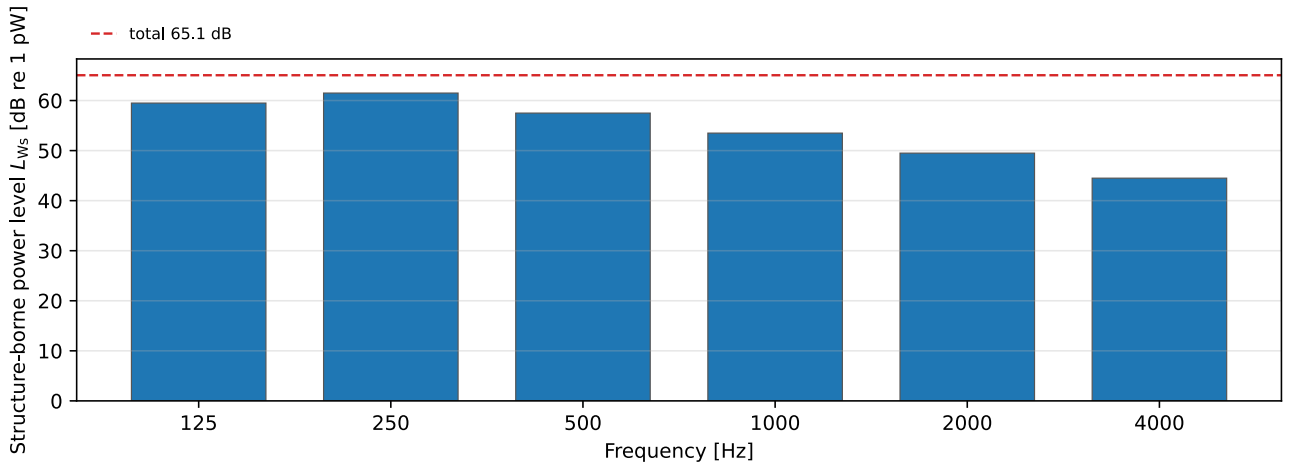
Structure-borne sound power determination

Determination of the structure-borne sound power injected into the reception plate by building service equipment (UNE-EN 15657:2018 reception-plate method, Formula 14).

Client:	Example building services contractor	Noise source:	Circulation pump (wall-mounted)
Test environment:	Reception-plate test rig (heavy concrete plate)	Instrumentation:	Piezoelectric accelerometer array (ISO 16063-21), s/n 0042
Temperature [°C]:	21	Relative humidity [%]:	45
Ambient pressure [kPa]:	101.1	Date of test:	2026-07-21

Octave-band structure-borne sound power levels

f [Hz]	L_v [dB]	L_{Ws} [dB]
125	70.0	59.5
250	72.0	61.5
500	68.0	57.5
1000	64.0	53.5
2000	60.0	49.5
4000	55.0	44.5



Structure-borne sound power level L_{Ws} = **65.1 dB** re 1 pW

Plate mass per area m = 230.0 kg/m²
Reception-plate area S = 7.00 m²
Plate-specific level (Formula 14); convert to the source quantity before EN 12354-5.

L_{Ws} = 10 lg(2π f η m S / (f_0 m_0 S_0)) + L_v - 60 dB re 1 pW (UNE-EN 15657:2018 Formula 14), with the references f_0 = 1 Hz, m_0 = 1 kg, S_0 = 1 m², the plate loss factor η = 2.2/(f T_s) (Formula 13) and the spatial mean velocity level L_v = 10 lg((1/N) Σ $10^{L_{v,i}/10}$) re v_0 = 10^{-9} m/s (Formula 12).

Formula 14 gives the power injected into this particular reception plate, not a plate-independent source descriptor: convert it to the equivalent blocked force level (Formula 15) and the characteristic reception-plate power level L_{Wsn} (Formula 17), then apply the EN 12354-5:2009 Annex I mobility correction, before predicting an installed level.

Laboratory: Phonometry reference example
Report no.: EXAMPLE-15657
Date: 2026-07-21
Notes: Structure-borne sound power injected into the reception plate (UNE-EN 15657:2018 reception-plate method, Formula 14).
Operator: phonometry Signature: _____

■ The results relate only to the tested specimen.

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