RAUPIANNO PLUS
The versatile acoustic drainage and trade waste system
Installer guide
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</table>
RAUPIANO PLUS
Information and safety recommendations

Notes on this Installation Guide

Applicability
This Installation guide is applicable for New Zealand.

This Installation guide is subject to technical modification and meant to be used in conjunction with the latest version of REHAU’s Installation and Technical Manual “RAUPIANO PLUS”. For current information, please contact your REHAU Sales Office.

The current technical information is available from your REHAU sales office, or as download on the internet at www.rehau.co.nz.

All schematics show general examples only and are not intended to satisfy the installation requirements for any particular project. Specific measures for fire protection, acoustics, structural integrity etc. may or may not be required depending on building class and design. Check with responsible experts and refer to the National Construction Code for detailed information.
RAUPIANO PLUS
System information

- **Outer layer:** Impact-resistant Polypropylene (PP)
- **Middle layer:** High-stiffness mineral reinforced Polypropylene (PP)
- **Inner layer:** Abrasion-resistant & low friction Polypropylene (PP)

**Sound absorbing bends**

**Rubber lined brackets**

**Lubricant**
ADVANTAGES

- Excellent sound-insulation properties
- Eliminates acoustic-lagging
- Fast and easy installation
- The joint is designed to absorb any thermal expansion
- High quality product
- Green material, non-toxic material without halogen
**RAUPIANO PLUS**
Transportation, storage and handling

**Transportation**
RAUPIANO PLUS proves its robustness during transport and at the construction site thanks to its three-layer structure and impact-resistant and shock-proof outer layer. Ensure that pipes make firm contact over their entire length.

**Correct transportation procedure**
- Where possible use a truck for deliveries. Lay pipe flat on the tray.
- Keep pipe strapped down so it doesn’t roll around and remains supported.
- Alternate socket and pipe ends when loading pipe.

**Storage**
- Protect boxes from moisture during transport and storage.
- RAUPIANO PLUS and its seals can be stored outdoors for up to 1 year.

**What not to do**
- Do not throw pipe into the tray.
- Do not throw pipe off the ute.
- Do not over tighten with ratchet.
- Take care with O-rings and ensure they are in good condition.
- Unsupported pipes can bend.
- Keep pipes clear of building debris whilst on site.
RAUPIANO PLUS
Product list

Pipe Sizing Chart

<table>
<thead>
<tr>
<th>PVC</th>
<th>RAUPIANO PLUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN</td>
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</tr>
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<td>100</td>
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</tr>
<tr>
<td>150</td>
<td>160</td>
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</table>

Pipes
With push-fit socket and rubber sealing ring
Material: RAU-PP (mineral reinforced)
Colour: white

<table>
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<tr>
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RAUPIANO PLUS
Product list

Bend
With rubber sealing ring
Material: RAU-PP (mineral reinforced)
Colour: white

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Note: (*) Swept bend
### Single Branch junction
With rubber sealing ring
**Material:** RAU-PP (mineral reinforced)
**Colour:** white

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Note: (1) Swept angle

### Double Branch junction
With rubber sealing rings
**Material:** RAU-PP (mineral reinforced)
**Colour:** white

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<td>123076</td>
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</table>
Reducer with rubber sealing ring
Material: RAU-PP (mineral reinforced)
Colour: white

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PVC Adaptor
Material: PVC
Colour: white

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<th>L₂ (mm)</th>
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PVC Adaptor Bush
Material: PVC
Colour: white

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Double Socket
With rubber sealing rings
Material: RAU-PP (mineral reinforced)
Colour: white

<table>
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Slip-on Socket
With rubber sealing rings
Material: RAU-PP (mineral reinforced)
Colour: white

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I.O. Access Pipe
With surface-flushing insert and screwed cap and rubber sealing ring
Material: RAU-PP (mineral reinforced)
Colour: white

<table>
<thead>
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Socket Plug
Material: RAU-PP (mineral reinforced)
Colour: white

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Securing Clip
For securing the socket plug and should be ordered in conjunction with either socket plug 121474 or 123106
Material: Galvanized steel
Colour: Silver

<table>
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<tr>
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Push-fit lock
To prevent the push-fit joint from sliding apart at higher pressure and improve pressure resistance up to 2 bars. Supplied together with the necessary bolts and nuts
Material: Polymide
Color: Black

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</table>
**Long Socket**
With rubber sealing ring  
**Material:** RAU-PP (mineral reinforced)  
**Colour:** white

<table>
<thead>
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<th>L (mm)</th>
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<tr>
<td>121594</td>
<td>110</td>
<td>130</td>
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</tbody>
</table>

