December 2005

CI/SfB

Ff4

Acoustic Compliance

CELCON

Contents

Aircrete /aerkri:t/ *noun., adj.*

1. autoclaved, aerated concrete (AAC) **2.** (cel)lular (con)crete (CELCON). One of the lightest forms of concrete *with structural, thermal, sound, fire and freeze/thaw properties*, extensively used *in Europe where known as 'gasbeton'. Used in* the UK since the 1950s; today known as *'aircrete'*. Comprises pulverised fuel ash (PFA), sand, cement, aluminium powder, lime and water. Used *as blocks in a range of thicknesses and face formats* for internal and external walls above and below dpc and as infill in beam and block floors; used as a material for reinforced floor elements.

Introduction

Celcon products can easily achieve the sound insulation requirements to the Building Regulations. The solutions within this guide are backed by testing both on-site and in laboratory conditions.

Celcon products have excellent sound insulation qualities, which allow their continued use throughout the building to achieve the requirements for internal walls and floors (only applicable in England and Wales) and separating walls and floors including their associated flanking walls (applicable in England, Wales and Scotland).

Within this guide you will find:

Technical information, explaining the Aircrete mass law and how Celcon blocks match the performance of denser aggregate block masonry walls of the same thickness.

The Performance standards set out within Approved Document E (England and Wales), the routes to compliance and solutions which can be used for New build housing, flats and apartments, Rooms for residential purposes and schools.

Also included are details of the Performance Standards set out within Section 5 of the Scottish Technical Handbook including routes to compliance (specified (deemed to satisfy) constructions), performance testing and Robust Details (new build only) and their solutions.

Technical Information

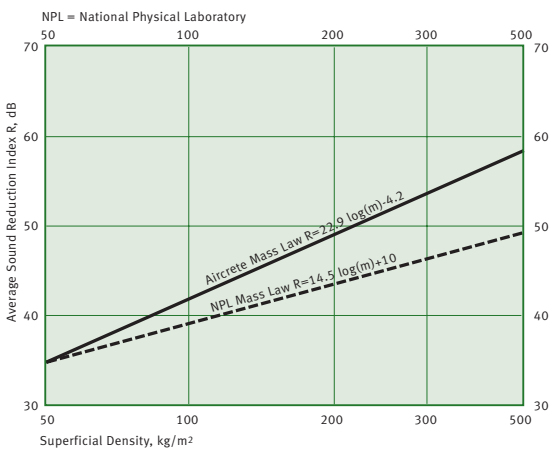
Approved Document **Part E** 2003

Aircrete mass law – Site test data has proven that walls constructed from Celcon blocks can match the performance of brick and aggregate block masonry walls of the same thickness. Aircrete has its own Mass Law and a comparison of it with the National Physical Laboratory (NPL) Aircrete mass law relationship for all other forms of masonry shows aircrete – superior performance.

This graph, showing the Sound Reduction Index R for a given superficial density, clearly demonstrates how the performance of aircrete separating walls, although lightweight, can equal that of heavier constructions of similar thickness.

Cellular structure – The structure of aircrete is in part responsible for this improvement in the mass law performance. The thousands of tiny non interconnecting air bubbles captured in each Celcon block structure make them excellent thermal and sound insulators. This structure also gives the benefit of air tightness and resistance to water ingress.

Comparison of AAC mass law with established formula for a range of materials



Performance Standards

Past requirements of the Building Regulations have failed consistently to fully protect home occupiers from unwanted sound. Rising housing density, changes in lifestyle and modern technology have all contributed to the need for more adequate noise reduction measures. Also as houses have become more airtight (e.g. with double glazing) external noise has been reduced, so internal noise has become more noticeable.

As of 1st July 2003 amendments to Part E of the Building Regulations for England and Wales came into force to improve sound insulation between and within individual dwellings. Also included are rooms for residential purposes, such as hotels and residential homes. Reverberation in common areas of apartment blocks and acoustic levels in schools were also addressed.

E1 Protection against sound from other parts of the building and adjoining buildings

Guideline E1 now encompasses rooms for residential purposes which include rooms in hotels, hostels, boarding houses, halls of residence and residential homes in addition to purpose-built dwelling houses and flats. Performance standards are given for walls, floors and stairs having a separating function.

E2 Protection against sound within a dwelling house

Standards have been set for the sound insulation of internal walls and floors within dwelling houses, flats and rooms for residential purposes.

E3 Reverberation in the common internal parts of buildings containing flats or rooms for residential purposes

Standards have been set for the control of reverberation in common internal parts of buildings and applies only to corridors, stairwells and hallways providing access to flats or rooms for residential purposes.

E4 Acoustic conditions in schools

All schools are now controlled under the Building Regulations and guidance on meeting this requirement is given in Building Bulletin 93 published by the Department of Education and Skills (DfES) in 2003.

