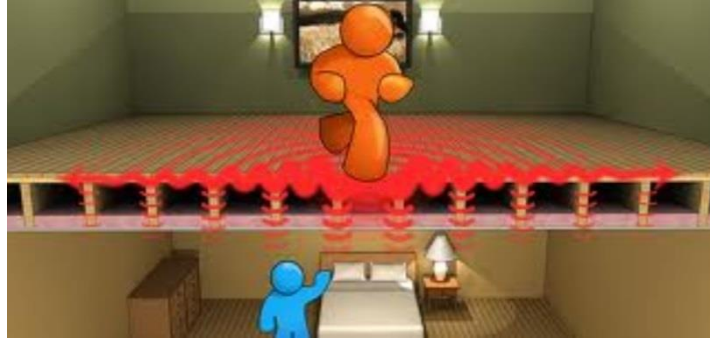


FLOOR IMPACT NOISE IN BUILDINGS



Palmer Acoustics is a consulting engineering company specialising in building acoustics for the last 23 years and offers a range of building acoustic certification tests. These include:

- Floor impact noise
- Wall transmission loss;
- Room Noise levels.

Of these the greatest demand is for floor impact testing. Floor impact noise is the most common cause for complaint with regards to noise in high rise buildings. This results primarily from impacts on hard floor surfaces affecting lower and adjacent residential areas. These floors will typically be tile, stone or timber floors with the noise source being foot fall noise or items being dropped or moved along the floor. Carpet is not a hard floor surface and significantly reduces impact noise.

Hard flooring impact noise is controlled by installing a floor impact insulation layer under the hard flooring. This could be either a screed, rolled out layer, sheet product or a multi-layer combination of insulation layers.



Floor impact noise is assessed using an ISO140 compliant tapping machine, as illustrated below, with the results are presented as $L'_{n,Tw}$ as per ISO 717-2:



The BCA/NCC 2016 requirements for field tested floor impact insulation in multi-level residential developments are summarised as:

An $L'_{n,Tw}$ not more than 62 for floors separating dwellings and for floors separating dwellings from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification."

It should be noted that the limits provided under the BCA provide a poor level of acoustic amenity; at a level that is not accepted by many Body Corporates.

For many high rise buildings the building Body Corporate will have a By-Law that specifies the allowable levels of floor impact noise and when hard flooring surfaces are installed or replaced that an acoustic assessment should be provided. Palmer Acoustics provides these assessments and tests from the NSW border to the Sunshine coast. The tests generally take close to 45 minutes per test and require access to the lower or adjacent apartment. Frequently we are required to carry out tests on floor samples to assess the effectiveness of proposed floor systems. These samples should be:

- A minimum 1200mm x 1200mm
- Laid above a room of minimum 18m²;
- Be laid strictly in accordance with the supplier's installation procedures;
- Allow a minimum of 48 hours to cure.

For further information, do not hesitate to contact our office or refer to our web site (www.palmeracoustics.com).

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