



Engineering progress  
Enhancing lives

## **RAUPIANO PLUS plumbing system**

Quiet. Robust. Easy.





Unique Multi-layer Polypropylene (PP) System With Patented Sound Insulation Technology For Drainage Application to EN 1451-1, ISO 7671, AS/NZS 7671

# Live better with REHAU quality and innovation

REHAU was founded in Germany in 1948. Today, our proficiency in developing innovative solutions has made us a global leader in polymer processing technologies, providing a wide range of products and services to the Construction, Automotive and Industrial sectors. Through continuing research and development, REHAU consistently delivers cost-effective products designed with the environment in mind.

Stringent quality control and safety guidelines ensure that our products comply with the highest international standards. We take pride in our expertise and versatility to remain at the forefront of technology.

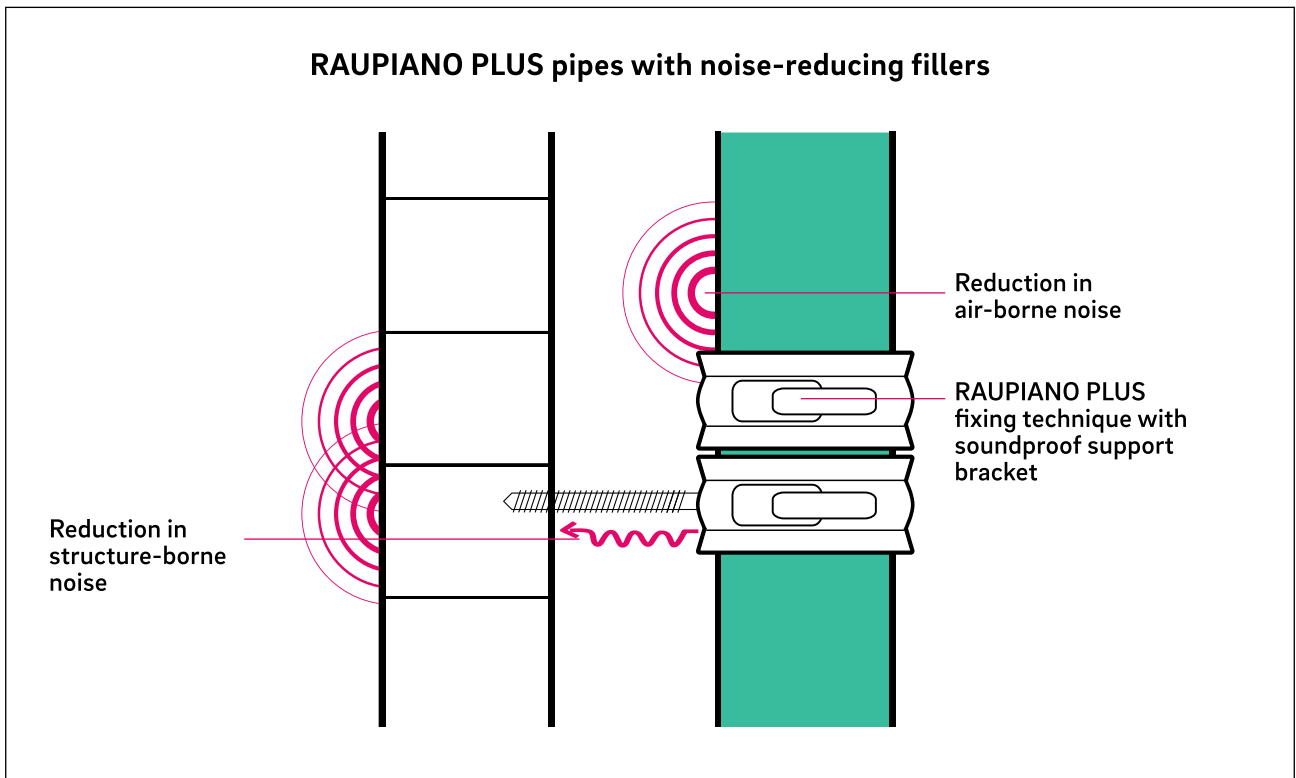
As an independent and privately owned company, REHAU focuses on building long-lasting partnerships and alliances with our customers.