Dwelling – houses and flats – performance standards for walls, separating floors and stairs that have a separating function

	Airborne sound insulaton $D_{nT,w} + C_{tr}$ dB (minimum values)	Impact sound insulaton $L'_{nT,w}$ dB (maximum values)
Purpose built dwelling-houses and flats		
Walls	45	-
Floors and stairs	45	62
Dwelling-houses and flats formed by material change of use		
Walls	43	-
Floors and stairs	43	64

Rooms for residential purposes - performance standards for walls, separating floors and stairs that have a separating function

	Airborne sound insulaton $D_{nT,w} + C_{tr}$ dB (minimum values)	Impact sound insulaton $L'_{nT,w}$ dB (maximum values)
Purpose built rooms for residential purposes		
Walls	43	-
Floors and stairs	45	62
Rooms for residential purposes formed by material change of use		
Walls	43	-
Floors and stairs	43	64

Laboratory values for new internal walls and floors within: dwelling-houses, flats and rooms for residential purposes, whether purpose built or formed by material change of use

	Airborne sound insulation R_w dB (minimum values)
Walls	40
Floors	40

Routes to Compliance

Compliance to Approved Document E of the Building Regulations is achieved via one of two routes:

either

Robust Details when used in accordance with the rules and procedures of Robust Details Limited (www.robustdetails.com).

Note: Robust Details only apply to new build houses, flats and apartments. (Rooms for residential purposes, dwellings formed by material change of use and schools are NOT covered).

or

Pre-Completion Testing (PCT) to ensure achievement of the specified performance requirements.

Robust Details

Robust Details are construction solutions that provide an alternative to Pre-Completion Testing (PCT) as a method of complying with Part E (resistance to the passage of sound) of the Building Regulations for England and Wales for new build houses, flats and apartments.

A Robust Detail, for Part E of the Building Regulations, is a separating wall or floor construction and associated flanking constructions that has been assessed and approved by Robust Details Limited. In order to be approved, each Robust Detail must:

- Be capable of consistently exceeding the performance standards given in Approved Document E by a significant margin of 5dB.
- Be practical to construct on site
- Accommodate acceptable variations in workmanship

To design or build using Robust Details, the wall or floor specification must be selected from the Robust Details handbook which can be purchased from Robust Details Limited.

In order to use a Robust Detail as an alternative to Pre-Completion Testing, you must:

- Register each plot with Robust Details Limited
- Give the building control body a Robust Detail purchase statement relating to the plot(s) before work starts
- Construct separating walls and separating floors strictly in accordance with the relevant Robust Detail specifications.

Once they have received your completed registration form and payment, (currently £30+VAT per plot) a unique registration number will be allocated along with:

- A purchase statement which will include the unique plot registration number(s) This purchase statement should be passed (preferably with your building control application) to the Building Control body (Local Authority or Approved Inspector) before starting building work on the plot(s).
- A copy of the checklist for each Robust Detail
- A compliance certificate for each plot ready for authorisation once work has been completed. This must then be forwarded to Building Control

Important note: If the Building Control body receives the Robust Details Limited purchase statement, you will not be required to conduct Pre-Completion Testing on the home(s), providing the building work complies with the relevant robust detail(s) specifications. If the Building Control body does not receive the purchase statement, they will require you to carry out Pre-Completion Testing irrespective of whether the building work has been completed in accordance with the relevant Robust Detail(s).

Pre-Completion Testing (PCT)

Pre-Completion Testing (PCT) has been introduced to ensure the sound insulation of homes and rooms for residential purposes (both newly built and conversions) meet the performance standards of Part E1. PCT should be carried out when the separating walls and separating floors to be tested are complete, except for decoration or soft coverings (e.g. carpets) in the case of impact sound insulation tests.

Testing should be carried out for the following:

- Purpose built dwelling houses or flats (unless constructed as Robust Detail)
- Dwelling houses, flats or apartments formed from material change of use
- Purpose built rooms for residential purposes
- Rooms for residential purposes formed by material change of use