**P-trap siphon / 110mm disconnector gully**
To be used together with DN 110 bend 45°. With rubber sealing ring and fixing eyelet.  
**Material:** RAU-PP (mineral reinforced)  
**Colour:** white

<table>
<thead>
<tr>
<th>REHAU Article</th>
<th>DN/OD in mm</th>
<th>a (mm)</th>
<th>b (mm)</th>
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<tbody>
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**Floor Waste Gully**
With 3x DN 50 inlets + 1 x DN75 outlet. Includes removable baffle.  
DN50 inlets require DN50 double socket  
**Material:** RAU-PP (mineral reinforced)  
**Colour:** white

<table>
<thead>
<tr>
<th>REHAU Article</th>
<th>DN/OD in mm</th>
<th>a (mm)</th>
<th>b (mm)</th>
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RAUPIANO PLUS
Product list

Baffle (spare part)
Removable baffle for RAUPIANO PLUS floor gully with rubber sealing
to provide air-tightness
Material: ABS
Color: white

Connection Pipe
For connection to other pipe materials. To be used
together with rubber nipple
Material: RAU-PP (mineral reinforced)
Colour: white
Application: refer to page 38

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<th>d_r (mm)</th>
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<td>123164</td>
<td>40/40-50</td>
<td>32 - 40</td>
<td>40</td>
<td>53.7</td>
<td>63</td>
</tr>
<tr>
<td>121414</td>
<td>50/40-50</td>
<td>32 - 40</td>
<td>50</td>
<td>53.7</td>
<td>61</td>
</tr>
<tr>
<td>121424</td>
<td>50/50</td>
<td>47 - 50</td>
<td>50</td>
<td>67.2</td>
<td>50</td>
</tr>
</tbody>
</table>

Rubber Sealing Ring
For pipe and fitting sockets
Material: rubber
Colour: black

<table>
<thead>
<tr>
<th>REHAU Article</th>
<th>OD in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>128243</td>
<td>40</td>
</tr>
<tr>
<td>128013</td>
<td>50</td>
</tr>
<tr>
<td>128023</td>
<td>75</td>
</tr>
<tr>
<td>128033</td>
<td>110</td>
</tr>
<tr>
<td>128053</td>
<td>160</td>
</tr>
</tbody>
</table>
Rubber Nipple
For connection to other pipe materials. To be used together with connection pipe.
Material: rubber
Colour: black
Application: refer to page 38

<table>
<thead>
<tr>
<th>REHAU Article</th>
<th>DN in mm</th>
<th>Metal pipe outer $d_m$</th>
<th>$d_e$ (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>126253</td>
<td>50/40</td>
<td>32 - 40</td>
<td>55</td>
</tr>
<tr>
<td>121913</td>
<td>50/50</td>
<td>47 - 50</td>
<td>68</td>
</tr>
</tbody>
</table>

Rubber Nipple with Bead
For connection to other pipe materials. Replaces the pre-assembled rubber sealing ring in RAUPIANO PLUS pipes or fittings.
Material: rubber
Colour: black
Application: refer to page 39

<table>
<thead>
<tr>
<th>REHAU Article</th>
<th>DN in mm</th>
<th>$d_e$ (mm)</th>
<th>Metal pipe outer $d_m$</th>
</tr>
</thead>
<tbody>
<tr>
<td>122923</td>
<td>40/30</td>
<td>40.5</td>
<td>32 - 40</td>
</tr>
<tr>
<td>122933</td>
<td>50/30</td>
<td>50.5</td>
<td>32 - 40</td>
</tr>
<tr>
<td>122943</td>
<td>50/40</td>
<td>50.5</td>
<td>47 - 50</td>
</tr>
</tbody>
</table>

Lubricant
For push-fit connections

<table>
<thead>
<tr>
<th>REHAU Article</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>128943</td>
<td>250 g</td>
</tr>
<tr>
<td>128953</td>
<td>500 g</td>
</tr>
</tbody>
</table>
**Sound-dampening Support Bracket**

*Material:* galvanised strip steel  
*Colour:* Black  
*Includes:* Supporting and fastening clamps and headless screw  
*Application:* 1 per stack per floor. Refer to Chapter 7

<table>
<thead>
<tr>
<th>REHAU Article</th>
<th>DN in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>122004</td>
<td>75</td>
</tr>
<tr>
<td>122014</td>
<td>110</td>
</tr>
<tr>
<td>122034</td>
<td>160</td>
</tr>
</tbody>
</table>

