

## Introduction

The aim of Part E of the Second Schedule to the Building Regulations is to ensure that dwellings achieve reasonable levels of sound insulation from sound transmission from adjoining buildings or separately occupied parts of the same building. Compliance with Technical Guidance Document (TGD) Part E is a key element in the project.

## Performance Requirements

The Sound performance levels of all separating walls and floors in the project are required to be as per Table 1 of TGD below:

Sound Insulation Performance Requirements (TGD E 2014)		
Separating Construction	Airborne sound insulation $D_{nT,w}$ dB	Impact sound insulation $L'_{nT,w}$ dB
Walls	53 (min)	-
Floors (including stairs with a separating function)	53 (min)	58 (max)

Separating walls and floors are as defined in TGD Part E and are those that separate a dwelling from (a) another dwelling or dwellings, (b) other parts of the same building and/ or (c) adjoining buildings. Refer to Diagram 1. of the TGD Part E.

## Competency of Tester

The contractor shall employ a recognised independent specialist approved by the design team/assigned certifier to carry out the sound insulation testing. No testing is to commence without this approval.

Sound insulation tests must be carried out by a person competent in the measurement of sound insulation in buildings and possess sufficient training, experience and knowledge appropriate to the nature of the work he or she is required to perform having particular regard to the size and complexity of such works. Specifically, the tester should be experienced in implementing the relevant ISO standards i.e. ISO 16283 Part 1 and ISO 16283 Part 2.

To ensure the competency of the tester they should:

- Have relevant project experience in sound insulation testing of residential developments and
- Registered on the Sound Insulation Testing Register Ireland (SITRI)

## Requirements for Testing

- The sound insulation tests should be carried out once the dwellings either side of a separating element are essentially complete, except for decoration.
- Sound insulation tests must be carried out between rooms or spaces that share a common area of separating wall or separating floor.
- Impact sound insulation tests should be carried out without a soft covering (e.g. carpet, foam backed vinyl) on the floor. Where a resilient material is being used on the surface of the floor, it should be bonded to the floor prior to testing. (Note: a bonded resilient layer is not a soft covering.)
- Sound insulation testing does not need to be carried out between the dwelling space and common circulation areas as testing between such spaces may give unreliable results due to the possible complex shape of the circulation spaces.

## Programme of Testing

The 'set of tests' required by Table 2 shall be carried as part of the construction process and in accordance with the procedure set out in TGD Part E: Appendix A.

### Initial Testing

At least one 'set of tests' must be carried out on a dwelling group or sub-group within the first four dwellings (of that group or sub group) which are planned for completion. Testing should be conducted more frequently at the beginning of a series of completions than towards the end, to allow any potential problems to be addressed at an early stage. Testing should be carried out over a substantial part of the construction period.

### Minimum Frequency of Testing

The number of tests and frequency of testing required on the development will be calculated by the contractors testing specialist in accordance with the minimum testing requirements as per TGD-E 2014. A schedule of testing will be provided by the testing specialist to the design team and assigned certifier prior to agreement on the total number of tests required for TGD-E compliance and the units to be tested on the development. No testing is to be undertaken prior to agreement with the acoustic consultant.

## Description of Test Procedure

Sound Insulation testing should be carried out in accordance with the following standards:

- I.S. EN ISO 16283-1: 2014.
- I.S. EN ISO 16283-2: 2015.
- I.S. EN ISO 717-1 2013.
- I.S. EN ISO 717-2: 2013;
- I.S. EN ISO 3382-2: 2008.

All testing to be in accordance with the procedure set out in Appendix A of the Technical Guidance Document Part E. The sound insulation tests should not be carried out until the dwellings either side of the separating element are essentially complete, except for decoration. Rooms should be unfurnished during testing and Impact sound insulation tests should be conducted on a floor without a soft covering such as carpet or backed vinyl. All results will be registered with SITRI and with the Task No and Password included in the report.

### Test Report

The test report should contain at least the information required as per Appendix A section A.3 TGD-E. All test results should be include in the one test report including all failed tests to demonstrate compliance with TGD-E.

### Actions Following a Failed Set of Tests

A 'set of tests' is deemed to have failed if any of the individual tests of airborne or impact sound insulation do not satisfy sound insulation values equal to or better than those set out in TGD Part E. Remedial works to the failed element must be carried out by the contractor until the element meets the performance levels of TGD Part E when retested. Dwellings on the same site completed prior to the failed test (excluding those proven acceptable by previous tests) must either have similar remedial work carried out or demonstrate by testing that they meet the performance levels of TGD Part E.

Where remedial work and a new test is required on any dwelling, the number of 'sets of tests' required must be increased by one, for that group or sub-group type.