# QUIET

## The best in sound insulation technology

Patented sound insulation technology that fulfills the highest requirements



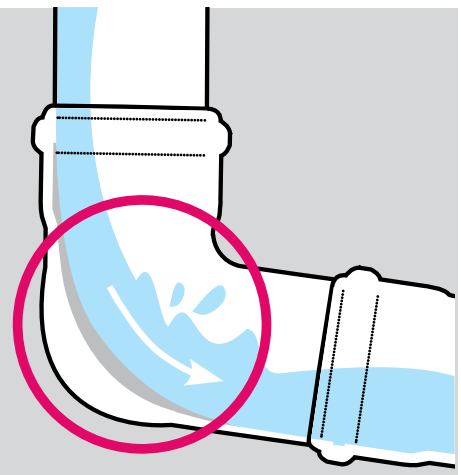
RAUPIANO PLUS tackles noise from all aspects; it reduces noise by cutting down the air-borne and structure-borne noise transmissions.

The patented sound-dampening bracket reduces the structure-borne noise transmission by decoupling the vibrations within the drainage line to the wall. The quick and simple snap-on installation ensures repeat performance of the sound-dampening effect by centralising the pipe, and applying the exact fastening force.

RAUPIANO PLUS pipes and fittings improve sound insulation performance through the innovative three-layer pipe and bend fittings with optimized mass concentration to further reduce air-borne noise transmission.

By combining these sound insulation technologies into one system, RAUPIANO PLUS is able to fulfil the highest requirements, making it the ideal solution for all types of buildings.

Specially designed bends with increased wall thickness reduce air-transmitted sound even further.





Proven by the officially accredited German institute "Fraunhofer-Institut für Bauphysik, Stuttgart", RAUPIANO Plus fulfils the requirements of DIN 4109 (sound insulation in buildings) and the far more stringent requirements of VDI guideline 4100 with excellent results.

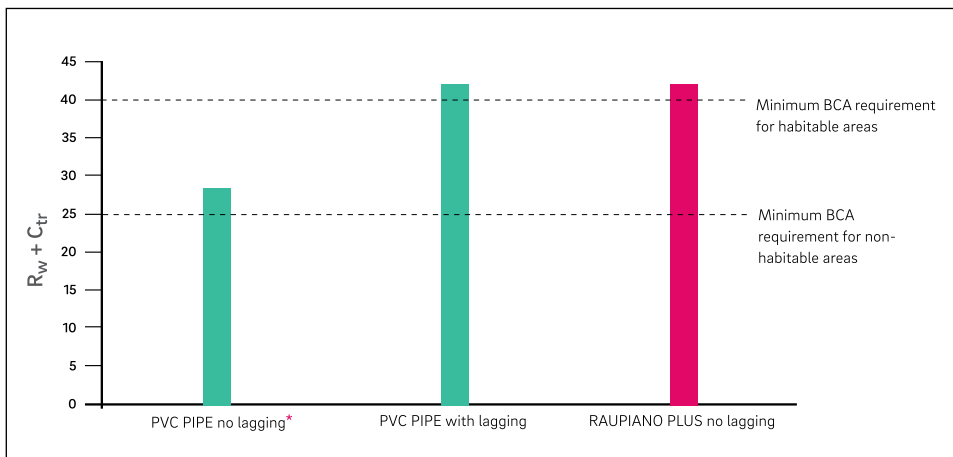



**No acoustic lagging required**

Vertical living has challenged the industry to develop innovative solutions to overcome potential problems caused by dense living space.

The National Construction Code (NCC) in Australia specifies a minimum acoustic requirement (R<sub>w</sub> + C<sub>tr</sub> 40) for living areas in apartments/town-houses. RAUPIANO PLUS exceeds this requirement without acoustic-lagging, using common suspended ceiling (13mm standard-core plasterboard with 75mm glasswool insulation batt).

RAUPIANO PLUS is the ultimate acoustic drainage piping system, endorsed by local acoustic consultants.