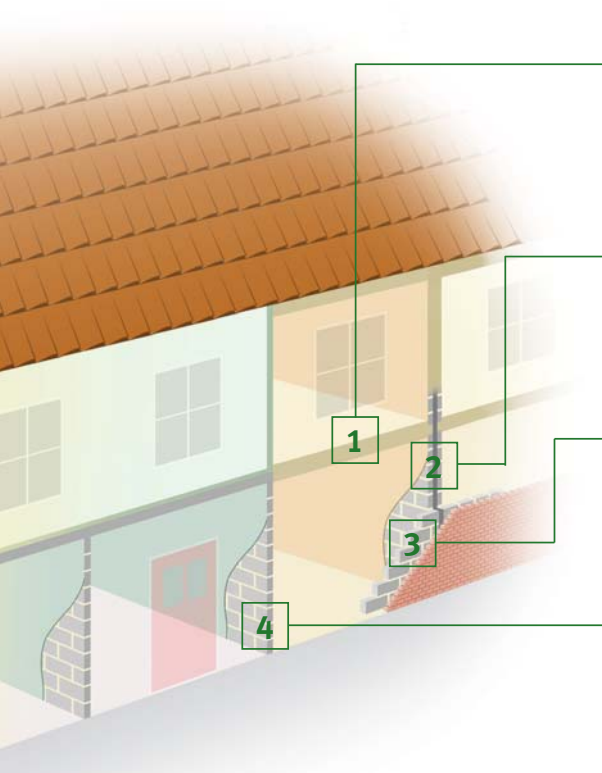
The person (or their representative) carrying out the building work must ensure that appropriate sound testing is conducted and is responsible for the cost of this. PCT is based on a sampling approach and so does not require testing of all separating walls and separating floors. Developers should consult with Building Control to agree the properties selected for testing relevant to each development. Generally, assuming no tests fail, one set of tests per every ten dwellings in a group or sub-group is required.

Grouping into notional groups within developments will allow fewer tests for the developers and more meaningful information to be gathered from the tests. Dwelling houses, flats, apartments and rooms for residential purposes should be considered as separate groups. This can be further divided into sub-groups where differences in construction type occur within the group. e.g. the separating wall type, flanking wall type or room dimensions are significantly different.

British Board of Agrément endorsement for PCT Solutions

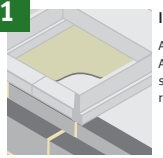
Where PCT is required, independent British Board of Agrément (BBA) third party certification may be available, indicating that the performance standard required by Approved Document 'E' should be achieved.

House (new build) Solutions continued



1 Internal floor

Any intermediate floor. A new value of $R_w = 40dB$ sound insulation is now required.

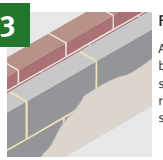


2 Separating wall

A wall that separates adjoining dwellings (houses).

3 Flanking element

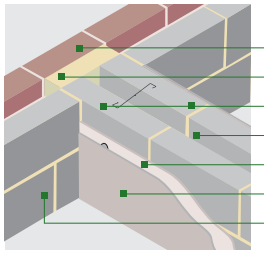
Any element of the building that adds to sound passing between rooms that is not a separating wall.



4 Internal walls

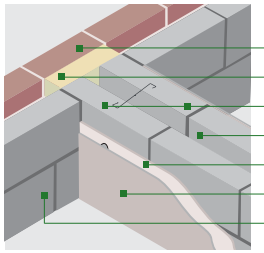
A wall which separates a bedroom or w.c. from a room of any function. A new value of $R_w = 40dB$ in sound insulation is now required.

Robust Detail Solutions



Separating and Flanking Walls E-MW-6* (10mm mortar joints)

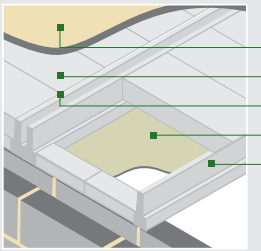
- Masonry outer leaf
- Cavity closer
- **Separating wall** – 100mm (min) Celcon Standard or Hi-Strength
- 75mm (min) clear cavity
- Internal render scratch finish (6mm (min) – nominal 8mm)
- Plasterboard on dabs, nominal 8kg/m²
- **Flanking wall** – Any 100mm (min) Celcon blockwork



Separating and Flanking Walls E-MW-7* (2mm thin layer mortar joints)

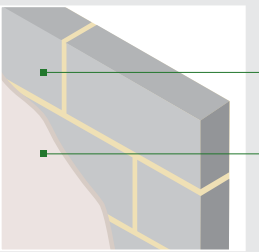
- Masonry outer leaf
- Cavity closer
- **Separating wall** – 100mm (min) Celcon Standard or Hi-Strength
- 75mm (min) clear cavity
- Internal render scratch finish (6mm (min) – nominal 8mm)
- Plasterboard on dabs, nominal 8kg/m²
- **Flanking wall** – Any 100mm (min) Celcon blockwork

Other elements not requiring PCT



Beam and Block Internal Floors PCT not required **($R_w = 40dB$)**

- 40mm (min) sand/cement screed
- Celcon FloorBlock or 100mm Standard block
- Grout fill
- 12.5mm Plasterboard ceiling
- 150mm deep inverted T precast concrete floor beam



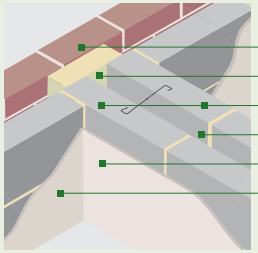
Internal Partition walls PCT not required **($R_w = 40dB$)**

- 100mm (min) Celcon Standard
- Any or no finish

Note: ⋆ Flue Blocks can be built in front of a separating wall but not within the separating wall. Contact Celcon's Technical Hotline for further information 01732 880580.