**Guiding Clamp**

*With rubber lining and distance piece*  
*Material:* galvanised strip steel  
*Colour:* Green with yellow adjustment spacers. Spacers may be removed for tight fit on pipe  
*Application:* Used as a guiding clamp. Refer to Chapter 7

<table>
<thead>
<tr>
<th>REHAU Article</th>
<th>DN in mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>122654</td>
<td>40</td>
</tr>
<tr>
<td>120534</td>
<td>50</td>
</tr>
<tr>
<td>120019</td>
<td>75</td>
</tr>
<tr>
<td>120027</td>
<td>110</td>
</tr>
<tr>
<td>120057</td>
<td>160</td>
</tr>
</tbody>
</table>

**Fixing/Security Clamp**

*With rubber lining*  
*Material:* galvanised strip steel  
*Colour:* Black  
*Application:* Fixing clamp and security clamp. Refer to Chapter 7

<table>
<thead>
<tr>
<th>REHAU Article</th>
<th>DN in mm</th>
<th>Adjustable Range (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>122644</td>
<td>40</td>
<td>38-43</td>
</tr>
<tr>
<td>120504</td>
<td>50</td>
<td>50-56</td>
</tr>
<tr>
<td>120026</td>
<td>75</td>
<td>70-76</td>
</tr>
<tr>
<td>120029</td>
<td>110</td>
<td>108-116</td>
</tr>
<tr>
<td>120049</td>
<td>160</td>
<td>159-168</td>
</tr>
</tbody>
</table>
RAUPIANO PLUS
Trade waste

The pipes, fittings and seals can be operated continuously at 90°C (and up to 95°C for brief periods). They are suitable for the drainage of chemically aggressive waste water with a pH value of 2 (acidic) to 12 (basic). Please refer to chemical resistance list in RAUPIANO PLUS Installation and Technical Manual.

RAUPIANO PLUS is ideal for drainage of greasy waste water from commercial kitchens up to the grease separator.

For lengthy grease waste lines, the use of pipe trace heating may be necessary. This prevents premature grease accumulation. The temperature of the pipe trace heating suitable for plastic pipes may not exceed 65°C.
RAUPIANO PLUS pipe system exceeds the Rw + Ctr 40 requirements of the National Construction Code Vol. 1 / Building Code of Australia, and that a stand alone RAUPIANO PLUS system is comparable, in terms of sound insulation, to a fully lagged PVC system behind a specified ceiling separation. Refer to RAUPIANO PLUS Installation and Technical Manual, Chapter 4 - Sound insulation.
Buildings not regulated by NCC/BCA
The acoustic requirements of buildings outside of NCC/BCA’s scope tend to be different. The rooms are normally classified differently, and therefore have different noise level requirements. The $L_{A,\text{max}}$ and the $L_{A,\text{eq}}$ values are more of important values than $R_{W} + C_{T'}$.

RAUPIANO PLUS has gone through extensive acoustic testing with different ceilings, ranging from flush plasterboard to Rondo ceiling grid system with lay in tiles, and with different plasterboard thicknesses.

From very extensive raw data collected through real-life acoustic tests, AECOM assessed the acoustic performance of RAUPIANO PLUS and it was positively concluded that RAUPIANO PLUS achieves $R_{W} + C_{T'} 40$ ($R_{W} 46$) with 10 mm plasterboard. That means RAUPIANO PLUS satisfies BCAs acoustic requirements for habitable and non-habitable areas with just 10 mm plasterboard, without lagging and without insulation batt.

The acoustic assessment letters from the acoustic consultants (Renzo Tonin & Associates, ASK Consulting Engineers, and AECOM) can be found in the website’s download section under www.rehau.com.au/raupiano and www.rehau.co.nz/raupiano. The complete test reports can be provided upon request.
RAUPIANO PLUS
Assembly procedure

3 Steps Installation

Step 1
Cut, chamfer and deburr

Step 2
Lubricate

Step 3
Push it in

Pulling out is not required for:
- In ground installation
- Pipe length <500mm
RAUPIANO PLUS
Jointing process - cutting pipes

1. Ensure that the pipe is secured properly prior to cutting.
2. Cut the pipes with common pipe cutters or a fine-toothed saw. Cut pipe at a 90° angle from the pipe axis.
1 De-burr the inner diameter of the pipe.
2 For connections to push-fit socket pipe systems, taper the pipe ends with a tapering tool (i.e. Rothenberger Rocut cutter and chamfering tool 55020 DN 110 (Reece code: 7705255) or a coarse file at an angle of approximately 15°.
Pipe Assembly

1. Clean dirt from sealing ring, socket interior and pipe end.
2. Use small amount of RAUPIANO lubricant (eg. a 10mm drop) to moisten chamfered pipe and O-ring then slide into the socket until it stops.
3. Mark inserted male end in this position at the socket edge with a pencil, pen etc.

