




MODERN ENGINEERED  
DRAINAGE SYSTEM



# DECILO

LOW NOISE PP DRAINAGE SYSTEM

**25** YEARS  
WARRANTY

  
**12.9dB**  
@2lps

## INTRODUCING DECILO LOW-NOISE PP DRAINAGE SYSTEM

Crafted with precision by Prince Pipes, the DECILO Low-Noise PP Drainage System sets a new benchmark in quality and innovation. Made from advanced mineral-filled polypropylene, it offers superior strength, durability, and chemical resistance, ensuring reliable performance across diverse applications for years to come.

Engineered for modern infrastructure, DECILO's three-layer design reduces noise, enhances flow, and guarantees long-term efficiency. Backed by a 25-year warranty, it reflects Prince Pipes' unwavering commitment to trust, technology, and excellence, delivering a premium low-noise drainage solution built to last with superior material integrity.



**MADE IN INDIA**  
CERTIFIED BY FRAUNHOFER  
GERMANY

## DECILO - SYSTEM DESCRIPTION

DECILO Low Noise PP Drainage System is an innovative piping system crafted from mineral-filled polypropylene (PP) materials, tailored to tackle the toughest drainage and sewerage challenges. This system surpasses traditional piping by effectively addressing their limitations, offering a superior alternative. DECILO Low Noise PP Drainage System excels in mechanical, thermal, chemical, and acoustic performance, providing high-temperature resistance up to 90°C for long-term usage and 95°C for short-term usage and outstanding chemical resistance across a broad pH range right from pH 2 to pH 12.

Properties	UOM	Value
Material for Pipe	—	Inner & Outer layer PP. Middle layer Mineral filled
Material for Fitting	—	PP Mineral Filled
Material for Rubber seal	—	Styrene-Butadiene Rubber (SBR)
RAL Code	—	Blue 5012
<b>Product Range</b>	<b>mm</b>	<b>40mm, 50mm, 75mm, 110mm &amp; 160mm</b>
Density	g/cm <sup>3</sup>	1.45
Sound insulation @ 2lps	dB	13 as per DIN EN 14366, certified by Fraunhofer
Tensile Strength	MPa	18
Elongation at Break	%	40
Modulus of Elasticity	MPa	3000-3300
Coefficient of Linear Expansion	mm/mK	0.08
Ring Stiffness	kN/m <sup>2</sup>	> 6
Building material fire classification		B2 as per DIN 4102-1, certified by TUV Rheinland
Joining method	—	Ring seal sockets
Chemical resistance	—	Wastewater with pH 2-12
Operating Temperature	°C	Up to 90°C (continuous) & 95°C (intermittent),
Operating life	Years	50
Reference Standard	—	EN 1451-1, Series S16

## UNDERSTANDING NOISE IN DRAINAGE SYSTEMS

We are subjected to various types of sound all the time. Sound waves are the result of various compression waves that which cross the eardrum and are captured and transformed by the brain.

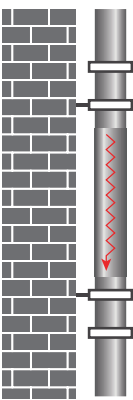
To propagate, a sound needs a medium: any means, whether solid, liquid or gas like air is able to transport sound, influencing its speed according to density. Sound is propagated through the exchange of air-solid vibrations.

## NOISE TRANSMISSION AND THE NEED FOR LOW-NOISE PIPING SYSTEMS

In drainage systems, especially in vertical soil and wastewater pipes, noise is generated by the flow of air, water, and solid particles inside the pipes. When these elements hit the walls of the pipes and fittings, they create vibrations. These vibrations travel through the pipe walls, clamps, and anchoring systems, eventually spreading to the building's structure. This noise then reaches the occupants, causing discomfort and disrupting peace at home.

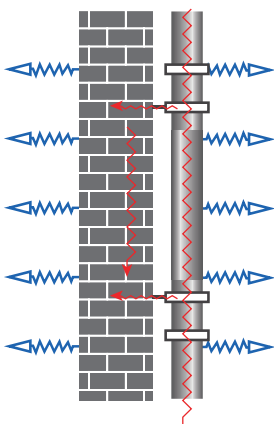
There are two main types of noise produced in drainage systems:

**Airborne Noise**



This is noise that travels directly through the air, reaching people as sound waves. For example, the sound of water rushing through pipes can be heard in nearby rooms.

**Structure-Borne Noise**



This occurs when vibrations from the pipes pass through the building's structure — like walls or floors — via direct contact (e.g., pipe clamps). The vibrating structure then radiates sound into the rooms, amplifying the disturbance.

