

## Test Report P-BA 104/2025e

# Determination of the Acoustic Performance of a Wastewater Installation System in the Laboratory according to DIN EN 14366-1

**Client:** Orbia Building & Infrastructure (Wavin)  
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**Test specimen:** Wastewater system made of plastic, type: "Wavin PVC Pro, 110x3.2"  
(manufacturer: Orbia Building & Infrastructure (Wavin)) with fittings " Wavin  
PVC Pro" (manufacturer: Orbia Building & Infrastructure (Wavin)) mounted with  
acoustic pipe clamps type: "Wavin Low Noise bracket, BL 110 M8/M10" made  
by Walraven GmbH as double clamp and guidance clamp.

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	Annex A:	Measurement set-up and assessment of measurement results
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**Test date:** The measurement was carried out on July 22<sup>nd</sup>, 2025 in the test  
facilities of the Fraunhofer Institute for Building Physics in Stuttgart.

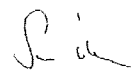
Stuttgart, November 6<sup>th</sup>, 2025

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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.

The mentioned measuring results exclusively refer to the investigated test object. Any publication of this document in  
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**Building situation: Prediction based on DIN EN 12354-5****P-BA 104/2025e****Client:** Orbia Building & Infrastructure (Wavin), Istanbul, 34865, Turkey**Table 1**

**Test specimen:** Wastewater system made of plastic, type: "Wavin PVC Pro, 110x3.2" (manufacturer: Orbia Building & Infrastructure (Wavin)) with fittings " Wavin PVC Pro" (manufacturer: Orbia Building & Infrastructure (Wavin)) mounted with acoustic pipe clamps type: "Wavin Low Noise bracket, BL 110 M8/M10" made by Walraven GmbH as double clamp and guidance clamp. Test object no. S 12481-01; see Figures 2 and 3.

Mounting conditions see Sheet 1.

**Prediction method:**

In this case the predicted values are calculated using a measured transfer function acc. to DIN EN ISO 10848 for the transmission from the source room to the receiving room in the test facility P12 at Fraunhofer IBP in Stuttgart. For the prediction only the structure borne sound is considered, but the airborne sound transmission is negligible for the SNQ.

**Present building situation for this prediction:**

In this case the calculations are based on the building situation in the test facility P12 at Fraunhofer IBP in Stuttgart, details see Annex P. The source room is the front room of the basement in the test facility ("UG front") and the receiving room is the horizontal room ("UG rear"). All floors/ceilings and all flanking walls to the installation wall are made of 19 cm thick concrete (weight per unit area approx. 440 kg/m<sup>2</sup>). The installation wall itself is 11.5 cm thick limestone, plastered on both sides (weight per unit area approx. 220 kg/m<sup>2</sup>).

#	Input data for prediction: - source data for wastewater system, see Results 1 and 2 and - present building situation, see above.	Flow rate [l/s]				
		0.5	1.0	2.0	4.0	
Normalized sound pressure level $L_{Aeq,n}$ [dB] – Installation sound level						
1	$L_{Aeq,n,50-5000\text{ Hz}}$	source room	43.5	47.7	50.8	53.8
		receiving room	< 10	10.1	14.3	19.5
2	$L_{Aeq,n,100-5000\text{ Hz}}$	source room	43.5	47.7	50.8	53.8
		receiving room	< 10	< 10	14.1	19.2
Standardized sound pressure level $L_{Aeq,nT}$ [dB] – Installation sound level						
3	$L_{Aeq,nT,50-5000\text{ Hz}}$	source room	41.2	45.5	48.5	51.6
		receiving room	< 10	< 10	10.8	16.0
4	$L_{Aeq,nT,100-5000\text{ Hz}}$	source room	41.2	45.5	48.5	51.6
		receiving room	< 10	< 10	10.5	15.7

- Note:** - Results in line #2 corresponds to DIN 4109-values and in line #4 to VDI 4100-values in old test reports.  
 - The SNQ obtained here shall not be used in context with requirements in buildings that do not correspond to the building situation mentioned above. The prediction can be done for other building situation.  
 - Sound levels below 10 dB are not mentioned in the test report, since they are subject to an increased measurement uncertainty and moreover are not noticeable in a normal living environment.



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 Stuttgart, November 6<sup>th</sup>, 2025  
 Head of the test laboratory: *[Signature]*