House (new build) Solutions continued

Pre-Completion Testing



Separating Walls

Masonry outer leaf

Cavity closer

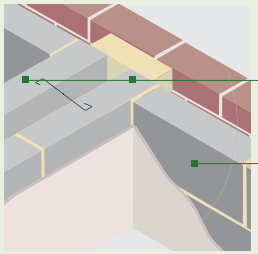
Separating wall# – 100mm (min) Celcon Standard or Hi-Strength

75mm (min) clear cavity

Plaster or Plasterboard on dabs (nominal 8kg/m²)

Flanking wall# – Any 100mm (min) Celcon blockwork

Traditional or Thin layer mortar



Flanking Wall Solutions

Separating wall type (see table below)

Flanking wall (see table below)

Where the following Celcon constructions are used in a solid external wall or as the inner leaf of an external cavity wall subject to Part E of the Building Regulations England and Wales, and the external wall flanks a separating wall, if built correctly and in accordance with the conditions given in the table below, the BBA confirm that they should comply with the requirements for flanking sound transmission.

A) Any Celcon block with a minimum thickness of 100mm, traditional or thin layer mortar and finished internally with plaster or plasterboard on dabs.

B) Any Celcon Aircrete blockwork of minimum surface mass of 120kg/m² excluding finishes (140mm Hi-Seven blockwork).

Flanking wall type

Separating wall type	External Wall requirements to Building Regulations for England and Wales	
	Celcon Aircrete flank walls A	Celcon Aircrete flank wall B
Solid masonry wall complying with Regulation E1 of Approved Document E	Condition 1 Condition 2 Condition 3	Condition 1 Condition 3
Cavity masonry wall complying with Regulation E1 of Approved Document E	Condition 1 Condition 3	Condition 1 Condition 3
BBA Certified (01/3816) Celcon Aircrete separating walls	Condition 1 Condition 3	Condition 1 Condition 3

Condition 1. The external wall should be bonded to the separating wall in such a way that the separating wall contributes at least 50% of the bond at the junction or abut the separating wall and be tied to it.

Condition 2. The external wall should have openings on both sides of the separating wall at every storey, which are at least 1m high and not more than 700mm from the face of the separating wall.

Condition 3. If the external wall is a cavity wall, the cavity should be stopped with a flexible closer.

Flats and **Apartments** (new build) Solutions

Internal walls

A wall which separates a bedroom or w.c. from a room of any function. A new value of R_w = 40dB in sound insulation is now required.

Separating wall

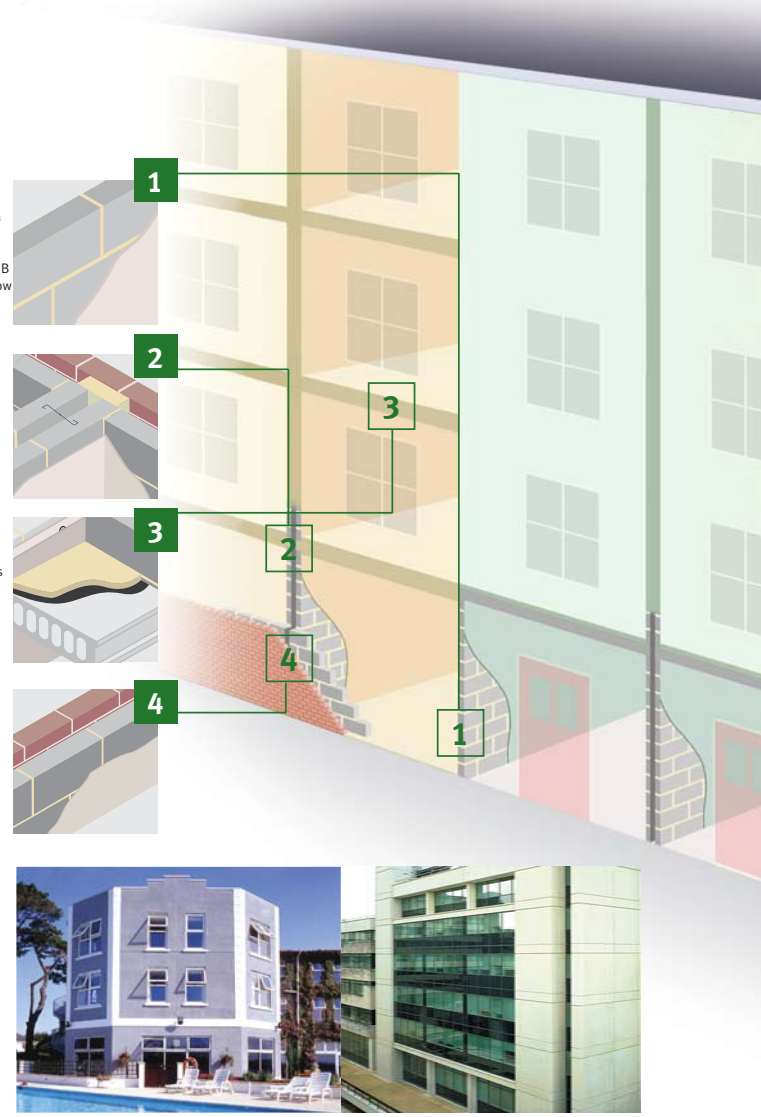
A wall that separates adjoining dwellings (flats and apartments).