## PIPE DIMENSIONS

Nominal Bore (mm)	Nominal Outside Diameter (mm)	Mean Outside Diameter		Wall Thickness	
		Minimum (mm)	Maximum (mm)	Minimum (mm)	
40	40.00	40.00	40.30	1.80	2.20
50	50.00	50.00	50.30	1.80	2.20
75	75.00	75.00	75.40	2.30	2.80
110	110.00	110.00	110.40	3.40	4.00
160	160.00	160.00	160.50	4.90	5.60

## THE 3-LAYER STRUCTURE OF LOW-NOISE PIPE

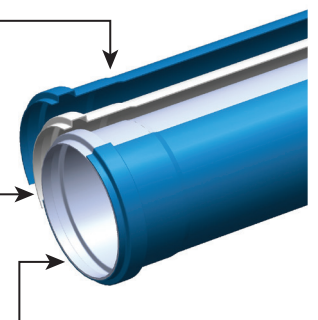
### OUTER LAYER -

Flame-retardant PP-B polypropylene ensures durability and resistance to external stresses and atmospheric conditions.



### MIDDLE LAYER - PP-MD

polypropylene provides superior strength, stiffness, and effective acoustic insulation, reducing noise transmission.

**INNER LAYER -** Durable PP-B polypropylene withstands up to +90 °C and resists chemicals, while its ultra-smooth surface prevents buildup for efficient waste flow.



