088 309 237), 19 Ladd Road, New Gisborne, Victoria, 3438:**
Installation Instruction: Premium ShowerVac & Laundry Kit 150 mm system: Models OVK3-150, OVK3IW-150, OVK3RU-150, OVK3RUIW-150.

Reports:

1. **Vipac Engineers & Scientists Ltd, Melbourne, Australia, August 2007. Airflow Research & Development Study of OdourVac Ventilation System:**
This report presents the results of airflow development tests carried out on three different systems (50 mm dia, 100 mm dia and 150 mm dia fans) supplied by OdourVac.
2. **Philip Chun and Associates, Opinion – Discharge Location of a Horizontal Toilet or Kitchen from a Sole Occupancy Unit in a Multi Level Residential Development (13 October 2004):**
This document concludes that in the opinion of Philip Chun & Associates, the provision of a single sole occupancy unit exhaust discharge within 1 m of an openable window/door of the same sole occupancy unit complies with AS1668.2 and the Building Code of Australia 2004.

3. **BCA Logic Pty Ltd, Alternative Solution Assessment Report (5 February 2004):**
This report concludes that the use of UPVC pipes as exhaust ductwork for the OdourVac Ventilation System, will satisfy the Performance Requirements of CP4 of the Building Code of Australia, subject to:
 - the ductwork is used for exhaust ventilation from wet areas;
 - an approved fire damper (intumescent) is utilised at the connection to any common fire rated shaft, and is installed in accordance with the manufacturer's requirements; and
 - the maximum diameter pipe used is 300mm.
4. **Vipac Engineers & Scientists Ltd, Melbourne, Australia, February 2008. Airflow and Acoustic Research & Development Study of 2 Inline Fans and 3 Roof Fans:**
This report presents the results of acoustic and airflow development tests carried out on two inline fans and three roof fans supplied by OdourVac.

Inspections:

Inspections of installations have been undertaken. Based on the test reports and information provided by the applicant, there is no foreseeable reason why satisfactory installation will not be achieved.



Kenneth KJ Lofhelm
CSIRO Appraisals



CSIRO Appraisals is a project of CSIRO Materials Science & Engineering.

From 1978, under the auspices of the Australian Building Systems Appraisal Council (ABSAC), CSIRO ran an appraisal service in conjunction with the Australian Institute of Building Surveyors, the Housing Industry Association, the Insurance Council of Australia and the Master Builders Association. In 1999, CSIRO Appraisals was formed to continue the business of ABSAC under the sole patronage of CSIRO.

Technical Assessments are intended to help all those concerned with the approval, specification and use of new products or systems. They are assessments of the product, system or material but are not approvals or endorsements. They may be submitted to approval authorities as part of the justification process required to obtain approval.

Each Technical Assessment has been prepared by CSIRO Appraisals and then reviewed by the Technical Advisory Committee (TAC), detailed below.

CSIRO Appraisals bases its assessment on the product and information it receives and cannot accept responsibility for deviations in the manufactured quality and performance of the material, product or system.

TECHNICAL ADVISORY COMMITTEE

G. Geary (Chairman)	Australian Institute of Building Surveyors
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R. Goodall	Master Builders' Australia Inc.
M. Mafucci	Standards Australia
R. Oke	National Association of Testing Authorities, Australia
C. F. Woods	Housing Industry Association
B. Schafer	Industry Advisor
A. Griffin	Australian Institute of Building Surveyors
S. Hanson	Manufacturing & Infrastructure Technology, CSIRO
J. Sinclair (Appraisals Co-ordinator)	Manufacturing & Infrastructure Technology, CSIRO

REGIONAL REVIEW COMMITTEES

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	P. Nowland			
Victoria	North Queensland	Tasmania	ACT	
M. Hopkins	M. Collard	A. Humphreys	T. Atkinson	
P. Moore				
P. Phillips				



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H. RELATED DOCUMENTS**J. OTHER/OPTIONAL INFORMATION****14. ABSTRACT** *(CSIRO Appraisals Approved Assessment Extract)*

The OdourVac™, ShowerVac and ShowerVac & Laundry systems manufactured by OdourVac Ventilation Systems Pty Ltd (ABN 18 076 338 755), New Gisborne, Victoria are suitable for the mechanical ventilation for individual toilet compartments; toilet, shower & laundry compartments; and dual shower & toilet compartments when the conditions of CSIRO Appraisals Technical Assessment 359 are fulfilled.