Separating floor

A floor that separates adjoining dwellings (flats and apartments)

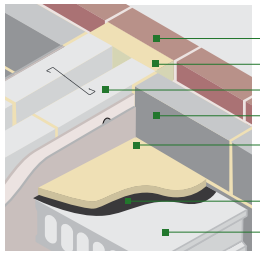
Flanking element

Any element of the building that adds to sound passing between rooms that is not a separating floor or wall.



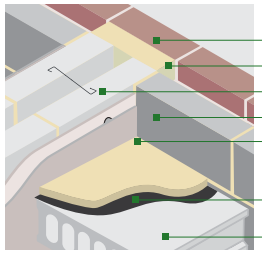
Flats and **Apartments** (new build) Solutions

Robust Details



Flanking Walls to E-FC-4

- Masonry outer leaf
- Cavity closer
- **Separating wall** – Robust Detail E-WM-1 to E-WM-5 and E-WM-8
- **Flanking wall** – Any 100mm (min) Celcon blockwork
- **Separating floor** – Robust Detail E-FC-4*
  65mm sand/cement screed or 40mm (min) proprietary screed (80kg/m² nominal)
- 6mm IsoRubber Base
- 150mm (min) precast hollow core plank (min 300kg/m²)

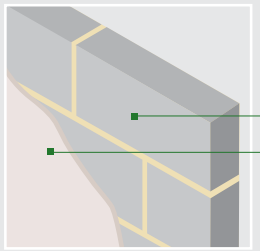


Flanking Walls to E-FC-3

- Masonry outer leaf
- Cavity closer
- **Separating wall** – Robust Detail E-WM-1 to E-WM-5 and E-WM-8
- **Flanking wall** – 100mm (min) Celcon Standard or Hi-Strength blockwork
- **Separating floor** – Robust Detail E-FC-3*
  65mm sand/cement screed or 40mm (min) proprietary screed (80kg/m² nominal)
- 5mm foamed polyethylene layer 30-36kg/m³ 25mm mineral wool batt 140kg/m³ (min) or 25mm expanded (SD grade) or EPS board
- 150mm (min) precast hollow core plank (min 300kg/m²)

Note: *For ceiling detail information please refer to the Robust Detail Handbook

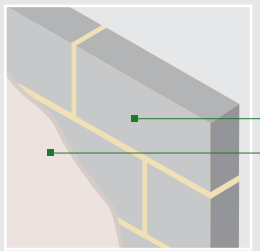
Other elements not requiring PCT



Internal Partition Walls - Robust Detail

PCT not required **(120kg/m² including finishes)**

- 100mm (min) Celcon Standard or Hi-Strength
- dense plaster finish

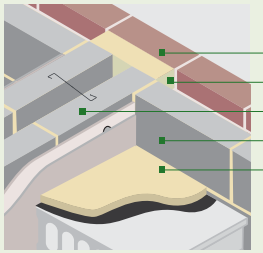


Internal Partition Walls - Non Robust Detail

PCT not required **(R_w = 40dB)**

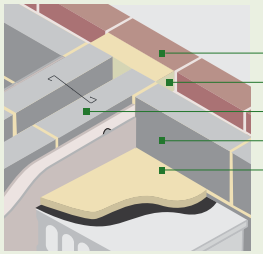
- 100mm (min) Celcon Standard or Hi-Strength
- Any or no finish

Pre-Completion Testing



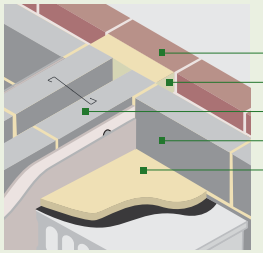
Separating and Flanking Walls to E-FC-1*

