



RAUPIANO PLUS

The versatile acoustic drainage and trade waste system
Installer guide

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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.

Pictograms and logos



Legal information



Important information



Information on the Internet



Advantage



RAUPIANO PLUS

System information

Inner layer:

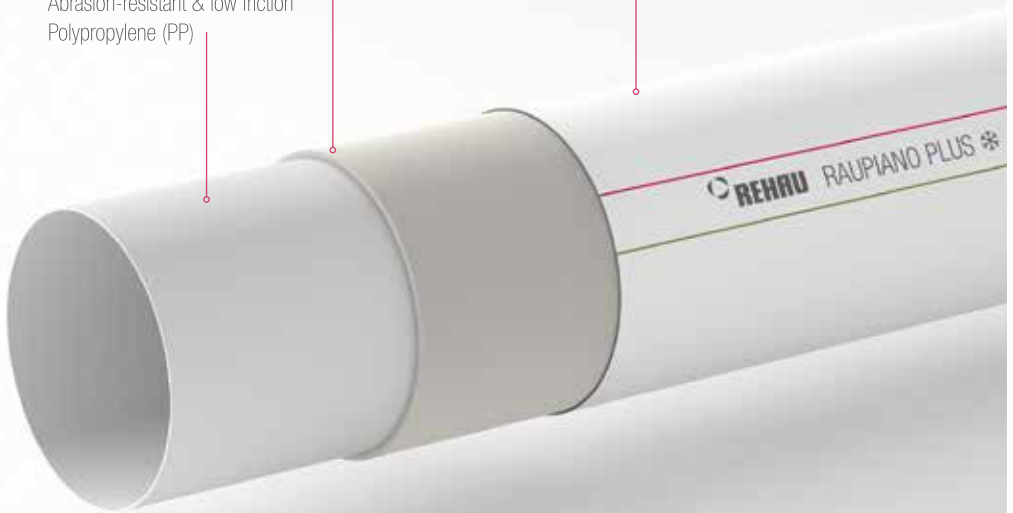
Abrasion-resistant & low friction
Polypropylene (PP)

Middle layer:

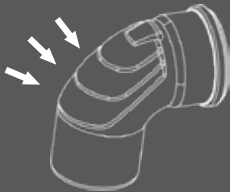
High-stiffness mineral
reinforced Polypropylene (PP)

Outer layer:

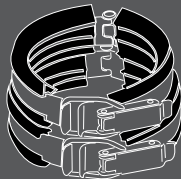
Impact-resistant Polypropylene (PP)



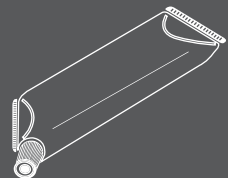
Sound absorbing bends



Rubber lined brackets



Lubricant



A man with a beard, wearing a red baseball cap and a red t-shirt, is holding a large white cylindrical acoustic insulation pipe. The pipe has some text and a barcode printed on it. The background is a blurred industrial or construction setting.

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

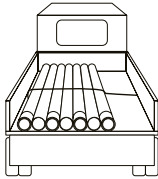
RAUPIANO PLUS

Transportation, storage and handling

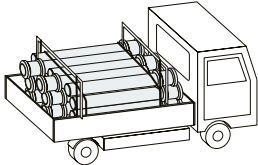
Transportation

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.

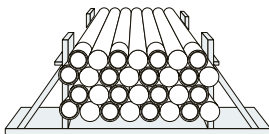
Correct transportation procedure



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

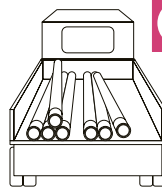


Alternate socket and pipe ends when loading pipe

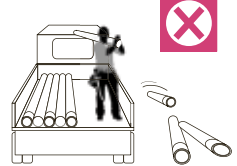
Storage

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

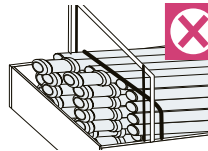
What not to do



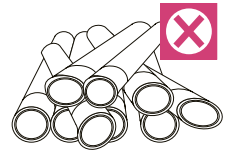
Do not throw pipe into the tray



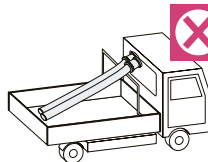
Do not throw pipe off the ute



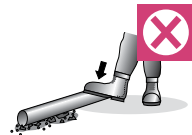
Do not over tighten with ratchet



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

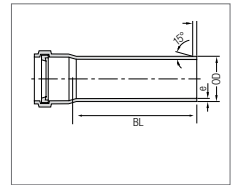
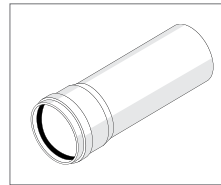
PVC		RAUPIANO PLUS	
DN	OD (mm)	DN	OD (mm)
40	43	40	40
50	56	50	50
65	69	75	75
100	110	110	110
150	160	160	160

Pipes

With push-fit socket and rubber sealing ring

Material: RAU-PP (mineral reinforced)

Colour: white



REHAU Article	DN/OD in mm	e	Length (mm) BL
123014	40	1.8	250
123024	40	1.8	500
123034	40	1.8	1000
123054	40	1.8	3000
120104	50	1.8	250
120114	50	1.8	500
120134	50	1.8	1000
120934	50	1.8	3000
120184	75	1.9	250
120194	75	1.9	500
120214	75	1.9	1000
120944	75	1.9	3000
120264	110	2.7	250
120274	110	2.7	500
120294	110	2.7	1000
120324	110	2.7	3000
122954	160	3.9	500
121664	160	3.9	1000
121684	160	3.9	3000

RAUPIANO PLUS

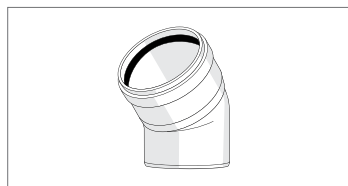
Product list

Bend

With rubber sealing ring

Material: RAU-PP (mineral reinforced)

Colour: white



REHAU Article	DN/OD in mm	Angle
123064	40	15°
121094	50	15°
121144	75	15°
123424	110	15°
123092	160	15°
123074	40	30°
121104	50	30°
121154	75	30°
123434	110	30°
123096	160	30°
123084	40	45°
121114	50	45°
121164	75	45°
123444	110	45°
124028	160	45°
100255 ⁽¹⁾	40	87°
100276 ⁽¹⁾	50	87°
100278 ⁽¹⁾	75	87°
100259 ⁽¹⁾	110	87°
124029	160	87°