# CERTIFICATION BY FRAUNHOFER:

Determination of the Acoustic Performance of a Wastewater Installation System in the Laboratory according to DIN EN 14366		P-BA 12/2026e																																													
		Results sheet 1																																													
<b>Client:</b>	PRINCE Pipes and Fittings Ltd., Haridwar-249402, Uttarakhand, India																																														
<b>Test specimen:</b>	Wastewater system made of plastic "PRINCE DECILO, PP/PP-MD/PP, DN110 x 3,4 mm" (manufacturer: PRINCE Pipes and Fitting Limited) with PP-MD fittings "PRINCE DECILO" (manufacturer: PRINCE Pipes and Fitting Limited) mounted with acoustic pipe clamps "BISMAT® 1000" made by Walraven GmbH. Test object no.: S 12254-01; see figure 4 and 5.																																														
<b>Test set-up:</b>	<p>The pipe system was mounted according to figure 4 and 5 (see also Annex A).</p> <p>- The pipe system consisted of straight wastewater pipes (nominal size OD 110), three inlet tees (~87,5°, swept), a 2 x 45° basement bend with ring seal socket "PRINCE DECILO" (manufacturer: PRINCE Pipes and Fitting Limited) and a horizontal drain section. The inlet tees in the basement and in the ground floor were closed by lids supplied by the manufacturer. According to DIN EN 14366 the air gaps between the tube and floor in the entrance and exit openings are stuffed with porous absorber in order to prevent any structure-borne sound bridges influencing the building.</p> <p><u>Pipe system:</u> "PRINCE DECILO, PP/PP-MD/PP, DN110 x 3,4 mm" (manufacturer: PRINCE Pipes and Fitting Limited). Three-layer pipes with ring seal socket and with shaped pipe sockets: PP/PP-MD/PP, wall thickness ~ 3,6 mm, weight ~ 1,67 kg/m, density ~ 1,4 g/cm³, values measured by IBP. One-layer PP-MD fittings: Material PP, wall thickness ~ 3,3 mm, density ~ 1,4 g/cm³, values measured by IBP. Plug connection of the pipes and fittings (shaped pipe sockets). The wastewater system was equipped with a basement bend "PRINCE DECILO" consisting of 2 x 45° bends and a horizontal drain section, length 100 cm (manufacturer: PRINCE Pipes and Fitting Limited). <u>Pipe clamps:</u> Acoustic pipe clamps, type: "BISMAT® 1000" (manufacturer: Walraven GmbH); structure-borne sound insulating support attachment consisting of "BISMAT® SL" guidance clamps and "BISMAT® SX" socket clamps. In each storey (EG and UG) respectively two clamps were installed. At the upper wall area one guidance clamp (SL, DN 100) was mounted. At the lower wall area one double clamp "BISMAT® 1000" consisting of support (guidance) clamp (SL, DN 100) and fixing (socket) clamp (SX, DN 100) was installed. To prevent contact to the pipe, the guidance clamps (SL) were mounted with 15 mm space between the locking tabs of the clamps (two 7,5 mm spacers on each side). The clamps were closed with a tightening torque of 2 Nm. The support/guidance clamps (SL) were fixed to the installation wall with an adjustable wall plate with dowels and thread rods. The wastewater installation system was mounted by a technician under the authority of Fraunhofer IBP.</p>																																														
<b>Test facility:</b>	Installation test facility P12, mass per unit area of the installation wall: 220 kg/m², mass per unit area of the ceiling: 440 kg/m². Installation rooms: sub-basement (KG), basement (UG) front, ground floor (EG) front and top floor (DG), measuring rooms: UG front, UG rear (details in Annex P and DIN EN 14366: 2020-02)																																														
<b>Test method:</b>	The measurements were performed according to DIN EN 14366:2020-02; noise excitation by steady water flow with 0,5 l/s, 1,0 l/s, 2,0 l/s and 4,0 l/s. Additional evaluation for comparison with requirements following German standards DIN 4109:2018-01 and VDI 4100:2012-10 (details in Annexes A, F and V). As of the test date, DIN EN 14366:2020-02 had been withdrawn and replaced by DIN EN 14366:2023-09.																																														
<b>Result:</b>	<table border="1"> <thead> <tr> <th rowspan="2">Test specimen: Wastewater system made of plastic "PRINCE DECILO, PP/PP-MD/PP, DN110 x 3,4 mm" (manufacturer: PRINCE Pipes and Fitting Limited) with fittings "PRINCE DECILO" (manufacturer: PRINCE Pipes and Fitting Limited) mounted with acoustic pipe clamps "BISMAT® 1000" made by Walraven GmbH.</th> <th rowspan="2"></th> <th colspan="4">Flow rate [l/s]</th> </tr> <tr> <th>0,5</th> <th>1,0</th> <th>2,0</th> <th>4,0</th> </tr> </thead> <tbody> <tr> <td>Airborne sound pressure level <math>L_{p,A}</math> [dB(A)] according to DIN EN 14366 for the basement test-room</td> <td>UG front</td> <td>40</td> <td>46</td> <td>48</td> <td>51</td> </tr> <tr> <td>Structure-borne sound characteristic level <math>L_{w,A}</math> [dB(A)] according to DIN EN 14366 for the basement test-room</td> <td>UG rear</td> <td>&lt;10</td> <td>&lt;10</td> <td>13</td> <td>18</td> </tr> <tr> <td rowspan="2">Installation sound level <math>L_{A,eq,n}</math> [dB(A)] following DIN 4109 in the basement test-room</td> <td>UG front</td> <td>40</td> <td>46</td> <td>48</td> <td>51</td> </tr> <tr> <td>UG rear</td> <td>&lt;10</td> <td>&lt;10</td> <td>12</td> <td>17</td> </tr> <tr> <td rowspan="2">Installation sound level <math>L_{A,eq,nt}</math> [dB(A)] following VDI 4100 in the basement test-room</td> <td>UG front</td> <td>38</td> <td>44</td> <td>46</td> <td>49</td> </tr> <tr> <td>UG rear</td> <td>&lt;10</td> <td>&lt;10</td> <td>&lt;10</td> <td>14</td> </tr> </tbody> </table>			Test specimen: Wastewater system made of plastic "PRINCE DECILO, PP/PP-MD/PP, DN110 x 3,4 mm" (manufacturer: PRINCE Pipes and Fitting Limited) with fittings "PRINCE DECILO" (manufacturer: PRINCE Pipes and Fitting Limited) mounted with acoustic pipe clamps "BISMAT® 1000" made by Walraven GmbH.		Flow rate [l/s]				0,5	1,0	2,0	4,0	Airborne sound pressure level $L_{p,A}$ [dB(A)] according to DIN EN 14366 for the basement test-room	UG front	40	46	48	51	Structure-borne sound characteristic level $L_{w,A}$ [dB(A)] according to DIN EN 14366 for the basement test-room	UG rear	<10	<10	13	18	Installation sound level $L_{A,eq,n}$ [dB(A)] following DIN 4109 in the basement test-room	UG front	40	46	48	51	UG rear	<10	<10	12	17	Installation sound level $L_{A,eq,nt}$ [dB(A)] following VDI 4100 in the basement test-room	UG front	38	44	46	49	UG rear	<10	<10	<10	14
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<b>Test date:</b>	January 23, 2026																																														
<b>Notes:</b>	<ul style="list-style-type: none"> <li>- For comparing test results with requirements according to DIN 4109 and VDI 4100 note Annex A.</li> <li>- Sound levels below 10 dB(A) are not mentioned in the official test report, since they are subject to an increased measurement uncertainty and moreover are not noticeable in a normal living environment.</li> <li>- The above-mentioned measurement results require careful assembly of the pipe clamps (see test set-up).</li> </ul>																																														
	<p>The test was carried out in laboratory facilities of the IBP which is accredited according to DIN EN ISO/IEC 17025:2018 by the DAkkS. The accreditation certificate is D-PL-11140-11-00.</p> <p>Stuttgart, March 2, 2026            Dep. Head of the test laboratory: </p>																																														

## PRINCE PIPES AND FITTINGS LIMITED

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