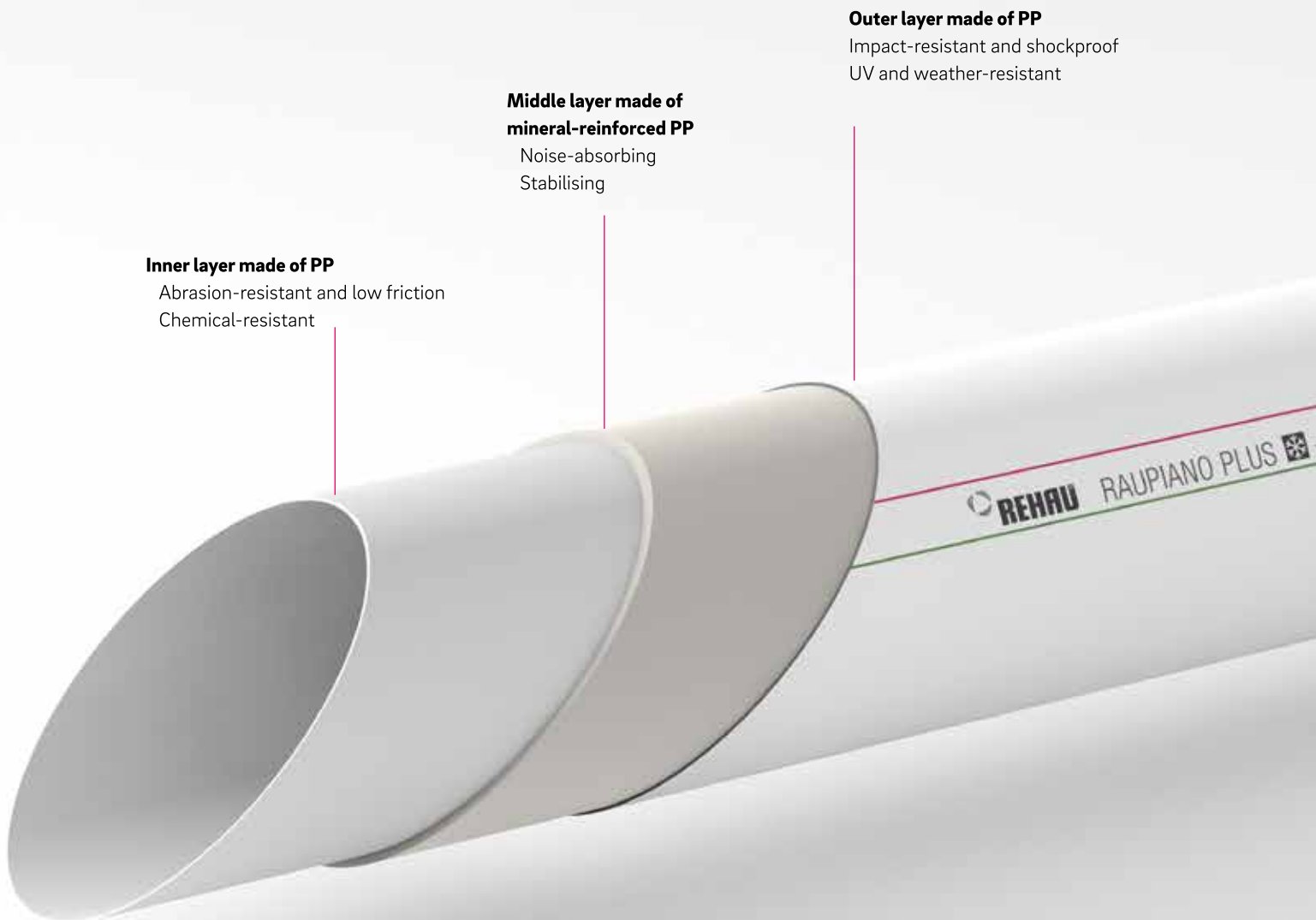
RAUPIANO PLUS' acoustic performance has been tested and proven in National Acoustic Laboratory (NAL) and deemed to be equivalent to acoustically-lagged PVC system.

\* Industry standard as recommended by Graeme E Harding & Associates  
Refer to REHAU RAUPIANO PLUS Technical Information for testing and material details

# ROBUST

## Before, during and after installation

### THREE LAYERS IN ONE HOMOGENEOUS PROCESS



**Inner layer made of PP**

Abrasion-resistant and low friction  
Chemical-resistant

**Middle layer made of mineral-reinforced PP**

Noise-absorbing  
Stabilising

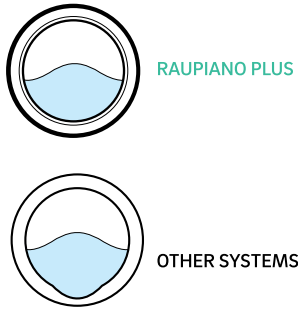
**Outer layer made of PP**

Impact-resistant and shockproof  
UV and weather-resistant



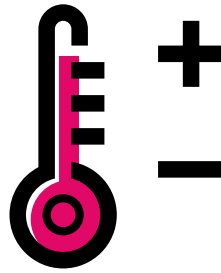
The innovative materials used in the 3 functional layers are integrated in one homogeneous process, ensuring toughness, rigidity. A special coating improves the flow conditions and maintains the high drainage-rate.