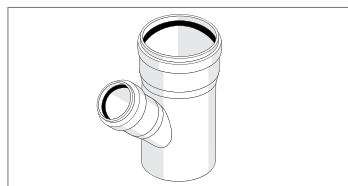
Note: ⁽¹⁾ Swept bend

Single Branch junction

With rubber sealing ring

Material: RAU-PP (mineral reinforced)

Colour: white



REHAU Article	DN/OD in mm	Angle
123104	40/40	45°
121234	50/50	45°
121264	75/50	45°
121294	75/75	45°
121304	110/50	45°
121334	110/75	45°
122984	110/110	45°
124037	160/110	45°
124038	160/160	45°
123114	40/40	87°
121254	50/50	87°
121284	75/50	87°
121544	75/75	87°
121324	110/50	87°
121344	110/75	87°
123005 ⁽¹⁾	110/110	87°
124069	160/110	87°
124077	160/160	87°

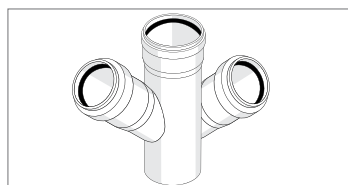
Note: ⁽¹⁾ Swept angle

Double Branch junction

With rubber sealing rings

Material: RAU-PP (mineral reinforced)

Colour: white



REHAU Article	DN/OD in mm	Angle
122964	110/110/110	45°
123076	160/110/110	45°

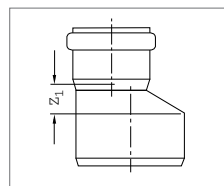
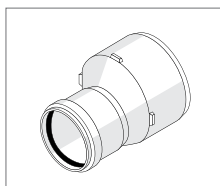
RAUPIANO PLUS

Product list

Reducer with rubber sealing ring

Material: RAU-PP (mineral reinforced)

Colour: white

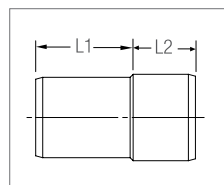
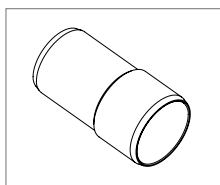


REHAU Article	DN/OD in mm	Z ₁ (mm)
123124	50/40	12
121384	75/50	20
121394	110/50	40
121404	110/75	26
124039	160/110	33

PVC Adaptor

Material: PVC

Colour: white

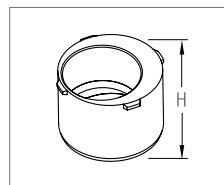
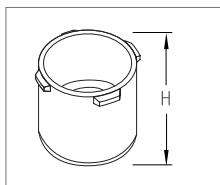


REHAU Article	RAUPIANO DN/OD in mm	PVC DN	L ₁ (mm)	L ₂ (mm)
123009	40	40	47	31
123012	50	50	48	34
123016	75	75	43	51

PVC Adaptor Bush

Material: PVC

Colour: white



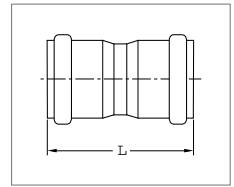
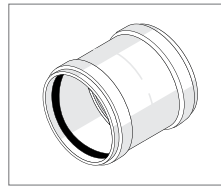
REHAU Article	RAUPIANO DN/OD in mm	PVC DN	H (mm)
103525	50	40	48.5
103526	75	50	54.9

Double Socket

With rubber sealing rings

Material: RAU-PP (mineral reinforced)

Colour: white



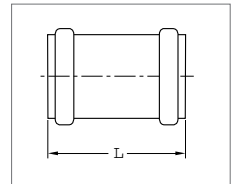
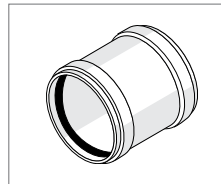
REHAU Article	DN/OD in mm	L (mm)
123144	40	89
121484	50	93
121584	75	111
121494	110	128
124047	160	148

Slip-on Socket

With rubber sealing rings

Material: RAU-PP (mineral reinforced)

Colour: white



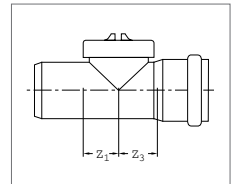
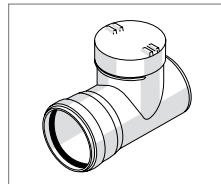
REHAU Article	DN/OD in mm	L (mm)
123154	40	89
121504	50	93
121574	75	111
121514	110	128
124048	160	148

I.O. Access Pipe

With surface-flushing insert and screwed cap and rubber sealing ring

Material: RAU-PP (mineral reinforced)

Colour: white



REHAU Article	DN/OD in mm	Z ₁ (mm)	Z ₃ (mm)
121039	50	28	30
123079	75	40	43
121534	110	57	62
124049	160	83	89

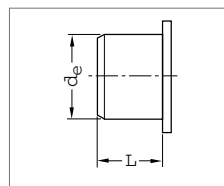
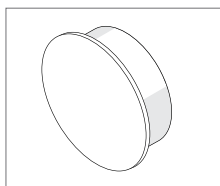
RAUPIANO PLUS

Product list

Socket Plug

Material: RAU-PP (mineral reinforced)

Colour: white



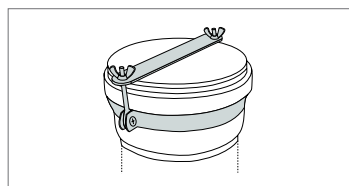
REHAU Article	DN/OD in mm	L (mm)
123134	40	33
121454	50	34
121464	75	35
121474	110	37
123106	160	49

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



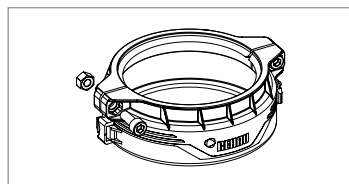
REHAU Article	DN in mm
123000	110
123002	160

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: Polyamide

Color: Black



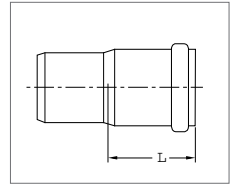
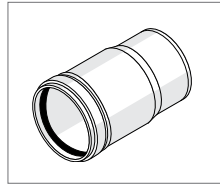
REHAU Article	ID in mm
100659	40
100661	50
100662	75
100664	110
102946	160

Long Socket

With rubber sealing ring

Material: RAU-PP (mineral reinforced)

Colour: white



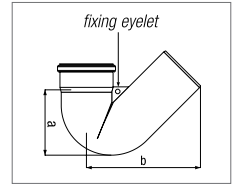
REHAU Article	DN/OD in mm	L (mm)
121594	110	130

P-trap siphon / 110mm disconnecter gully

To be used together with DN 110 bend 45°. With rubber sealing ring and fixing eyelet.

