

CONFERENCE WELCOME

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improving living in scotland



Key Changes and Performance Levels

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Outline



- **List of main changes**
- **New Criteria and Terminology**
- **Separating Walls and Floors**
 - Existing Performance Requirements
 - Proposed Performance Requirements
- **Designer / Specifier Targets**
- **Internal Walls and Floors**
- **Product Benchmark Tests**

Current Consultations



- **A REVIEW OF STANDARDS AND GUIDANCE IN THE TECHNICAL HANDBOOKS ON SECTION 0: GENERAL, SECTION 3: ENVIRONMENT AND SECTION 4: SAFETY**
- **A REVIEW OF STANDARDS AND GUIDANCE IN THE TECHNICAL HANDBOOKS ON SECTION 2: FIRE**
- **A REVIEW OF STANDARDS AND GUIDANCE IN THE TECHNICAL HANDBOOKS ON SECTION 5: NOISE**

List of Main Changes



SUMMARY OF CHANGES TO SECTION 5 GENERAL (outlined in *Annex A* of consultation)

1. The existing standard has been reworded and now covers residential buildings separating walls and separating floors.
2. A new standard to reduce **noise within buildings** has been introduced.
3. A **significant increase** in the sound insulation performance of separating walls and separating floors.
4. The introduction of a robust **post-completion testing regime**.
5. The introduction of new guidance on the affect workmanship has on the performance of separating floors or separating walls.
6. Improved guidance on carrying out work to existing buildings.

Criteria & New Terminology



Airborne sound insulation –

sound associated with speech, television, radio and general living noise

measured in decibels (dB) and using Criteria (DnT,w)

higher the value the better the sound insulation

also may have a second term '+ Ctr' which addresses low frequencies of sound

Impact sound insulation –

sound associated with noise from footfall on separating floors

measured in decibels (dB) and using criteria L'nT,w

lower the value the better the sound insulation

PCT –

Sound insulation testing

Also called *post construction testing* or *pre-completion testing*

Separating Walls and Floors – Standard 5.1



Existing Section 5 / *New Section 5*

Classed as New Build or Conversions

New Build and Conversion performance requirements are the same

Walls have 1dB higher required airborne performance than Floors

Separating Walls and Floors



Existing Section 5 / *New Section 5*

Classed as New Build or Conversions

New build classed as either EXAMPLE, PRE-TESTED or ALTERNATIVE

New Build and Conversion performance requirements are the same

New Build now higher requirements than conversion

Walls have 1dB higher required airborne performance than Floors

Wall and floor required airborne performance now same

Separating Walls and Floors (airborne)

AIRBORNE sound insulation requirements (WALLS) dB

	Existing
Single Test or Mean airborne sound insulation	53 $D_{nT,w}$
Minimum airborne sound transmission (for a group of tests max. 4 tests)	49 $D_{nT,w}$

AIRBORNE sound insulation requirements (FLOORS) dB

	Existing
Single Test or Mean airborne sound insulation	52 $D_{nT,w}$
Minimum airborne sound transmission (for a group of tests max. 4 tests)	48 $D_{nT,w}$

Separating Walls and Floors (airborne)

AIRBORNE sound insulation requirements (WALLS) dB

	Existing	Proposed MIN
Single Test or Mean airborne sound insulation	53 $D_{nT,w}$	56 $D_{nT,w}$
Minimum airborne sound transmission (for a group of tests max. 4 tests)	49 $D_{nT,w}$	

AIRBORNE sound insulation requirements (FLOORS) dB

	Existing	Proposed MIN
Single Test or Mean airborne sound insulation	52 $D_{nT,w}$	56 $D_{nT,w}$
Minimum airborne sound transmission (for a group of tests max. 4 tests)	48 $D_{nT,w}$	

MEAN values no longer included

Separating Walls and Floors (airborne)



AIRBORNE sound insulation requirements (WALLS) dB			Conversions
	Existing	Proposed MIN	Proposed MIN
Single Test or Mean airborne sound insulation	53 $D_{nT,w}$	56 $D_{nT,w}$	53 $D_{nT,w}$
Minimum airborne sound transmission (for a group of tests max. 4 tests)	49 $D_{nT,w}$		