Note: Please ensure seals are clean and free from dirt, dust or grime. If concern, remove seal and wash in water to remove debris. Ensure to replace seal in direction of flow.
To accommodate thermal expansion of RAUPIANO system, the following conditions are recommended. Ensure witness mark is visible to ensure that the pipe is not accidentally pulled out.

**Insert fully and pull out 10mm per pipe for:**
- Pipes longer than 500mm;

**Insert spigot end fully into socket for:**
- Pipes shorter than 500mm;
- In ground applications;
- Fitting to fitting.
Bracket types

Sound-dampening bracket
- Model: Bifix 5000
- Minimizes transmission of vibrations from pipe through fixing into wall.
- Consists of loose and tight bracket:
  - lower clamp (loose) attaches to wall and de-couples pipe vibrations from wall fixing,
  - upper clamp (tight) supports pipe.
- attach to vertical stack only 1 required per floor, per stack
- REHAU proprietary

Fixing/security clamp
- Model: Bifix 1301
- Always tight on pipe
- When used as fixing clamp on horizontal pipes:
  - fix to ceiling
- When used as security clamp in vertical stacks:
  - never fix to wall
- Walraven or REHAU approved

Guiding clamps
- Allows for thermal expansion of the pipe
- Always loose on pipe (has spacer)
- Fix to ceiling on horizontal pipes
- Fix to wall on vertical stack
- Insert 1 yellow spacer per side
- Walraven or REHAU approved
RAUPIANO PLUS
Pipe support - sound dampening bracket

The patented sound-dampening support bracket consists of a supporting clamp (loose) and a fastening clamp (tight, sits above supporting clamp). One sound-dampening support bracket per floor is sufficient.

1
- Fit **fastening** clamp around the pipe and close it
- Ensure the taper of the fastening clamp is facing upwards

2
- Assemble **supporting** clamp on masonry
- Taper part of rubber facing up
- Round part of rubber facing down

3
- Open **supporting** clamp, insert pipe fitted with fastening clamp and close the supporting clamp
- Ensure the top supporting clamp rubber has the rounded end on the bottom which is supported in the taper of the fastening clamp

4
- The **fastening** clamp rests on the supporting clamp to achieve optimum sound decoupling

Note: Failure to install correctly may compromise acoustic performance
RAUPIANO PLUS
Pipe support - vertical stack

SD  To be installed per stack per floor near the top
    *If there is no acoustic requirements, replace SD bracket with fixing clamp

S   To be installed under the SD bracket every third floor
    *Installed tight onto pipe but not touching the wall

G   To be installed per stack per floor near the bottom
    If the floor to ceiling height is ≥4m, use an additional guiding clamp spaced 2m apart.

Note: Install RAUPIANO stack from bottom to top

- Although it is a good practice to install the sound-dampening bracket directly below the pipe socket, it is not necessary to do so as long as it is not installed on the socket itself.
- The guiding bracket permits free longitudinal movement of RAUPIANO PLUS pipe.
- For non acoustic installations, the sound dampening bracket can be replaced with a fixing/security clamp.

SD  - Sound-dampening bracket*
G   - Guiding clamp (loose)
S   - Security clamp (tight)
F   - Fixing clamp (tight)

* Magenta colour for illustration purposes only. Bracket colour is black.
Fixing clamps hold pipe in place. Guiding clamps allow for thermal expansion in one direction.

<table>
<thead>
<tr>
<th>Pipe size (DN)</th>
<th>Collar OD (mm)</th>
<th>Pipe thickness (mm)</th>
<th>Pipe ID (mm)</th>
<th>Maximum recommended bracket spacing (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>52.8</td>
<td>1.8</td>
<td>36.4</td>
<td>15 x OD (600mm)</td>
</tr>
<tr>
<td>50</td>
<td>62.8</td>
<td>1.8</td>
<td>46.4</td>
<td>15 x OD (750mm)</td>
</tr>
<tr>
<td>75</td>
<td>87.9</td>
<td>1.9</td>
<td>71.2</td>
<td>10 x OD (750mm)</td>
</tr>
<tr>
<td>110</td>
<td>125.6</td>
<td>2.7</td>
<td>104.6</td>
<td>10 x OD (1100mm)</td>
</tr>
<tr>
<td>160</td>
<td>180.7</td>
<td>3.9</td>
<td>152.2</td>
<td>10 x OD (1600mm)</td>
</tr>
</tbody>
</table>

If fitting prevents bracketing at 10 x D, reduce spacing.