Material: RAU-PP (mineral reinforced)

Colour: white



REHAU Article	DN/OD in mm	a (mm)	b (mm)
123039	110	142	251

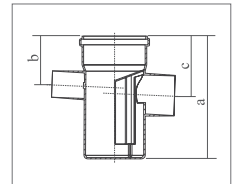
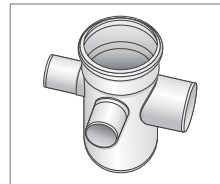
Floor Waste Gully

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



REHAU Article	DN/OD in mm	a (mm)	b (mm)	c (mm)
100391	50/50/50/75	222	87	105

RAUPIANO PLUS

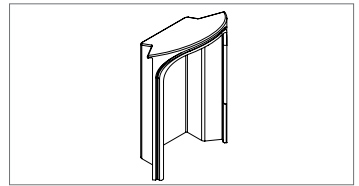
Product list

Baffle (spare part)

Removable baffle for RAUPIANO PLUS floor gully with rubber sealing to provide air-tightness

Material: ABS

Color: white



REHAU Article

102226

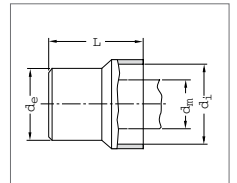
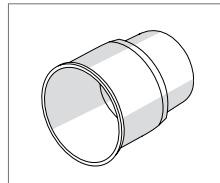
Connection Pipe

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



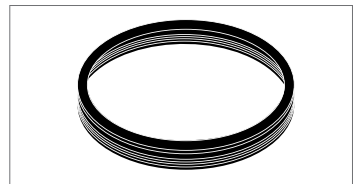
REHAU Article	DN/OD in mm	Metal pipe outer d_m	d_g (mm)	d_f (mm)	L (mm)
123164	40/40-30	32 - 40	40	53.7	63
121414	50/40-30	32 - 40	50	53.7	61
121424	50/50	47 - 50	50	67.2	50

Rubber Sealing Ring

For pipe and fitting sockets

Material: rubber

Colour: black



REHAU Article	OD in mm
128243	40
128013	50
128023	75
128033	110
128053	160

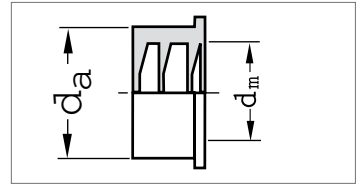
Rubber Nipple

For connection to other pipe materials. To be used together with connection pipe.

Material: rubber

Colour: black

Application: refer to page 38



REHAU Article	DN in mm	Metal pipe outer d_m	d_a (mm)
126253	50/40	32 - 40	55
121913	50/50	47 - 50	68

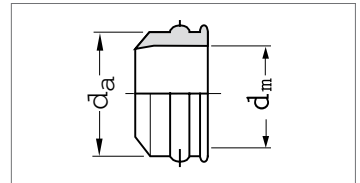
Rubber Nipple with Bead

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



REHAU Article	DN in mm	d_a (mm)	Metal pipe outer d_m
122923	40/30	40.5	32 - 40
122933	50/30	50.5	32 - 40
122943	50/40	50.5	47 - 50

Lubricant

For push-fit connections



REHAU Article	Size
128943	250 g
128953	500 g

RAUPIANO PLUS

Product list

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



REHAU Article	DN in mm
122004	75
122014	110
122034	160

Guiding Clamp

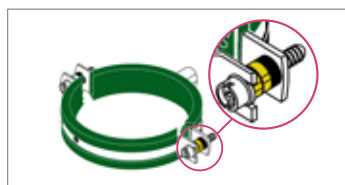
With rubber lining and distance piece

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



REHAU Article	DN in mm
122654	40
120534	50
120019	75
120027	110
120057	160

Fixing/Security Clamp

With rubber lining

Material: galvanised strip steel

Colour: Black

Application: Fixing clamp and security clamp. Refer to Chapter 7



REHAU Article	DN in mm	Adjustable Range (mm)
122644	40	38-43
120504	50	50-56
120026	75	70-76
120029	110	108-116
120049	160	159-168

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.

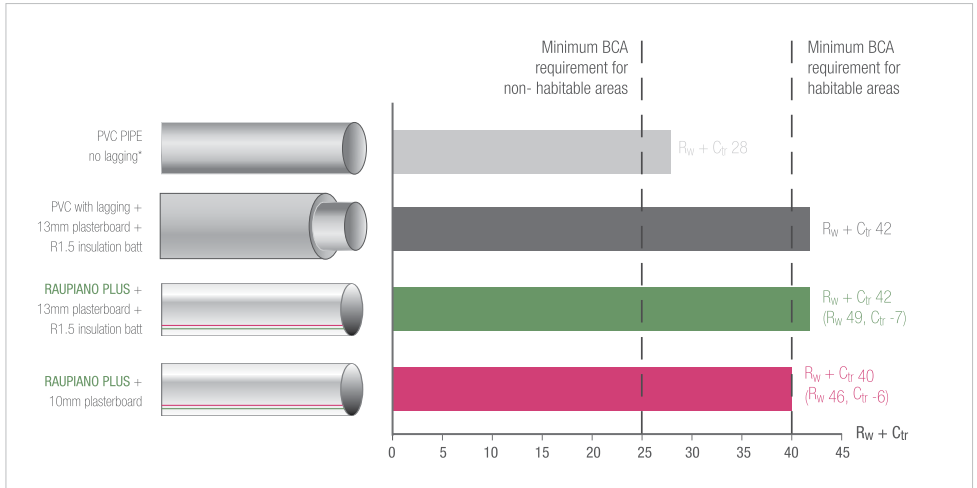
For lengthy grease waste lines, the use of pipe trace heating may be necessary. This prevents premature grease accumulation. The temperature of the pipe trace heating suitable for plastic pipes may not exceed 65°C.

