

Robust Details Limited

TEST AND PERFORMANCE REQUIREMENTS (TR01)

Major version	Reason for change	Description of main change(s)
1	New edition	No material changes. Minor edits and text improvements.
2	Inclusion of N.I.	N.I. added to tables of section 2; references to Part E and Section 5 removed from section 3.

1 Description

This document sets out the test and sound insulation/transmission performance requirements and other test criteria used by RDL for the assessment of applications for:

- new Robust Details (RDs) known as candidate Robust Details (CRDs)
- amendments to an existing RD (flanking construction or component).

The test requirements differ slightly between these 2 assessment categories, but the performance requirements remain the same throughout.

2 Sound insulation/transmission performance requirements

Table 1 and Table 2 indicate the minimum sound insulation/transmission requirements which must be achieved by candidate robust details in order to be considered by Robust Details Limited's (RDL) Standards Committee for approval and issue as a new or amended RD.

England and Wales, and Northern Ireland	Scotland
Individual values must be $\geq 47\text{dB } D_{nT,w} + C_{tr}$	Individual values must be $\geq 58\text{dB } D_{nT,w}$
*Mean value must be $\geq 50\text{dB } D_{nT,w} + C_{tr}$	*Mean value must be $\geq 61\text{dB } D_{nT,w}$

Table 1 - Airborne sound insulation of separating walls and floors

England and Wales, and Northern Ireland	Scotland
Individual values must $\leq 60 \text{ dB } L'_{nT,w}$	Individual values must be $\leq 54\text{dB } L'_{nT,w}$
*Mean value must be $\leq 57 \text{ dB } L'_{nT,w}$	*Mean value must be $\leq 51\text{dB } L'_{nT,w}$

Table 2 - Impact sound transmission of separating floors

* The mean value is calculated at both Stage A (mean of 8 individual values) and Stage B (mean of 30 individual values including Stage A test results), and is calculated from the arithmetic mean, where the rounding is based on a single decimal place.

In all cases, you (the Proposer) are responsible for arranging and financing the testing, and for ensuring that the test body is briefed to test in accordance with RDL's requirements.

Sound testing may be undertaken on developments outside of the target country (or countries) where the final detail will be offered for registration. This is subject to:

- the design being capable of replication in future registered plots (dwellings) in the target country (or countries)
- the design being capable of satisfying all the relevant and applicable Standards and Building Regulations in the target country (or countries)
- the method of testing being in accordance with RDL's requirements as set out in this document.

3 Test bodies

Sound tests must be carried out in line with the requirements of the Building Regulations.

Test Bodies must be either UKAS accredited (or European equivalent) or ANC registered for testing in accordance with the relevant ISO 140 standards.

www.ukas.org

www.theanc.co.uk

4 Test reports

Results of testing must be rated and reported in accordance with ISO 717 and should contain the following:

- measurement data for third octave band frequencies 100Hz to 3150Hz
- sound pressure levels in source and receiving rooms
- reverberation times of receiving rooms (measured using T_{20})
- D_{nT} and L'_{nT} values

- single weighted values of $D_{nT,w}$ and $L'_{nT,w}$
- spectrum adaptation terms C and C_{tr} (ISO 717-1)
- spectrum adaptation terms C_1 (ISO 717-2)
- test reports must clearly describe, in addition to any other requirements in the relevant test standards:
 - the construction under test
 - the material components of the main separating element
 - flanking walls and linings.
- Plans and sectional drawings of the dwellings on all sides of the tested wall or floor must be provided and these must include:
 - room dimensions
 - dimensions of any steps and/or staggers.

5 Test sampling requirements

RDL aims to base its assessments on test data from a range of testers and sites in order to try and gain a more representative sample of what might be typical if the candidate RD was approved and used in the wider market.

For applications to amend existing RDs that are not new flanking elements (e.g. alternative components), please contact us at RDL to discuss and agree any sampling requirements.

Table 3 (new RD applications) and Table 4 (new flanking elements) show the test sampling requirements set by RDL's Standards Committee.

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Table 3 - New Robust Detail

Stage	Min no. tests	Min no. Sites	Max no. tests per site	Min no. test bodies	Max no. tests per test body
A	8	1	8	1	8
B	22	3	8	2	16
Total	30	4	8	3	16

Test constructions must be part of new homes on actual building sites (i.e. no lab testing). RDL may be able to accept PCT results undertaken for new build halls of residence or retirement/care homes, provided the layouts are similar to a house or apartment. Please contact RDL to discuss before proceeding with this.

The combined tests of Stage A & B should not be carried out on sites of, or constructed under the control of the same builder/developer organisation, i.e. two separate legal entities must be involved.

Table 4 - New Flanking Element to Existing Robust Detail

Stage	Min no. tests	Min no. Sites	Max no. tests per site	Min no. test bodies	Max no. tests per test body
A	8	1	8	1	8
B	7	1	7	1	7
Total	15	2	8	2	8

Test constructions must be part of new homes on actual building sites (i.e. no lab testing). RDL may be able to accept PCT results undertaken for new build halls of residence or retirement/care homes, provided the layouts are similar to a house or apartment. Please contact RDL to discuss before proceeding with this.

The combined tests of Stage A & B should not be carried out on sites of, or constructed under the control of the same builder/developer organisation, i.e. two separate legal entities must be involved.

6 Steps and Stagers between dwellings

Steps and stagers should be avoided where possible, or where unavoidable should be restricted to a maximum of 300mm.

7 Test rooms

Test rooms should be restricted to living rooms, kitchens, dining rooms and bedrooms. In the case of wall tests, no fitted kitchen or wardrobe units should be on or in front of the separating wall being tested. Preferably, rooms should have a minimum volume of 25m³. RDL may reject tests conducted in rooms less than 20m³ if modal resonances appear to have affected the test result.

8 Tests on separating walls

Up to two individual tests may be carried out on any one separating wall, providing there are two pairs of valid rooms either side of the wall (e.g. in a pair of houses with living room **pairs** on the ground floor and bedroom **pairs** on the first floor), two tests can be carried out, one at ground floor and one at first floor.

9 Tests on separating floors

Individual tests on separating floors must include both an airborne sound insulation test and an impact sound transmission test (e.g. for Stage A, 8 airborne and 8 impact tests should be carried out to make up 8 test structures). As the airborne and impact tests are submitted as a set, they must be carried out on the same separating floor. Up to two individual tests may be carried out on any one separating floor, providing there are two **pairs** of valid rooms either side of the floor (e.g. in a pair of flats with living rooms stacked one directly above another and bedrooms stacked one directly above another) then two tests can be carried out, living room pairs and bedroom pairs.