G - Guiding clamp (loose)
F - Fixing clamp (tight)
- Don’t use sound-dampening bracket on horizontal lines.
- Install fixing clamp at socket end followed by guiding clamps until next joint.
- Install fixing clamp downstream, as near as possible to the socket end.
- Max bracket spacing can be increased for smaller pipes sizes, see page 17 for recommendation.
- If more than 3 fittings are joined together in the same line, ensure the group of fittings are sufficiently supported to avoid sagging, twisting and to prevent the connections from sliding apart.
- It is recommended to have a bracket either side of a raised inspection opening.

Whenever possible, bracket as close as possible to the socket-end and not onto socket.
Anchor brackets are also used when the distance between the ceiling and top of pipe is greater than 300mm.

Anchor points (i.e., anchor points or tri-brackets) are required in the following applications:
- Every 6m or less in a straight run; or
- Every 4m if temperature exceeds 60°C; or
- Every change in flow direction;
- All junctions where the branch pipe length exceeds 2m (normal applications) and 1m (where temperature exceeds 60°C);
- Where a branch enters a stack and where a stack rolls over.

This is a recommended solution and not seismic tested.

Providing fixed supports using tri-bracketing (Guiding clamps not shown in image)

Tri-bracketing plan view
L = Min. 2 m for normal applications,
Min. 1 m for applications where temperature will exceed 60 °C

Fixed bracket with Unistrut

Tri-brackets
RAUPIANO PLUS
Inspection opening access pipe and pipe cap

- RAUPIANO PLUS I.O access pipe is supplied with an insert to make the opening surface flush with the pipe inner diameter.
- The access cap has a threaded connection.
- The installation locations of inspection opening shall adhere to AS/NZS 3500.2.
- IO access pipe cannot be used to rise to surface.
- If this is required, use a DN110/87 deg. junction art #1450921

Pipe cap

- RAUPIANO PLUS pipe cap can be pushed into the built-in socket.

Securing clip

- To ensure that the pipe cap won’t be pushed out by the water pressure within the piping system, a securing clip is recommended to be installed together with the pipe cap.
RAUPIANO PLUS

Push-fit lock

RAUPIANO Push-Fit Lock

The RAUPIANO Push-Fit Lock increases the socket joint integrity by preventing the pipe from being pulled-out of the socket at higher load.

Push-Fit Lock Application

1. Stormwater Downpipe installed inside buildings up to a maximum pressure of 2 bar (20 m).
2. Connection of Pump stations up to a maximum pressure of 2 bar.
3. As an alternative solution, the Push-Fit Lock can be used to secure the socket plug, it would be used in replacement of using a securing clip.

For Pump station application, it is recommended to install the Push-Fit Lock around all sockets in horizontal and vertical pipework where the applied pump pressure may exceed 1 bar.

In stormwater applications it is recommended to install the Push-Fit Lock around all sockets in horizontal and vertical pipework in buildings of more than 10m in height.

In addition, the Push-Fit Lock can also be used to prevent the pipe from sliding apart during the installation phase.

It is easily installed and dismantled. The auto-locking assembly mechanism prevents it from falling off the pipe, even when the Push-Fit Lock has not been tightened yet.

Installation is simple, fast and secure. The necessary bolts and nuts are supplied together with the Push-Fit Lock.

Push-Fit Lock assembled on a socket
The P-trap siphon can be supported by attaching a hook into the built-in hole.

RAUPIANO PLUS P-trap siphon provides a 50 mm water seal to prevent foul odour from coming out of the drainage lines. The P-trap siphon is to be used in conjunction with a DN/OD 110 45° bend.

When installing this P-trap, it is important to install the pipe support properly to ensure safe operation of the drainage system.
RAUPIANO PLUS
Floor waste gully - installation

RAUPIANO PLUS Floor waste gully includes:
- 3-way riser (DN 110 floor inlet, 3 x DN50 inlets, DN75 outlet).
- Removable insert that creates a water sealing column for the "trap".
- The same push-fit joining method applies for all the inlets and outlet.