RAUPIANO PLUS

Acoustic performance



RAUPIANO PLUS pipe system exceeds the $R_w + C_{tr} 40$ 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.



Acoustic testing

** Boral Selector + Feb 2009 - System WP13, 13mm std core plasterboard with insulation (Graeme E Harding & Associates)*

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_{Amax} and the L_{Aeq} values are more of important values than $R_W + C_{Tr}$.

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 $R_W + C_{Tr}$ 40 (R_W 46) with 10 mm plasterboard. That means RAUPIANO PLUS satisfies BCA’s 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.

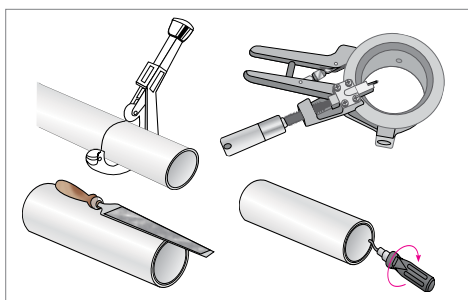
RAUPIANO PLUS

Assembly procedure

3 Steps Installation

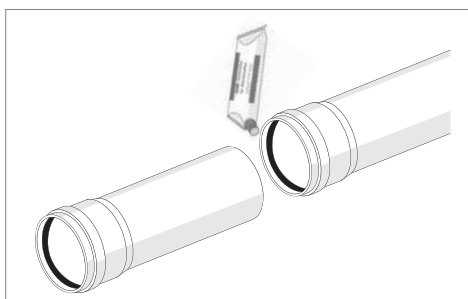
Step 1

Cut, chamfer and deburr



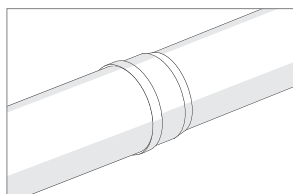
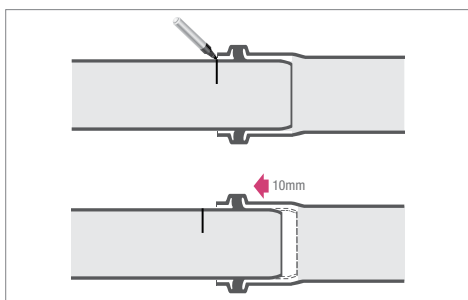
Step 2

Lubricate



Step 3

Push it in

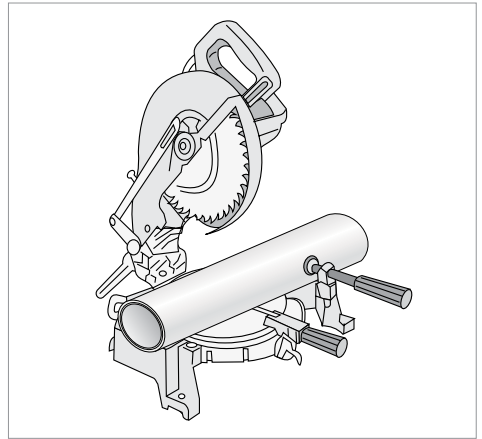
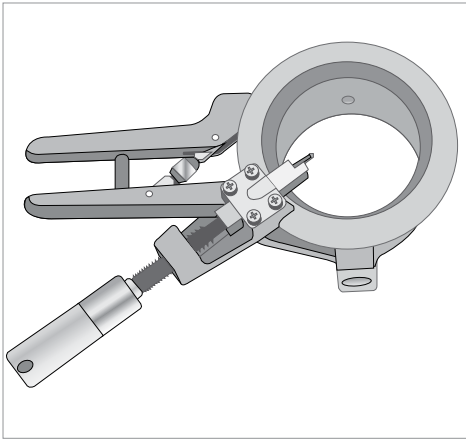
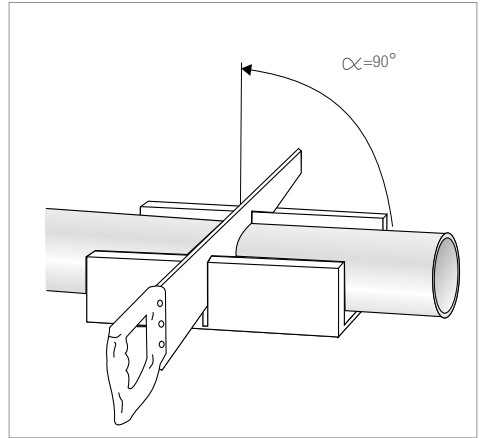
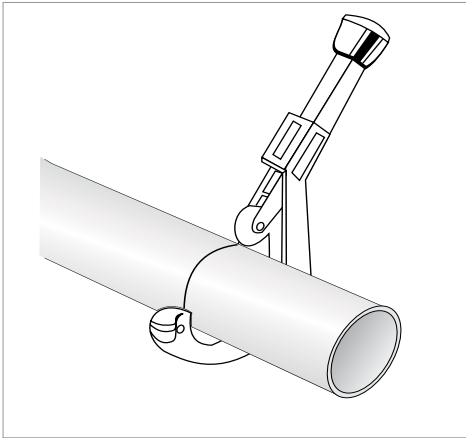


Pulling out is not required for:

- In ground installation
- Pipe length <500mm

RAUPIANO PLUS

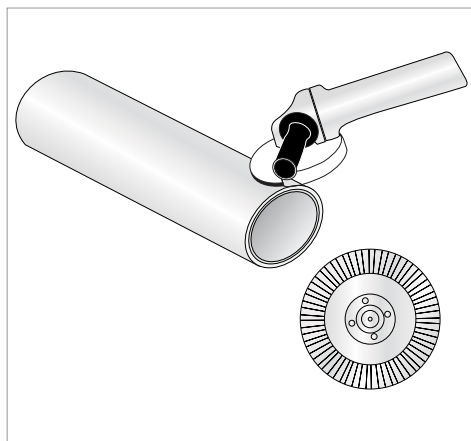
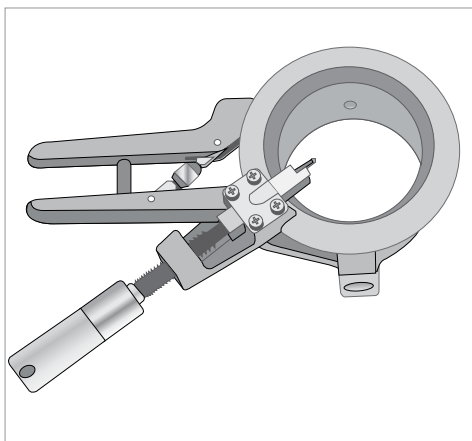
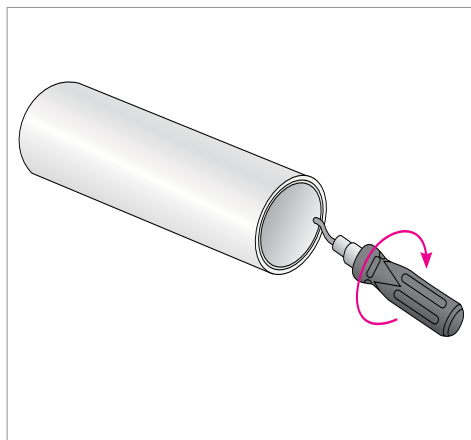
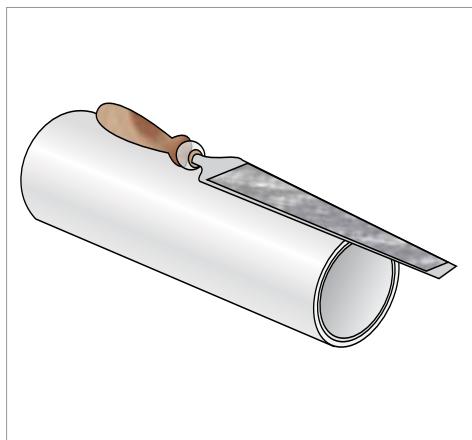
Joining process - cutting pipes



- 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.

RAUPIANO PLUS

Joining process - deburring and chamfering

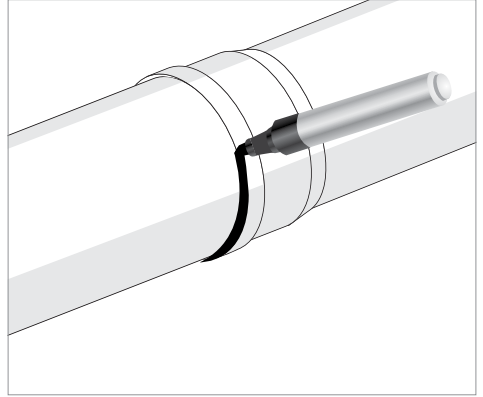


- 1 De-burr the inner diameter of the pipe.
- 2 For connections to push-fit socket pipe systems, taper the pipe ends with a tapering tool (i.e. Rothenberger Rocut cutter and chamfering tool 55020 DN 110 (Reece code: 7705255) or a coarse file at an angle of approximately 15°.

RAUPIANO PLUS

Push-fit joint

Pipe Assembly

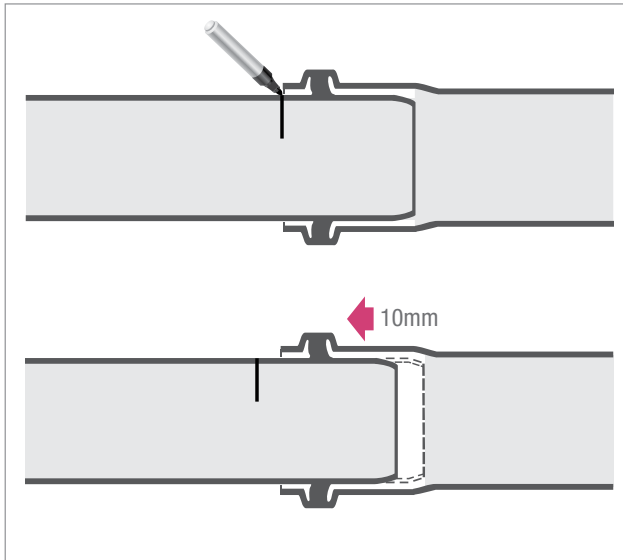


- 1 Clean dirt from sealing ring, socket interior and pipe end.
- 2 Use small amount of RAUPIANO lubricant (eg. a 10mm drop) to moisten chamfered pipe and O-ring then slide into the socket until it stops.
- 3 Mark inserted male end in this position at the socket edge with a pencil, pen etc.

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.

RAUPIANO PLUS

Joining process - withdraw 10mm



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.

RAUPIANO PLUS

Pipe support - brackets

Bracket types

SD



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

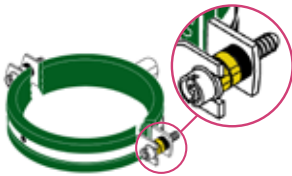
F



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

G



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.



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



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



- 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



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 $\geq 4\text{m}$, use an additional guiding clamp spaced 2m apart.

Note: Install RAUPIANO stack from bottom to top



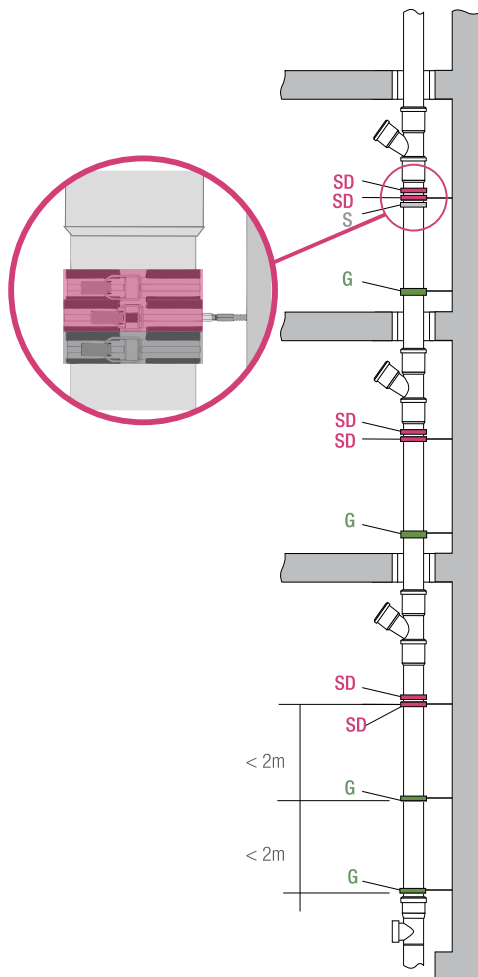
- Although it is a good practice to install the sound-dampening bracket directly below the pipe socket, it is not necessary to do so as long as it is not installed on the socket itself.
- The guiding bracket permits free longitudinal movement of RAUPIANO PLUS pipe.
- For non acoustic installations, the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