### ABRASION-RESISTANT



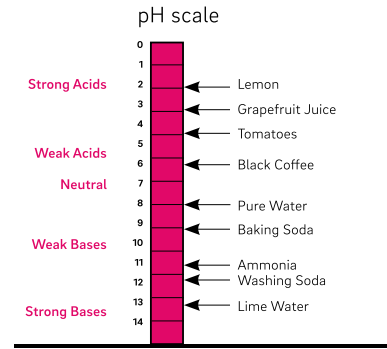
The smooth, abrasion-resistant inner layer ensures the pipes remain free of deposits and scaling. A special coating improves the flow conditions of the pipe systems to maintain the high drainage-rate of the RAUPIANO PLUS system.

### HEAT RESISTANT



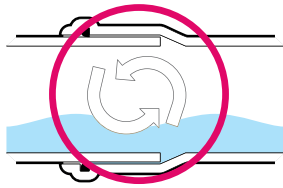
RAUPIANO PLUS can handle hot water up to temperature of 90°C (or 95°C for short periods), making it an excellent system for domestic and commercial kitchen applications.

### CHEMICAL RESISTANT



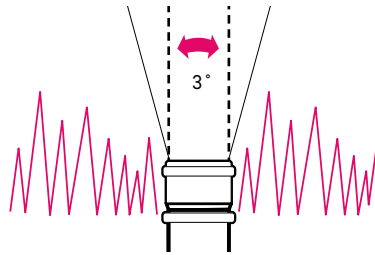
RAUPIANO Plus can be used in harsh environments because it is **highly resistant to various types of chemicals** and wastewater that cause corrosion and wear and tear. It can withstand chemicals ranging from pH2 to pH12.

### LEAKPROOF SYSTEM



The simple push-fit connection, combined with integrated sockets and factory pre-installed sealing rings which reduces workmanship fault of improper connection, ensures a leakage and odour-free environment.

### SHOCK AND VIBRATION PROOF



Rigid structures are prone to break due to vibrations. Additional flexibility is given to the drainage piping system by not gluing or welding the joints. The characteristic feature of RAUPIANO PLUS sealing ring provides not only air-tight and leak-proof connection but also a shock and vibration resistant joint. This can help to maintain pipe integrity in the event of an earthquake.

**4X**  
lighter than  
cast iron



### GREEN, NON-TOXIC AND ODOURLESS

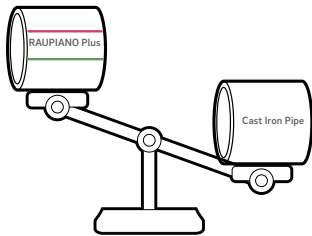
RAUPIANO PLUS system leaves small carbon footprint as it takes less energy to fabricate from raw material to final product. Polypropylene (PP) material used to make RAUPIANO PLUS is 100% recyclable and contains no toxic material. It stands for efficiency, innovation, protection of the environment and sets the future of forward-looking trends in construction.



# EASY

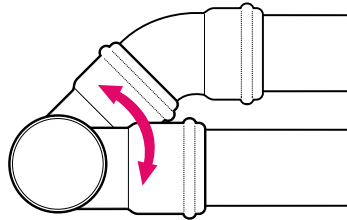
## Save time. Save cost.

### LIGHT AND CONVENIENT



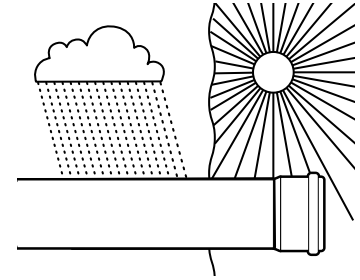
RAUPIANO Plus is **4 times lighter** than conventional cast iron pipes, **saving up to 20%** in transportation costs. The lightweight materials also dramatically improve safety in transportation and installation.

### ADJUSTABLE JOINT



The unglued connection allows the installed fitting to rotate, giving freedom to adjust it to the required angle for gradient and alignment.

### TOUGHNESS INSIDE AND OUT

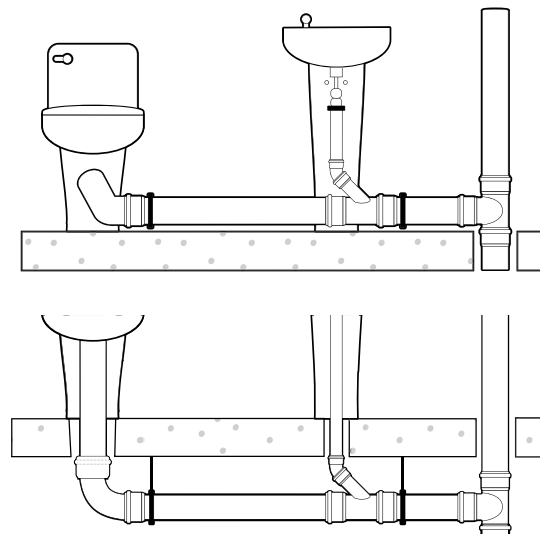


Characterised by its high-impact toughness, **shock resistance and durability against inclement weather, the UV-stabilised outer layer** makes outdoor storage possible for up to 2 years.