Drill hole for required inlets using 44mm hole saw

Assemble double socket over DN50 inlets

Floor waste gully art. no. 100391-001

Floor waste gully with double sockets on inlets

Note: Check and ensure that the baffle is firmly pushed down to the bottom after installation

Remove baffle to prevent damage whilst drilling the inlet holes.
Floor waste gully - Bracketing*

1. Install floor waste gully beneath slab by inserting over DN110 penetration.
2. Install socket of DN75 pipe over outlet.
3. Install DN50 pipe into socket of inlets.
4. Secure floor gully by installing fixed brackets on DN75 outlet and opposite DN50 inlet.
   (Attempt to bracket as close as possible to the FWG)

* The above schematic shows a general example and is not intended to satisfy the installation requirements for any particular project. Specific fire protection may or may not be required depending on building class and design, check with fire engineer and refer to the National Construction Code for detailed information.

For applications where the immediate bend is required, a 87° bend can be used in the direction of flow.
RAUPIANO PLUS
Installation advices

A. To reduce structure-borne noise and improve the acoustic performance of the drainage system, avoid direct contact between pipe and ceiling/wall materials by installing insulation layer within the penetration hole. When fire collars are used, check with the respective fire collar manufacturer on tested solutions of insulation layers that can be used to prevent sound transmission.

B. Wrap the drainage line with closed-cell insulation to avoid condensation, especially for storm-water application condensation may occur on the pipe surface. It is recommended to wrap all pipework where condensation could occur with closed-cell insulation materials.

C. For commercial kitchen with grease separator located at a distance, install pipe heat trace to prevent premature grease accumulation. Max. heat trace temperature is 65°C.
RAUPIANO PLUS
Connection to PVC pipe

If it is necessary to adapt to PVC systems which are manufactured according to AS/NZS 1260, the simple adaptor from RAUPIANO PLUS to PVC system is available. To install these adaptors, please adhere the following steps:

- apply primer and solvent cement to the PVC side of the adaptor
- insert the solvent-cemented portion into a female socket of PVC fitting
- apply REHAU lubricant to the other portion of the adaptor and insert into RAUPIANO PLUS socket

These adaptors are made of PVC and available for the following sizes:

<table>
<thead>
<tr>
<th>PVC adaptor</th>
<th>From</th>
<th>To</th>
<th>OD (mm)</th>
<th>OD (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN 40/40</td>
<td>DN 40</td>
<td>DN 40</td>
<td>40</td>
<td>43</td>
</tr>
<tr>
<td>DN 50/40</td>
<td>DN 50</td>
<td>DN 50</td>
<td>50</td>
<td>43</td>
</tr>
<tr>
<td>DN 50/50</td>
<td>DN 50</td>
<td>DN 50</td>
<td>50</td>
<td>56</td>
</tr>
<tr>
<td>DN 75/50</td>
<td>DN 75</td>
<td>DN 50</td>
<td>75</td>
<td>56</td>
</tr>
<tr>
<td>DN 75/65</td>
<td>DN 75</td>
<td>DN 65</td>
<td>75</td>
<td>69</td>
</tr>
</tbody>
</table>

Available adaptor sizes from RAUPIANO PLUS to PVC system
* For RAUPIANO sizes DN 110 and DN 160 a PVC adaptor is not required as they have the same OD as PVC.

PVC adaptor

<table>
<thead>
<tr>
<th>PVC adaptor</th>
<th>DN 40</th>
<th>DN 50</th>
<th>DN 65</th>
<th>DN 100, DN 150</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN 40 PVC fitting (female socket)</td>
<td>DN 50 PVC fitting (female socket)</td>
<td>DN 65 PVC fitting (female socket)</td>
<td>DN 100 / DN 150</td>
<td></td>
</tr>
<tr>
<td>DN 40/40 PVC adaptor (Art. No. 123009) (REECE code 1450706)</td>
<td>DN 50/50 PVC adaptor (Art. No. 123012) (REECE code 1450707)</td>
<td>DN 65/75 PVC adaptor (Art. No. 123016) (REECE code 1450708)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN 40 RAUPIANO PLUS pipe or fitting</td>
<td>DN 50 RAUPIANO PLUS pipe or fitting</td>
<td>DN 75 RAUPIANO PLUS pipe or fitting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN 40 PVC fitting (male spigot)</td>
<td>DN 50 PVC fitting (male spigot)</td>
<td>DN 110 / DN 160 RAUPIANO PLUS pipe or fitting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN 50/40 PVC adaptor (Art. No. 103525) (REECE code 1451089)</td>
<td>DN 75/50 PVC adaptor (Art. No. 103526) (REECE code 1451090)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN 50 RAUPIANO PLUS pipe or fitting</td>
<td>DN 75 RAUPIANO PLUS pipe or fitting</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**RAUPIANO PLUS**

Connection to other metal or plastic pipe

Drainage fittings to RAUPIANO PLUS

There are several options for connecting plumbing fixture drainage fittings or other pipe materials to RAUPIANO plus drainage pipes or fittings:
- RAUPIANO PLUS connection pipe
- RAUPIANO PLUS connection bend
- RAUPIANO PLUS fitting with beaded rubber nipple

1. Insert rubber nipple in the socket of the connection pipe.
2. Apply REHAU lubricant on the sealing lips of the rubber nipple.
3. Insert male end of drain fitting of plumbing fixture into the rubber nipple.