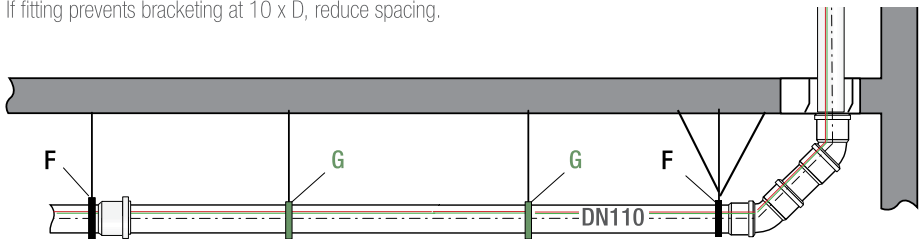
RAUPIANO PLUS

Pipe support - horizontal line

Fixing clamps hold pipe in place. Guiding clamps allow for thermal expansion in one direction.

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

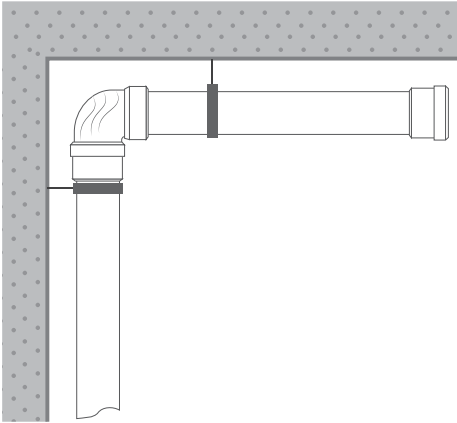
If fitting prevents bracketing at 10 x D, reduce spacing.



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.

RAUPIANO PLUS

Pipe support - anchor points

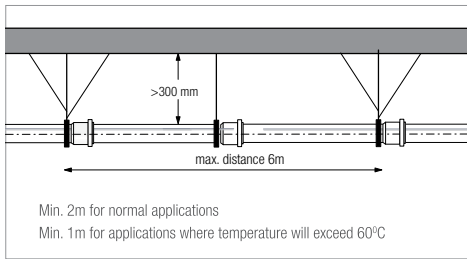
Anchor brackets are also used when the distance between the ceiling and top of pipe is greater than 300mm.

Anchor points (ie. anchor points or tri-brackets) are required in the following applications:

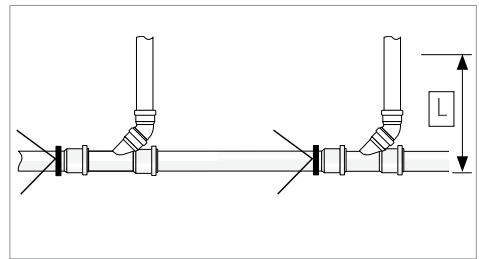
- Every 6m or less in a straight run; or
- Every 4m if temperature exceeds 60°C;
- Every change in flow direction;

- 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.

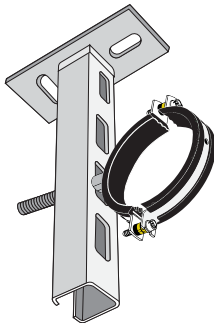


Providing fixed supports using tri-bracketing (Guiding clamps not shown in image)



Tri-bracketing plan view

$L =$ Min. 2 m for normal applications,
Min. 1 m for applications where temperature will exceed 60 °C



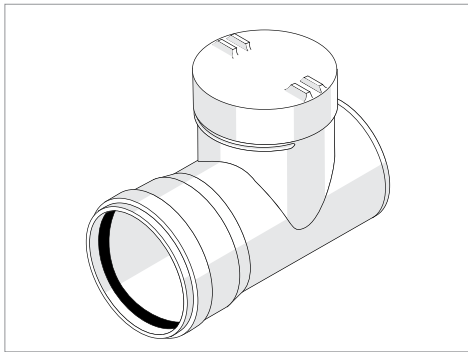
Fixed bracket with Unistrut



Tri-brackets

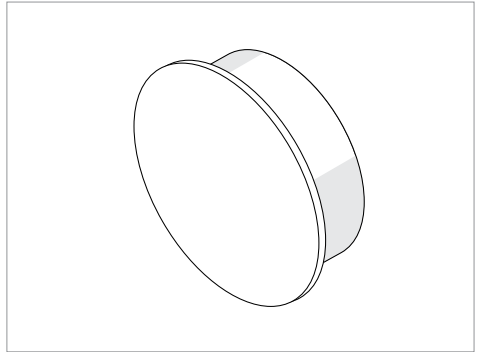
RAUPIANO PLUS

Inspection opening access pipe and pipe cap



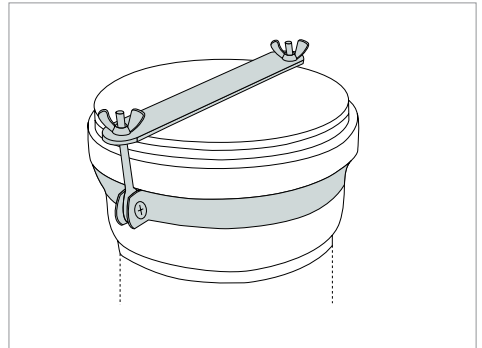
I.O. access pipe

- 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.



Push-Fit Lock assembled on a socket

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.

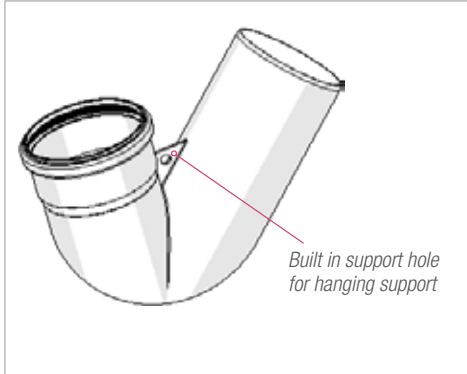
It is easily installed and dismantled. The auto-locking assembly mechanism prevents it from falling off the pipe, even when the Push-Fit Lock has not been tightened yet.