### INSTALLATION FREEDOM

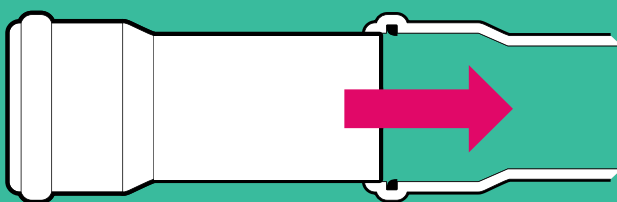
The secured push-fit socket connection gives freedom to design any type of drainage system and is **an ideal solution for wall-drainage system where leak-proof and maintenance-free joints are critical.**

This design flexibility allows for fewer structural limitations and widens installation possibilities.



RAUPIANO PLUS is suitable for either wall or floor drainage systems.

**30%**  
faster  
installation



### QUICK AND EASY INSTALLATION

RAUPIANO PLUS system uses push-fit connection with integrated sockets and specially designed sealing rings, ensuring watertight system. The simple and easy-to-use push-fit design ensures error-free connection and reduces installation time by up to 50%. \*\*

\*\* German Research Guild SSH Munchen 2005 compared to cast-iron pipes

# RAUPIANO PLUS

## Engineered for your convenience

Patented  
mounting  
technology



### RAUPIANO PUSH-FIT LOCK

In case a higher pressure resistant is needed for RAUPIANO system such as connection to pump station, the RAUPIANO Push-fit Lock is a perfect solution to increase the socket joint integrity to resist up to a maximum pressure of 2 bar.

The Push-fit Lock is designed also to allow the secured joint to continue absorb linear thermal expansion on the pipe. It can be used as an alternative solution to secure the socket plug from using a securing clip.

Quick installation is allowed, thanks to the unique auto-locking mechanism that makes the assembly easier during installation as it prevents the parts fall apart before tightening the screws.

### FIRE PROTECTION

RAUPIANO PLUS also offers a complete solution for fire protection. When it comes to safety, REHAU will not compromise.

Refer to RAUPIANO PLUS technical information and contact your local REHAU sales office for more information on RAUPIANO PLUS fire protection solution.



### PATENTED SOUND-DAMPENING BRACKET ISOLATES STRUCTURE-BORNE NOISE

The sound-dampening bracket consists of a rubber-lined guiding and fixing clamp, which work together effectively in decoupling vibrations from the drainage stack to the fixing wall. This significantly minimises structure-borne sound transmission to the installation wall.

# Technical Specification

## DIMENSION

Normal Size	40	50	75	90	110	125	160	200
Outer Diameter, mm	40	50	75	90	110	125	160	200
Inner Diameter, mm	36.4	46.4	71.2	85.6	104.6	118.8	152.2	187.6
Wall Thickness, mm	1.8	1.8	1.9	2.2	2.7	3.1	3.9	6.2

## SPECIFICATION

<b>Material:</b>	Pipes and fittings: PP-MD mineral reinforced Sealing rings: Styrene butadiene rubber	
<b>Area of application</b>	Waste water pipes in buildings and laid underground inside and outside the building structure.	
<b>Chemical resistance:</b>	Basis: PP according to DIN 8078 No sewage containing petrol or benzene Sealing rings made of SBR	DIN 8078  DIN 4060, DIN EN 681-1
<b>Range of application:</b>	Sewage with pH-values 2 - 12 Sewage temperature up to 95°C (short-term) and 90°C (long-term) respectively Installation within the building structure Installation in underground at area subjected to no heavy load	DIN EN 12056 DIN 1986-100
<b>Density:</b>	Pipes: 1,9 g/ cm <sup>3</sup> Fittings: 1,1 to 1,9 g/ cm <sup>3</sup>	
<b>Linear expansion:</b>	0,09 mm/ mK	DIN 53752
<b>Ring stiffness:</b>	> 4 KN/ m <sup>2</sup>	DIN EN ISO 9969
<b>Tensile strength:</b>	> 16 N/ mm <sup>2</sup>	DIN EN ISO 527-3
<b>Elongation at break:</b>	approx. 150 %	DIN EN ISO 527-3
<b>E-Modulus:</b>	approx. 2700 N/ mm <sup>2</sup>	DIN EN ISO 527-2
<b>Pressure resistance:</b>	0,5 bar (5m water column)	
<b>Connections:</b>	Push-fit socket with factory pre-installed rubber sealing ring	
<b>Fire resistancy:</b>	Class E - normally flammable	BS EN 13501
<b>Standards:</b>	System tested on the basis of DIN EN 1451-1 Additional testing according to the requirements of the Deutsches Institut für Bautechnik (DIBt; Center of Competence in Civil Engineering), Berlin, Germany	
<b>Sound insulation:</b>	Tested according to DIN EN 14366 - Test report of the Fraunhofer Institute for Building Physics (IBP), Stuttgart, Germany P-BA 6/ 2006: max 17db(A) at 4L/sec with REHAU sound-proof bracket P-BA 176/ 2006: max 24 dB(A) at 4L/sec with standard bracket	
<b>Thermal load:</b>	The thermal load of RAUPIANO PLUS has been examined by MPA (Material Testing Institute): 14,992 KJ/kg.	