<table>
<thead>
<tr>
<th>Fixture trap</th>
<th>DN 40</th>
<th>DN 50</th>
<th>DN 50</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OD 32 - 40 mm metal pipe</td>
<td>OD 32 - 40 mm metal pipe</td>
<td>OD 47 - 50 mm metal pipe</td>
</tr>
<tr>
<td></td>
<td>DN 50/40 rubber nipple (Art. No. 126253) (REECE code 1450882)</td>
<td>DN 50/40 rubber nipple (Art. No. 126253) (REECE code 1450882)</td>
<td>DN 50/50 rubber nipple (Art. No. 121913) (REECE code 1450883)</td>
</tr>
<tr>
<td></td>
<td>DN 40/40 connection pipe (Art. No. 123164) (REECE code 1450752)</td>
<td>DN 50/40-30 connection pipe (Art. No. 121414) (REECE code 1450753)</td>
<td>DN 50/50 connection pipe (Art. No. 121424) (REECE code 1450754)</td>
</tr>
<tr>
<td></td>
<td>DN 40 RAUPIANO PLUS pipe or fitting</td>
<td>DN 50 RAUPIANO PLUS pipe or fitting</td>
<td>DN 50 RAUPIANO PLUS pipe or fitting</td>
</tr>
</tbody>
</table>
RAUPIANO PLUS fitting with beaded rubber nipple

1. Remove the installed sealing rubber from the pipe or fitting socket.
2. Insert rubber nipple with bead into the fitting socket.
3. Insert male end of the drain fitting of plumbing fixture into the rubber nipple.

For connection from other pipe system to RAUPIANO PLUS, for example from metal/plastic P-or S-trap

<table>
<thead>
<tr>
<th>Fixture trap</th>
<th>DN 40</th>
<th>DN 50</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OD 32 mm metal pipe</td>
<td>OD 32 mm metal pipe</td>
</tr>
<tr>
<td></td>
<td>DN 40/30 rubber nipple with bead</td>
<td>DN 50/30 rubber nipple with bead</td>
</tr>
<tr>
<td></td>
<td>(Art. No. 122923) (REECE code 1450884)</td>
<td>(Art. No. 122933) (REECE code 1450885)</td>
</tr>
<tr>
<td></td>
<td>DN 40 RAUPIANO PLUS pipe or fitting (without rubber ring)</td>
<td>DN 50 RAUPIANO PLUS pipe or fitting (without rubber ring)</td>
</tr>
</tbody>
</table>

Drainage fittings to RAUPIANO PLUS adaption
RAUPIANO PLUS
Connection to cast iron

Rubber sleeve adaptor for Cast Iron pipe or other materials

Rubber sleeve for same or different outer diameters.

Below are the properties of the rubber sleeve adaptor.

<table>
<thead>
<tr>
<th>Material</th>
<th>Rubber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tightening device</td>
<td>Stainless-steel worm-gear clamps</td>
</tr>
<tr>
<td>Recommended tightening torque</td>
<td>3 Nm (Newton metres)</td>
</tr>
<tr>
<td>Pressure resistance</td>
<td>1 bar</td>
</tr>
<tr>
<td>Chemical resistance</td>
<td>pH 2 - 12</td>
</tr>
</tbody>
</table>

Installation steps:
1. Insert RAUPIANO PLUS pipe end into one end of the rubber sleeve adaptor.
2. Insert Cast Iron / other material pipe end into the other end of the rubber sleeve adaptor.
3. Tighten the worm-gear clamps on both ends of the rubber sleeve adaptor without exceeding the maximum tightening torque.

For transition from RAUPIANO PLUS pipes to Cast Iron pipes or other materials for drainage systems, rubber sleeve adaptors can be used. These rubber sleeves come with rubber seal that is attached to the pipe ends and two stainless-steel worm-gear clamps. These rubber sleeve adaptors can be used in new construction or renovation works.

Metal and other pipe to RAUPIANO PLUS adaption
The leak test must be carried out in accordance with AS/NZS 3500.2

For pipes installed below ground, testing shall be conducted prior to the placement of the trench fill (backfill).

