



# Why acoustics are an important consideration in a commercial space

With more than 50 years' experience in the local and international flooring industry, Denver Coleman, Chairman of Polyflor SA, answers questions posed by installers, architects and readers. In this issue, he discusses points to consider when looking to optimise the acoustics of a space.

*"What do I need to know about the impact of flooring on acoustics and what should I keep in mind when specifying a flooring systems?"* – Dirhen Padayachee, Johannesburg

The benefits of reducing impact sound within commercial interiors have been well researched and documented over recent years. Acoustics have fast become one of the primary focuses of builders, contractors and architects, as measures are introduced to improve the overall acoustic performance of new and refurbished spaces.

It is a growing understanding that noise can have an extremely detrimental effect in the workplace, which can significantly affect an individual's well-being and hinder work performance. Acoustic vinyl floor coverings have been designed and developed to assist in improving the acoustic properties within spaces, as well as to provide the additional benefits of aesthetics, performance, hygiene and durability.

## General points to consider

### » SOUND AND THE NATURE OF SOUND

Sound is usually generated by vibrations of a surface, which increase the pressure fluctuations in the air or some other medium. Sound is transmitted through sound waves and may be described in terms of sound pressure, sound energy or sound power. Noise is generally defined as unwanted sound.

### » IMPACT SOUND

Noise is created when sound energy is transmitted either by impact or by air. Impact sound is energy produced by the collision of solid objects transmitted through the structure of a building such as footsteps, slamming of doors or dragging of furniture.

Noise levels transmitted through floors by impact sound can be reduced by acoustic planning at the outset of a project and by correctly installing an acoustic floor covering.

### » WALKING NOISE

Walking noise, unlike impact sound, is where the sound of a person's footsteps when walking in a room is reverberated back into the room through the air. Though walking noise is not currently regulated by a standard, it is still an important factor to consider when trying to reduce sound levels.

Smooth acoustic floor coverings are designed to reduce impact sound at source, not to reduce background or reverberation sound within a room. It is advisable from the outset of a project to seek advice from a specialist acoustician, as the subject requires considerable expertise.

Other sources of noise to consider when planning your interior are:

- Traffic
- Weather
- Plumbing

- Duct-borne noise
- Noise via open windows

Acoustic ceiling and wall panels, fabrics, textiles, plants and mindful space planning may also be considered in the design process to assist with reducing noise.

### » ACOUSTICS TESTING STANDARDS

#### The Impact Test

The impact test measures the sound level downstairs when a standard tapping machine is operating upstairs. This is intended to replicate noise such as footsteps and the moving of furniture which travels through the separating floor. The result is shown as the weighted standardised Impact Sound Pressure Level, or L'nT,w and the lower the sound pressure level downstairs, the better the insulation.


Impact sound insulation is measured in terms of an absolute sound level so that a lower number indicates that the standard of impact sound insulation is better. Sound levels and sound insulation values are expressed in decibels (dB).

### » EXCEEDING THE STANDARD

Throughout many countries, legislation has been introduced to address resistance to the passage of sound. In the UK for example, Building Regulations<sup>1</sup> stipulates that a suitable floor covering should have a weighted reduction in impact sound pressure level of not less than 17dB when measured in accordance with EN ISO 140-8 and calculated in accordance with EN ISO 717-2.

Reputable acoustic floor coverings meet and exceed these standards with a minimum reduction level of at least 18dB, some even exceed this with reduction levels of 19dB.

### » ACOUSTIC SECTORS AND MARKETS

More and more commercial buildings are now being identified as benefitting from an acoustic floor covering. There are many common areas where noise is considered a nuisance and with more high traffic areas expected throughout buildings, these areas can benefit greatly from acoustic flooring to aid a peaceful working environment. 



For more information, visit [www.polyflor.co.za](http://www.polyflor.co.za), email [marketing@polyflor.co.za](mailto:marketing@polyflor.co.za) or call +27 (11) 609 3500 to speak to Blythe or Wendy.