For more technical detail, please refer to REHAU RAUPIANO PLUS Technical Information, which can be viewed/downloaded on [www.rehau.com.sg](http://www.rehau.com.sg)



# Standards and Certification

## DIN 1054

Ground – Verification of the safety of earthworks and foundations

## DIN 1055 Part 2

Design loads for buildings; soil characteristics; specific weight, angle of friction, cohesion, angle of wall friction

## DIN 1986

Drainage systems on private ground

## DIN 4060

Pipe joint assemblies with elastomer seals for use in drains and sewers, requirements and tests

## BS EN 13501

Fire classification of construction products and building elements

## DIN 4109

Sound insulation in buildings

## DIN 4124

Excavations and trenches – Slopes, planking and strutting, breadths of working spaces

## DIN EN 476

General requirements for components used in discharge pipes, drains and sewers for gravity systems

## DIN EN 681

Elastomeric seals  
Material requirements for pipe joint seals used in water and drainage applications

## DIN EN 752

Drain and sewer systems outside buildings

## DIN EN 1451

Plastic piping systems for soil and waste drainage (low and high temperature) inside buildings - Polypropylene (PP)

## DIN EN 1610

Construction and testing of drains and sewers

## DIN EN 12056

Gravity drainage systems inside buildings

## VDI Guideline 4100

Sound insulation in residential buildings - Criteria for planning and assessment

## ISO 7671












Plastic piping systems for soil and waste discharge (low and high temperature) inside buildings – Polypropylene (PP)

## AS/NZS 7671

Plastic piping systems for soil and waste drainage (low and high temperature) inside buildings - Polypropylene (PP)

## QUALITY AND CERTIFICATION

RAUPIANO Plus meets international quality and regulatory standards, and is accredited by both international and national regulation bodies:

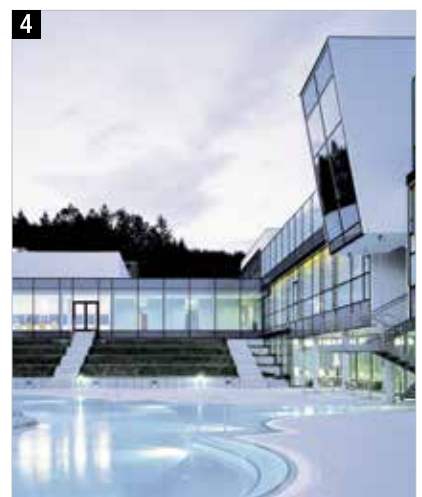
 <p>GERMANY</p>	 <p>POLAND</p>	 <p>MALAYSIA</p>	 <p>SWEDEN</p>
 <p>DENMARK</p>	 <p>AUSTRIA</p>	 <p>HUNGARY</p>	 <p>NORWAY</p>
 <p>FINLAND</p>	 <p>RUSSIA</p>	 <p>AUSTRALIA &amp; NEW ZEALAND</p>	

# RAUPIANO PLUS

## Project References



- 1 Queensland Children's Hospital  
*Australia*
- 2 Trans Luxury and Ibis Hotels  
*Indonesia*
- 3 Bulow Carre  
*Germany*
- 4 Nova Koflach Therme and Hotel  
*Austria*
- 5 Primoretz Grand Hotel and Spa  
*Bulgaria*
- 6 Olympic Village  
*Italy*









- 7 **Cape Royale**  
*Singapore*
- 8 **Park Inn Imeretinskaya Hotel**  
*Russia*
- 9 **Storan Theater**  
*Spain*
- 10 **Clarion Hotel Post**  
*Sweden*
- 11 **Indigo Hotel**  
*Thailand*
- 12 **Elite City-Sua Insatt**  
*Turkey*