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

RAUPIANO PLUS

P trap siphon / 110mm disconnecter gully

P-trap siphon / 110mm disconnecter gully



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

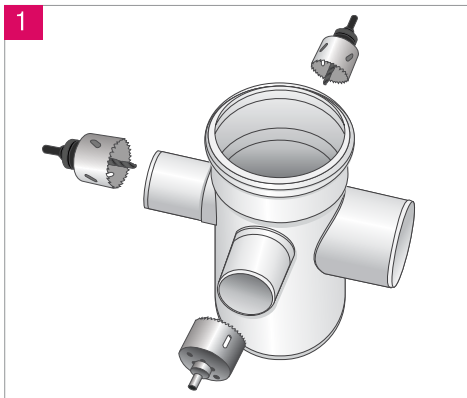
RAUPIANO PLUS Floor waste gully includes:

- 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.



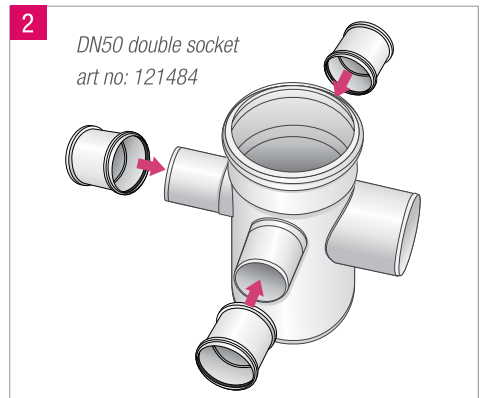
Remove baffle to prevent damage whilst drilling the inlet holes.

Drill hole for required inlets using 44mm hole saw



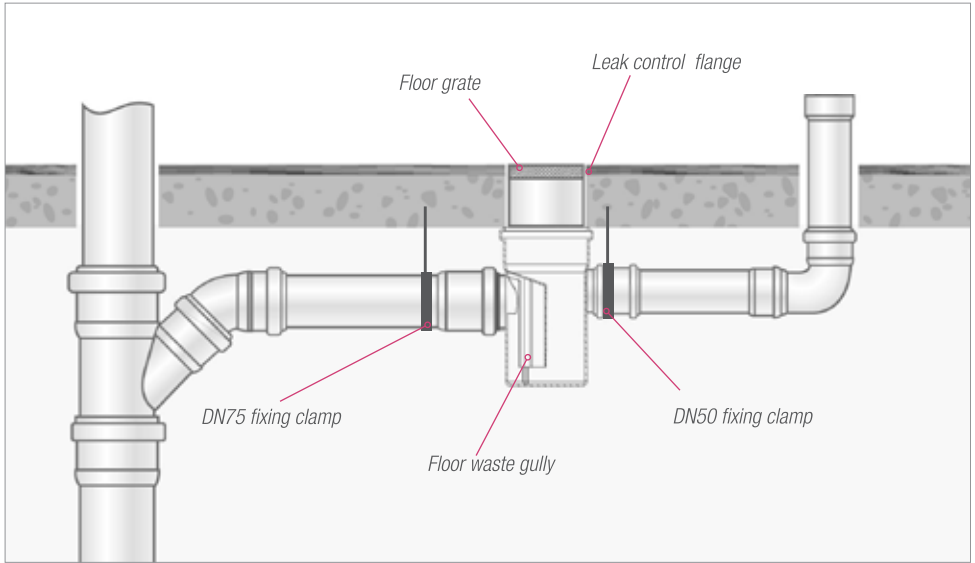
Floor waste gully art. no. 100391-001

Assemble double socket over DN50 inlets



Floor waste gully with double sockets on inlets

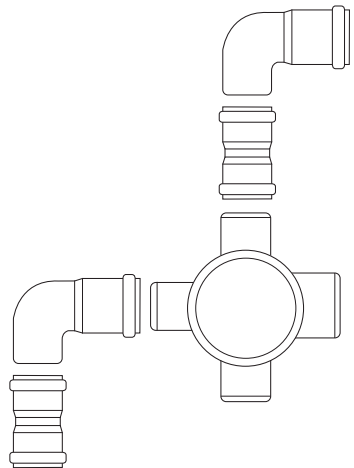
Note: Check and ensure that the baffle is firmly pushed down to the bottom after installation



*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.*

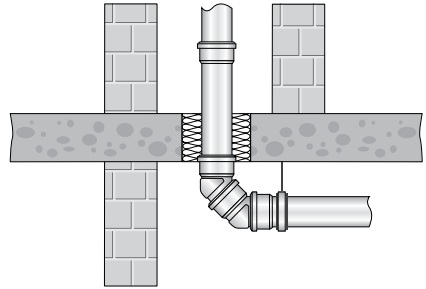


For applications where the immediate bend is required, a 87° bend can be used in the direction of flow

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:

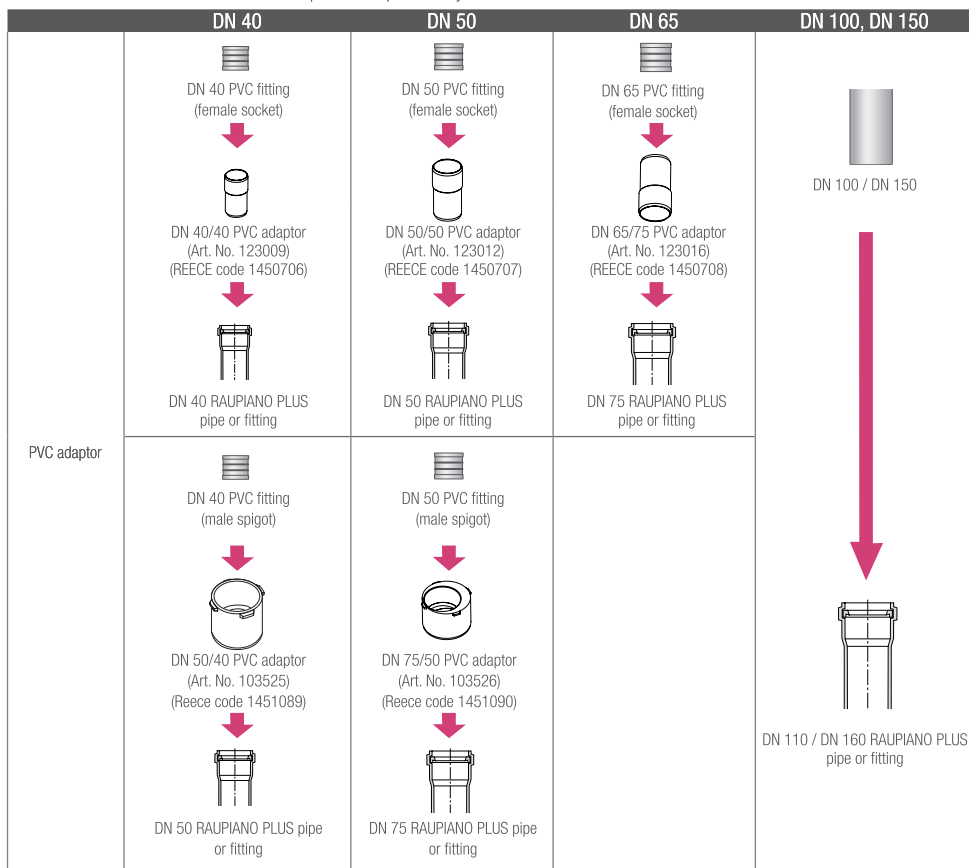
- apply primer and solvent cement to the PVC side of the adaptor
- insert the solvent-cemented portion into a female socket of PVC fitting
- apply REHAU lubricant to the other portion of the adaptor and insert into RAUPIANO PLUS socket