- Masonry outer leaf
- Cavity closer
- **Separating wall** – Robust Detail E-WM-6 and E-WM-7 (see page 7 for further details)
- **Flanking wall** – 100mm (min) Celcon Standard or Hi-Strength blockwork
- **Separating floor** – Robust Detail E-FC-1
  (see Robust Details handbook for further information)



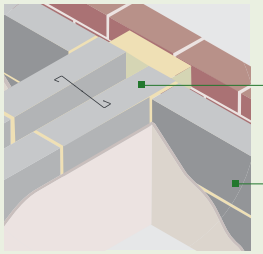
Separating and Flanking Walls to E-FC-3*

- Masonry outer leaf
- Cavity closer
- **Separating wall** – Robust Detail E-WM-6 and E-WM-7 (see page 7 for further details)
- **Flanking wall** – 100mm (min) Celcon Standard or Hi-Strength blockwork
- **Separating floor** – Robust Detail E-FC-3
  (see Robust Details handbook for further information)



Separating and Flanking Walls to E-FC-4*

- Masonry outer leaf
- Cavity closer
- **Separating wall** – Robust Detail E-WM-6 and E-WM-7 (see page 7 for further details)
- **Flanking wall** – 100mm (min) Celcon Standard or Hi-Strength blockwork
- **Separating floor** – Robust Detail E-FC-4
  (see Robust Details handbook for further information)



Masonry Flanking Wall Solutions (120kg/m²)

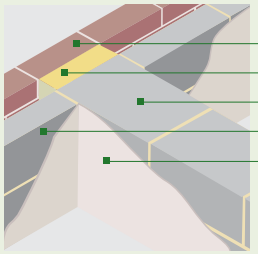
(to other concrete separating floors).

- **Separating wall**
- **Flanking wall** – 140mm (min) Celcon Hi-7 blockwork

* If the wall construction has been registered with Robust Details Limited it will only be necessary to test the floor.

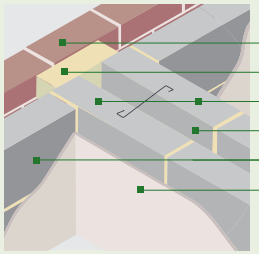
Rooms for **Residential Purposes** Solutions

Pre-Completion Testing



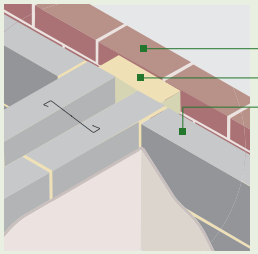
Separating Walls – solid construction (43dB)

- Masonry outer leaf
- Cavity closer
- **Separating wall** – 215mm (min) Celcon Standard or Hi-Strength
- **Flanking wall**
- Plaster finish



Separating Walls – cavity construction (43dB)

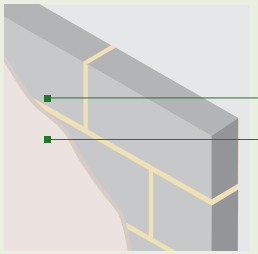
- Masonry outer leaf
- Cavity closer
- **Separating wall** – 100mm (min) Celcon Standard or Hi-Strength
- Minimum 75mm clear cavity
- **Flanking wall**
- Plaster or plasterboard on dabs



Flanking Walls

- Masonry outer leaf
- Cavity closer
- **Flanking wall** – Any 100mm (min) Celcon blockwork, any Finish

Note: Where a masonry separating floor is present a mass of 120kg/m² must be achieved (140mm Celcon Hi-7 blockwork) unless a Robust Detail floor construction (E-FC-1,3 or 4) is used. Please contact our Technical Department for further information.



Internal Partition Walls PCT not required (R_w=40dB)

- Celcon 100mm (min) Celcon Standard or Hi-Strength
- Any or no finish

Robust Detail Summary Table

The following table highlights the testing requirement of the listed Robust Detail Solutions using Celcon products.

Separating wall and Flanking walls

Floor (Robust Detail)	Flanking leaf	Separating wall (PCT not required if registered as a Robust Detail)	Floor – PCT required?
E-FC-4	100mm (min) Celcon Solar, Standard or Hi-Strength – ANY finish	Celcon E-WM-6 or 7	Yes*
		Non-Celcon ie E-WM-1, 2, 3, 4, 5 or 8	Not required – complies as a Robust Detail
E-FC-3	100mm (min) Celcon, Standard or Hi-Strength – ANY finish	Celcon E-WM-6 or 7	Yes*
		Non-Celcon ie E-WM-1, 2, 3, 4, 5 or 8	Not required – complies as a Robust Detail
E-FC-1	100mm (min) Celcon, Standard or Hi-Strength – ANY finish	Celcon E-WM-6 or 7	Yes*
		Non-Celcon ie E-WM-1, 2, 3, 4, 5 or 8	Yes*

* H+H Celcon Limited may be prepared to test the constructions for compliance with AD 'E' as part of our ongoing Research programme. This would be undertaken at our expense and at no cost to the client but please contact our Technical Department at the design stage on 01732 880580.