# RAUPIANO PLUS Product Range



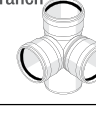






## RAUPIANO PLUS pipes

Description	Art. - No.	DN/length in mm
Pipe 	123004-004	40/150
	123014-004	40/250
	123024-004	40/500
	123054-400	40/3000
	120094-005	50/150
	120104-005	50/250
	120114-005	50/500
	120124-006	50/750
	120134-200	50/1000
	120934-200	50/3000
	120174-004	75/150
	120184-004	75/250
	120194-004	75/500
	120204-006	75/750
	120214-200	75/1000
	120944-200	75/3000
	123984-002	90/150
	123184-005	90/250
	123194-004	90/500
	123204-200	90/1000
	123224-200	90/3000
	120254-003	110/150
	120264-003	110/250
	120274-005	110/500
	120284-006	110/750
	120294-400	110/1000
	120324-400	110/3000
	120654-003	125/150
	120664-001	125/250
	120674-005	125/500
	120694-200	125/1000
	120724-400	125/3000
	122954-004	160/500
	121664-400	160/1000
	121684-400	160/3000
	123015-400	200/1000
123035-400	200/3000	


## RAUPIANO PLUS components


Description	Art. - No.	DN/length in mm
Bend 	123064-001	40/15°
	123074-001	40/30°
	123084-002	40/45°
	123094-001	40/87°
	121094-001	50/15°
	121104-002	50/30°
	121114-001	50/45°
	121124-002	50/67°
	121134-001	50/87°
	121144-001	75/15°
	121154-001	75/30°
	121164-002	75/45°
	121174-001	75/67°
	121184-001	75/87°
	123384-001	90/15°
	123394-001	90/30°
	123404-001	90/45°
	123414-001	90/87°
	123424-001	110/15°
	123434-001	110/30°
	123444-001	110/45°
	123454-001	110/67°
	123464-001	110/87°
	123474-001	125/15°
	123484-001	125/30°
	123494-001	125/45°
	123504-001	125/67°
	123514-001	125/87°
124028-001	160/45°	
124029-001	160/87°	
123097-001	200/45°	
123089-001	200/87°	
Single branch 	123104-001	40/40/45°
	123114-001	40/40/87°
	121234-001	50/50/45°
	121254-001	50/50/87°
	121264-001	75/50/45°
	121284-001	75/50/87°
	121294-001	75/75/45°
	121544-001	75/75/87°
	123274-001	90/50/45°
	123284-001	90/50/87°
	123834-001	90/75/45°
	123844-001	90/75/87°
	123294-001	90/90/45°
	123304-001	90/90/87°
	121304-001	110/50/45°
	121324-001	110/50/87°
	100257-001	110/90/45°
	100258-001	110/90/87°
	121334-001	110/75/45°
	121344-001	110/75/87°
122984-001	110/110/45°	
123005-001	110/110/87°	
120574-001	125/110/45°	
120594-001	125/110/87°	
120584-001	125/125/45°	
120604-001	125/125/87°	
124037-001	160/110/45°	


## RAUPIANO PLUS components


Description	Art. - No.	DN/length in mm
Single branch 	124069-001	160/110/87°
	123107-001	160/125/45°
	123108-001	160/125/87°
	124038-001	160/160/45°
	124077-001	160/160/87°
	123112-001	200/160/45°
	123119-001	200/160/87°
	123116-001	200/200/45°
Double branch 	123714-001	90/90/90/87°
	122964-001	110/110/110/45°
	121554-001	110/110/110/87°
	123594-001	125/110/110/45°
	123076-001	160/110/110/45°
123684-001	160/110/110/87°	
Corner double branch 	121564-003	110/110/110/87°
Shaft branch right 	123045-001	90/75/90/87°
	123761-001	110/75/110/87°
Shaft branch left 	123055-001	90/75/90/87°
	123771-001	110/75/110/87°
Parallel branch 	123734-002	90/90
	120564-003	110/110
Reducer 	123124-001	50/40
	121384-001	75/50
	123314-001	90/50
	123324-001	90/75
	121394-001	110/50
	121404-001	110/75
	121994-001	110/90
	120614-001	125/110
	124039-001	160/110
	123105-001	160/125
123102-001	200/160	
PVC adaptor 	123009-001	40/43
	123012-001	50/56
	123016-001	75/69
	123017-001	90/82
Straight nipple adaptor 	123164-001	40/40-30
	121414-001	50/40-30
	121424-001	50/50


**RAUPIANO PLUS components**


Description	Art. - No.	DN/length in mm
Elbow nipple adaptor 	123174-001	40/40-30
	122694-001	50/40-30
	121444-001	50/50