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

PVC adaptor	From		To	
	RAUPIANO PLUS	OD (mm)	PVC system	OD (mm)
DN 40/40	DN 40	40	DN 40	43
DN 50/40	DN 50	50	DN 40	43
DN 50/50	DN 50	50	DN 50	56
DN 75/50	DN 75	75	DN 50	56
DN 75/65	DN 75	75	DN 65	69

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.



RAUPIANO PLUS

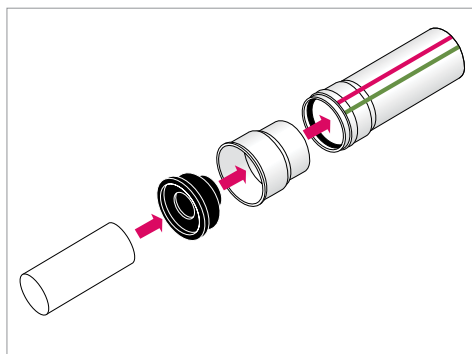
Connection to other metal or plastic pipe

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.



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

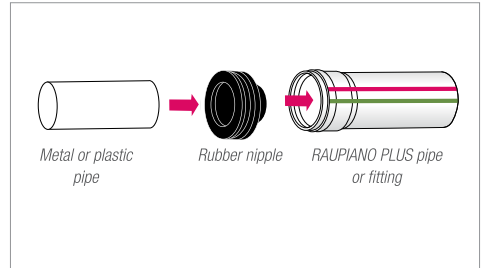
RAUPIANO PLUS

Connection to other metal or plastic pipe

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



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

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.

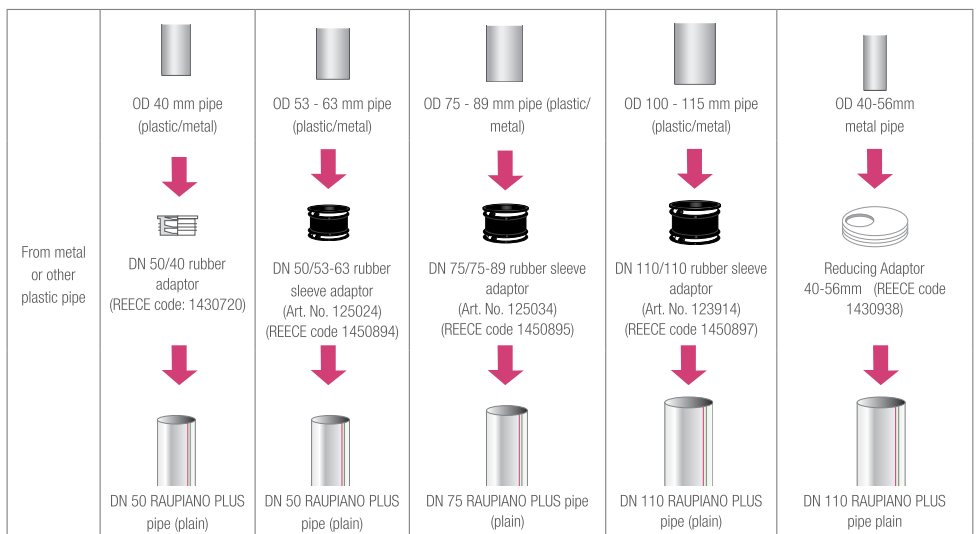
Below are the properties of the rubber sleeve adaptor.

Material	Rubber
Tightening device	Stainless-steel worm-gear clamps
Recommended tightening torque	3 Nm (Newton metres)
Pressure resistance	1 bar
Chemical resistance	pH 2 - 12

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

RAUPIANO PLUS

Leak test



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 1 m 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

Pipe size	Test Length (m)					
	50	100	150	200	250	300
DN	Minimum test duration, min					
110	2	2	2	2	3	3
160	3	3	3	6	6	6

Minimum test duration for Air Test in minutes

RAUPIANO PLUS

Fire protection solutions

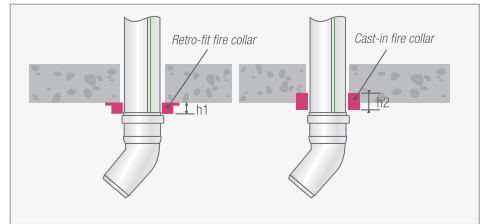
RAUPIANO PLUS system can be installed with suitable fire collars which have been tested and proven according to AS 1530.4 to fulfill the fire protection requirements from NCC/BCA.

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

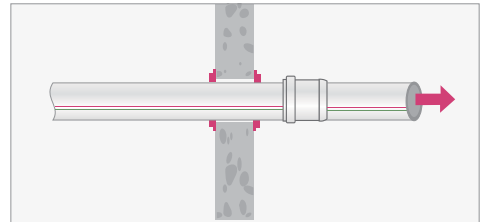
- Promat (1800 776 628 or www.promat.com.au)
- Ramset (1300 780 063 or www.ramset.com.au)
- Snap (1300 76 46 26 or www.snapcollars.com.au)
- Hilti (131 292 or www.hilti.com.au)

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.



Installation of fireproof collar in ceiling*



Installation of fireproof collar on wall*

** 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

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

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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Our warranty assumes consistent quality of our products in accordance with our specification and in accordance with our general conditions of sale.

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