AIRBORNE sound insulation requirements (FLOORS) dB			Conversions
	Existing	Proposed MIN	Proposed MIN
Single Test or Mean airborne sound insulation	52 $D_{nT,w}$	56 $D_{nT,w}$	53 $D_{nT,w}$
Minimum airborne sound transmission (for a group of tests max. 4 tests)	48 $D_{nT,w}$		

MEAN values no longer included

SECTION 5 – Proposed new performance requirements

Tests levels in dB for Example and pre-tested constructions

	New build	Conversions
Minimum airborne sound insulation	$56 D_{nT,w}$	$53 D_{nT,w}$
Maximum impact sound transmission	$56 L'_{nT,w}$	$58 L'_{nT,w}$

Test levels in dB for alternative constructions

	New build	Conversions
Minimum airborne sound insulation	$56 D_{nT,w}$ and	$53 D_{nT,w}$ and
	$45 D_{nT,w} + C_{tr}$	$43 D_{nT,w} + C_{tr}$
Maximum impact sound transmission	$56 L'_{nT,w}$	$58 L'_{nT,w}$

SECTION 5 – Proposed new performance requirements

Tests levels in dB for Example and pre-tested constructions

	New build
Minimum airborne sound insulation	$56 D_{nT,w}$
Maximum impact sound transmission	$56 L'_{nT,w}$

Test levels in dB for alternative constructions

	New build	Conversions
Minimum airborne sound insulation	$56 D_{nT,w}$ and	$53 D_{nT,w}$ and
	$45 D_{nT,w} + C_{tr}$	$43 D_{nT,w} + C_{tr}$
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Designer / Specifier Targets

IMPROVEMENT - Current Section 5 versus Proposed Section 5

AIRBORNE	NEW BUILD Proposed min versus current mean	NEW BUILD New Design Target versus current mean	Always apply at least 4 dB beyond regulatory level
Walls	+ 3 dB	+ 7 dB	
Floors	+ 4 dB	+ 8 dB	
IMPACT	Proposed max versus current mean	NEW BUILD New Design Target versus current mean	
Floors	+ 5 dB	+ 9 dB	

Internal Walls and Intermediate Floors – Standard 5.2

Every *dwelling* and *residential building* must be designed and *constructed* in such a way that:

- (a) an internal wall, within the *building* that divides a *room* intended for sleeping from any other *room*, space where excessive noise is likely to occur, *kitchen* or *toilet*; and
- (b) an intermediate floor having a *room* intended to be used for sleeping located immediately above or below;

will limit the transmission of noise so as not to threaten the health of the occupants or inconvenience them in the course of normal activities, providing the source noise is not in excess of that from normal domestic activities.

Limitation

This standard does not apply to:

- (a) a *hospital*;
- (b) a place of lawful detention;
- (c) a *separating wall* or *separating floor*, and
- (d) a wall between an en-suite bathroom and the *room* it serves.

Internal Walls and Intermediate Floors – Standard 5.2

- Require to meet 43 dB R_w for airborne sound insulation
- This is a laboratory performance test
- This is not tested on site
- Regulation E2 (England and Wales) requires min. 40dB

Example constructions provide set performance requirements for products used within them:

- Resilient ceiling bars
- Floating floor treatments (battens, cradles and platform floors)
- Bonded resilient floor covers
- Downlighters

Product Benchmark Tests



Performance requirements for Floating Floor Treatments when used with timber joist or lightweight frame floors FFT1

Airborne ΔR_w
min. 17 dB

Airborne $\Delta R_w + C_{tr}$
min. 13 dB

Impact ΔL_w
min. 16 dB

Performance requirements for Resilient Ceiling Bars when used with timber joist or lightweight frame floors

Airborne ΔR_w
min. 16 dB

Airborne $\Delta R_w + C_{tr}$
min. 14 dB

Impact ΔL_w
min. 16 dB

PROPOSED NEW STANDARDS FOR SOUND INSULATION
New Section 5 Technical Standards Consultation
Resistance to the Transmission of Sound

Key Changes and
Performance Levels

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THANK YOU FOR YOUR TIME



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