Description	Art. - No.	DN/length in mm
Socket plug 	123134-002	40
	121454-002	50
	121464-002	75
	123334-001	90
	121474-002	110
	120624-001	125
	123106-001	160
	123109-001	200

Description	Art. - No.	DN/length in mm
Double socket 	123144-001	40
	121484-001	50
	121584-001	75
	123344-001	90
	121494-001	110
	120474-001	125
	124047-001	160
	123098-001	200

Description	Art. - No.	DN/length in mm
Slip-on socket 	123154-001	40
	121504-001	50
	121574-001	75
	123354-001	90
	121514-001	110
	120464-001	125
	124048-001	160
	123099-001	200


Description	Art. - No.	DN/length in mm
Access pipe 	121039-001	50
	123079-001	75
	123364-001	90
	121534-003	110
	120634-001	125
	124079-001	160


Description	Art. - No.	DN/length in mm
Long socket 	123374-001	90
	121594-001	110


Description	Art. - No.	DN/length in mm
Closet bend 	121604-001	110/22°
	121614-001	110/45°
	121624-001	110/90°


Description	Art. - No.	DN/length in mm
Closet connection 	122934-001	90/250
	121634-001	110/150
	121644-001	110/250

**RAUPIANO PLUS components**

Description	Art. - No.	DN/length in mm
P-trap siphon 	123115-001	50
	123039-001	110


Description	Art. - No.	DN/length in mm
P-trap 	123059-002	110
	(with vent)	
	123069-002	110
	(without vent)	

Description	Art. - No.	DN/length in mm
Floor gully 	100391-003	50/50/50/75


Description	Art. - No.	DN/length in mm
Venting connection pipe 	123574-002	75/80


Description	Art. - No.	DN/length in mm
Flexible exhaust connector 	123824-001	75/90/110

**RAUPIANO PLUS mounting system**


Description	Art. - No.	DN/length in mm
Sound-dampening support bracket 	122004-100	75
	122044-100	90
	122014-100	110
	122024-100	125
	122034-100	160
	123924-001	200

Description	Art. - No.	DN/length in mm
Fixing/security clamp 	122644-001	40
	120504-001	50
	120026-001	75
	120047-001	90
	120029-001	110
	120048-001	125
	120049-001	160
	123934-001	200

Description	Art. - No.	DN/length in mm
Guiding clamp 	122654-001	40
	120534-001	50
	120019-001	75
	120055-001	90
	120027-001	110
	120056-001	125
	120057-001	160
	123944-001	200

Description	Art. - No.	DN/length in mm
Headless screw 	121074-002	M8
	121084-002	M10


**RAUPIANO PLUS fireproofing collar**

Description	Art. - No.	DN/length in mm
Fireproof collar REHAU compact 	122104-001	50
	122114-001	75
	122005-001	90
	122124-001	110
	122134-001	125


Description	Art. - No.	DN/length in mm
Fireproof collar REHAU PLUS 	121894-001	40-50
	121904-001	75
	121914-001	90
	121924-001	110
	121934-001	125
	121944-001	160
	121008-001	200


Description	Art. - No.	DN/length in mm
Fireproof collar REHAU angled 	120834-001	75
	120874-001	90
	120844-001	110
	120854-001	125

**Accessories**

Description	Art. - No.	DN/length in mm
Rubber sealing ring 	128243-002	40
	128013-002	50
	128023-002	75
	128003-001	90
	128033-002	110
	128043-003	125
	128053-003	160

Description	Art. - No.	DN/length in mm
Rubber nipple 	126253-002	50/40
	121913-003	50/50


Description	Art. - No.	DN/length in mm
Rubber nipple with bead 	122923-003	40/30
	122933-003	50/30
	122943-003	50/40

Description	Art. - No.	DN/length in mm
Rubber venting adaptor 	123067-001	50/56

Description	Art. - No.	DN/length in mm
Rubber sleeve adaptor 	125024-001	50/53-63
	125034-001	75/75-89
	123904-001	110/90
	123914-001	110/110

Description	Art. - No.	DN/length in mm
Securing clip 	123000-001	110
	123002-001	160
	123006-001	200

Description	Art. - No.	DN/length in mm
Lubricant 	176520-003	250 g
	172960-003	500 g

Description	Art. - No.	DN/length in mm
Push-fit lock 	100659-001	40
	100661-001	50
	100662-001	75
	100663-001	90
	100664-001	110
	100665-001	125
	102946-001	160
	102947-001	200



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Errors and changes are to be  
expected

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