



What Happens During Sound Insulation Testing?

At Miller Goodall, we understand the importance of sharing our knowledge and progress with you every step of the way, working in partnership to ensure your project progresses as smoothly and successfully as possible. To this end, we have produced this download, which we hope you will find helpful.

1. Airborne sound insulation tests to BS EN ISO 140-4: 1998



The airborne test between two rooms is virtually the same whether the test takes place vertically (across a party floor) or horizontally (across a party wall).

A loudspeaker and power amplifier are used to generate high levels of 'pink' noise in the source room which is measured using a sweep method in both the source room and the receiver room. The speaker is then moved to a second position in the source room and the measurements repeated.

The background noise level is measured in the receiver room and the reverberation time ascertained, again in the receiver room, using bursts of pink noise.

This process provides all the measurement data necessary to calculate $D_{nT\omega} + C_{tr}$. We can usually provide a provisional result of the test on-site although we would need to confirm the result after analysing the data in the office.

2. Impact sound insulation tests to BS EN ISO 140-7: 1998

To measure the impact sound insulation of a floor, a tapping machine is used to generate impact sound which is measured in the room directly below. Unlike the airborne test which measures a sound level difference (i.e. the noise level in the source room minus the noise level in the receiver room), the impact sound test measures the absolute noise level in the receiver room generated by the tapping machine (which is why a lower value is better). Again, background noise levels and reverberation times are measured in the receiver room to allow the $L_{nT\omega}$ to be calculated.

One important consideration for the impact sound test is that the tapping machine must be placed on the bare floor, not on carpet, cushioned vinyl or other soft floor coverings. It is therefore essential that the test is undertaken before carpets are fitted. If carpets are in place, it is acceptable to undertake the test providing the carpet can be rolled back to expose at least half the bare floor.

If a soft covering has been bonded to the floor, as for example in floor type 1 in ADE (concrete base with ceiling and soft floor covering), it is acceptable to undertake the test on a sheet of MDF or chipboard to simulate a hard floor surface.



If you're unsure about any aspect of sound insulation testing, please call us, we will be happy to talk you through the process. If you have not yet started the development and have not received any acoustic design advice, we offer an acoustic detailing service to advise you of the necessary constructions and flanking details which, if built to our specification, should be sufficient to meet the ADE requirements. If you would like to take advantage of this service, please contact us for further information and prices.

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