Schools Solutions

To satisfy Requirement E4, refer to Building Bulletin 93 'The Acoustic Design of Schools' produced by the DfES and published by the Stationery Office. See also www.teachernet.gov.uk/acoustics.

Because of the complexity of the design process, the document states, 'In all but the simplest cases, it is advisable to appoint a suitably qualified acoustic consultant' who would normally be a corporate member of The Institute of Acoustics (www.ioa.org.uk).

Celcon's products offer the ability to construct a variety of masonry solutions for educational buildings to satisfy the performance levels required.

Unlike the performance standards for dwellings, the C_{tr} spectrum adaptation value is not used to define sound insulation performance in schools.

Fot further information relating to the use of Celcon Products and school construction please contact Celcon's Technical Department. Celcon are currently producing a factsheet regarding the Acoustic Design of Schools.

Technical Handbook
Section 5 (noise) 2005 **Scotland**

On 1st May 2005 the new Technical Handbooks issued by the Scottish Building Standards Agency (SBSA) came into force (replacing the previous Technical Standards). Within these handbooks, there has been a significant updating of detailed issues and the introduction of additional advice and explanation. Sound Insulation issues formerly covered by Technical Standard H (Resistance to Transmission of Sound) are now covered under section 5 (Noise) of the Technical Handbooks.

Section 5 of the Domestic Technical Handbook covers the construction of separating walls, floors and any associated flanking constructions for dwellings. There are no requirements for internal walls/floors and Rooms for Residential Purposes). There are no acoustic requirements for buildings other than dwellings, however, for some constructions it is expected that the designers or building occupiers will impose certain requirements for sound insulation on these buildings i.e. the Local Education Authority in the case of schools.

The key points within section 5 of the Technical Handbook are:

1) Building construction using the following methods controls the reduction of noise transmission;

- Specified (deemed to satisfy) constructions
- Performance testing
- Robust Details* (new build only)

* This is subject to confirmation with the relevant Building Control Body to ensure compliance will be accepted.

2) Conversions of a building to a dwelling must meet the requirements of Section 5 of the Technical Handbook.

3) Garages;
If dwellings are linked only by a garage no separating wall compliance is required (clause 5.1)
Walls and floors between a garage and the same dwelling have no compliance requirement (clause 5.1.1)

4) Section 5 of the Domestic Technical Handbook 2005 also includes;
Annex 5.A The method for calculation of mass in relation to the specified constructions.
Annex 5.B The method for selection of resilient materials.
Annex 5.C The procedure for performance testing.

Compliance with Section 5 of the Technical Handbook is achieved via one of three routes;

Routes to **Compliance**

Compliance with Section 5 of the Technical Handbook is achieved via one of three routes:

Specified	Performance Testing	Robust Details
either 1	2	or 3

Specified (deemed to satisfy) constructions

There are several options covered under this section however for Celcon aircrete products these are neither the most cost effective or practicable solutions that our products can offer. These deemed to satisfy solutions are not the only ones which will not require site testing, see performance testing .

Performance testing

As shown in the Table below the recommended (minimum) testing performance values for both walls (airborne) and floors (airborne and impact) must be achieved. However, this method of compliance can be met by showing that the construction used will achieve the required level of sound insulation if certified by an independent third party such as the British Board of Agrement (BBA). H+H Celcon offers simple solutions under this compliance method as shown in the Solutions section of this document (see page 17).

Robust Details (new build only)

Robust Details offer another alternative solution to meet the sound insulation requirements for Scotland as well as England and Wales. From the Technical Handbook it is not clear whether they will be accepted as meeting the requirements of the Scottish Building Regulations, therefore contact should be made with the relevant Building Control Authority prior to designing or building using these solutions. Each separating wall or floor solution and associated flanking construction has been approved as offering enhanced sound insulation performance. For full details of the Robust Details please see the Page 4, 7,10 and 14 of this guide.

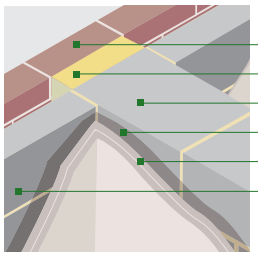
Dwelling-houses and flats - performance standards for walls, separating floors

	Airborne Sound (dB) $D_{nT,w}$ (min/mean values)	Impact Sound (dB) $(L'_{nT,w})$ (max/mean values)
Purpose built dwelling-houses and flats		
Walls	49/53	-
Floors	48/52	65/61

Important note: If the Building Control body receives the Robust Details Limited purchase statement, you will not be required to conduct Pre-Completion Testing on the home(s), providing the building work complies with the relevant Robust Detail(s) specifications. If the Building Control body does not receive the purchase statement, they will require you to carry out Pre-Completion Testing irrespective of whether the building work has been completed in accordance with the relevant Robust Detail(s).