**Hydrostatic test**

The sanitary plumbing and sanitary drainage shall be filled with water -
(a) in the case of sanitary drainage, to a height of not less than 1m above the pipe soffit level at the highest point of the section being tested;
(b) in the case of sanitary plumbing, to the spill level of the highest fixture or to the flood level of the lowest sanitary fixture, whichever is higher; and
(c) in the case of pipe installed below ground, to a height not less than 2 m (or 20 kPa) above the pipe soffit level at the highest point of the section being tested or 2 m (or 20 kPa) above ground water table, whichever is the greater.

The pressure shall be maintained without leakage for at least 15 min. The source of any leak shall then be ascertained and any defects repaired. The section under test shall then be retested.

**Air Test**

Alternatively, the test can be carried out with air.

The air test is carried out with:
- Test pressure 15 kPa

1. Ensure firm and sealed seating of plugs.
2. Pipes ends should be secured with securing clips (see page 12) or push-fit locks
3. Pressurise the system and stabilize for a minimum of 3 minutes while checking for leaks
4. After pressure is stabilized commence the test by allowing the pressure to reduce to 10 kPa
5. Start test time and record drop in pressure during the test time
6. The section of sanitary plumbing or sanitary drainage being tested shall not have a drop in pressure greater than 3 kPa over the minimum test duration specified in Table 10.1

<table>
<thead>
<tr>
<th>Pipe size</th>
<th>Minimum test duration, min</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN 110</td>
<td>2  2  2  2  3  3</td>
</tr>
<tr>
<td>DN 160</td>
<td>3  3  3  6  6  6</td>
</tr>
</tbody>
</table>

*Minimum test duration for Air Test in minutes*
RAUPIANO PLUS system can be installed with suitable fire collars which have been tested and proven according to AS 1530.4 to fulfill the fire protection requirements from NCC/BCA.

Approved fire collar solutions for RAUPIANO PLUS pipe are available from the following manufacturers:

- Promat (1800 776 628 or www.promat.com.au)
- Ramset (1300 780 063 or www.ramset.com.au)
- Snap (1300 76 46 26 or www.snapcollars.com.au)
- Hilti (131 292 or www.hilti.com.au)

**IMPORTANT:** Not every fire collar is tested and approved with RAUPIANO PLUS

Contact the manufacturer of the fire collar for information on fire test results and assembly/installation instructions to determine which solution suits your requirements.

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* The above schematics show general examples and are not intended to satisfy the installation requirements for any particular project. Specific fire protection measures may or may not be required depending on building class and design, check with fire engineer and refer to the National Construction Code for detailed information.

* FWG fire collars may be different. Please check with fire collar manufacturer.
**RAUPIANO PLUS**

**Overview**

<table>
<thead>
<tr>
<th>Material</th>
<th>PP-MD mineral-reinforced (pipes and fittings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size range</td>
<td>DN 40 – DN 160</td>
</tr>
<tr>
<td>Area of application</td>
<td>Waste water pipes in buildings and laid below ground inside and outside the building structure</td>
</tr>
<tr>
<td>Chemical resistance</td>
<td>Polypropylene basis</td>
</tr>
<tr>
<td></td>
<td>in accordance with DIN 8078</td>
</tr>
<tr>
<td></td>
<td>No waste water containing benzene</td>
</tr>
<tr>
<td></td>
<td>Seats made of SBR</td>
</tr>
<tr>
<td></td>
<td>DIN 4060, DIN EN 681-1</td>
</tr>
<tr>
<td></td>
<td>Refer to RAUPIANO PLUS Installation and Technical Manual for chemical resistance data</td>
</tr>
<tr>
<td>Application</td>
<td>Waste water with ph value 2 – 12</td>
</tr>
<tr>
<td></td>
<td>Waste water temperature up to 95°C (brief periods) or 90°C (continuous load)</td>
</tr>
<tr>
<td></td>
<td>Installation temperature down to -10°C</td>
</tr>
<tr>
<td></td>
<td>Maximum head pressure 1 bar (10m) respectively 2 bar (20m) when using Push-fit Lock.</td>
</tr>
<tr>
<td></td>
<td>Design Service Life 50 years within these application parameters.</td>
</tr>
</tbody>
</table>

**Standards and approval**
- System test according to:
  - AS/NZS 7671, WM70060
  - AS 2887, WM71501
  - AS/NZS 1260, WM71502
  - AS/NZS 5065, WM71503
- System assessed according to:
  - BRANZ Appraisal No. 809
  - Best Environmental Practice PVC to AS/NZS 1260
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