Sound Insulation **Solutions**

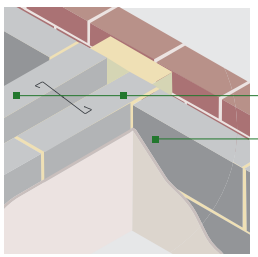
1 Specified (deemed to satisfy) constructions



Solid Separating Walls (isolated panel finish)*

- Masonry outer leaf
- Cavity closer
- **Separating wall** – 200mm (min) Celcon Hi-7 (160kg/m²)
- 25mm (min) airspace
- 2 x sheets plasterboard (18kg/m²)*
- **Flanking wall**

* Finishes must be constructed independently fitted to floor and ceiling only and have 25mm (min) airspace between the wall and the panel.



Flanking Wall

- **Separating wall**
- **Flanking wall**

Specified (Deemed to Satisfy) constructions flanking walls to Separating walls and floors (where combinations are used please cross reference all solutions).

Flanking walls to Wall type 1 (solid) two solutions:
1. 140mm (min) Celcon Hi-7 (120kg/m²) with any finish
2. 100mm Celcon block with any finish†

Flanking walls to Wall type 2 (cavity) two solutions:
1. Type 2a, c and d; 140mm (min) Celcon Hi-7 (120kg/m²) with any finish
2. Type 2b; any 100mm Celcon block

Flanking walls to Wall type 3 (isolated panel) two solutions:
1. Core A, B, C & D – any 100mm Celcon block isolated panel finish
2. Core A & B – any 100mm Celcon block plaster finish or Celcon Hi-7 with 140mm plasterboard on dabs

Flanking walls to Floor type 1 and 2 (concrete) three solutions:
1. 140mm (min) Celcon Standard with dense plaster (120kg/m²)
2. 140mm (min) Celcon Hi-7 with any finish (120kg/m²)
3. 100mm Celcon block with any finish#

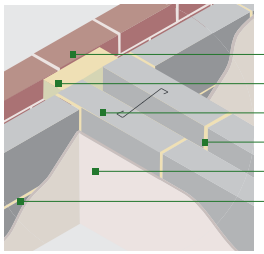
Flanking walls to Floor type 3 (timber) two solutions:
1. Core A, B, C & D – any 100mm Celcon block isolated panel finish
2. Core A & B – any 100mm Celcon block plaster finish or Celcon Hi-7 with 140mm plasterboard on dabs

Notes: Reference to SBSA Domestic Technical Handbook – Section 5 (Noise)

† The masonry should have a mass of 120kg/m² unless the length of the external wall is limited by openings:
- a) of 1m high
- b) in both sides of the Separating wall at every storey
- c) within 700mm of the face of the Separating wall at both sides

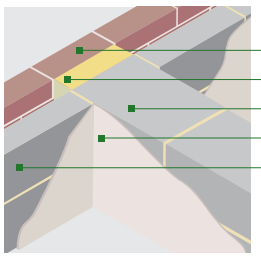
Where the area of openings in the external wall exceeds 20% of its area

2 Performance testing



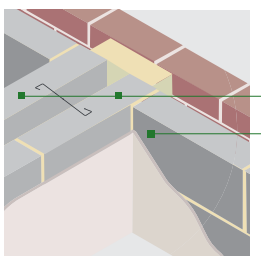
Cavity Separating Walls

- Masonry outer leaf
- Cavity closer
- **Separating wall** – 100mm (min) Celcon Standard or Hi-Strength
- 75mm (min) clear cavity
- Plaster or plasterboard finish
- **Flanking wall**



Solid Separating Walls

- Masonry outer leaf
- Cavity closer
- **Separating wall** – 215mm (min) Celcon Standard or Hi-Strength
- Plaster finish
- **Flanking wall**



Flanking Wall

- **Separating wall**
- **Flanking wall – two solutions;**
  Housing – any 100mm Celcon block with any finish
  Flats and Apartments with concrete separating floors – 100mm Celcon Standard or Hi-Strength block with any finish.

3 Robust Details

The Robust Detail constructions for Scotland are the same as those offered for England and Wales. However, the Technical Handbook – 'Domestic 2005' simply notes their existence rather than whether they will be accepted as meeting the requirements of the Scottish Building Regulations. Therefore we would strongly advise that contact is made with the relevant Building Control Authority prior to design or building with these solutions.

For further information regarding the Robust Details and solutions please see pages 4, 7, 10 and 14 within this guide.

If you would like further information regarding H+H Celcon aircrete products please visit our website

www.celcon.co.uk

or contact the following departments:

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