

LABC Acoustics
LABC Policy Conference Nottingham
Sep 2105


Identifying & resolving Customer
Complaints



Avoid Negative customer feedback & Above
all LABC **R**ectum **D**efendi!!!

- " Why have I failed the sound test.....Building Control approved my plans?"
- " All the works have been inspected throughout the build and the surveyor never mentioned that there would be a problem"
- "Why wasn't I told at the start of the project that I would need a sound test?"

© Presentations and their content are the copyright of LABC



Pro-active approach = Customer satisfaction

- What to look for on plans check
- How to inform your customers of the mandatory requirements
- What to look for on site
- Suggest an alternative approach to the scheme

© Presentations and their content are the copyright of LABC

3 |



ADE has performance standards..... but for what? Understand the requirements

Table 1a: Dwelling-houses and flats - performance standards for separating walls, separating floors, and stairs that have a separating function.		
	Airborne sound insulation sound insulation $D_{n,w} + C_w$ dB (Minimum values)	Impact sound insulation $L'_{w,v}$ 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
Table 1b: Rooms for residential purposes - performance standards for separating walls, separating floors, and stairs that have a separating function.		
	Airborne sound insulation sound insulation $D_{n,w} + C_w$ dB (Minimum values)	Impact sound insulation $L'_{w,v}$ 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

© Presentations and their content are the copyright of LABC

4



Plans Check confusion - Commercial & Domestic

0.8 The performance standards set out in Tables 1a and 1b are appropriate for walls, floors and stairs that separate spaces used for normal domestic purposes. A higher standard of sound insulation may be required between spaces used for normal domestic purposes and communal or non-domestic purposes. In these situations the appropriate level of sound insulation will depend on the noise generated in the communal or non-domestic space. Specialist advice may be needed to establish if a higher standard of sound insulation is required, and if so, to determine the appropriate level.



- Clarify requirements at Plans Check
- Ensure correct test regime is identified, instructed and followed

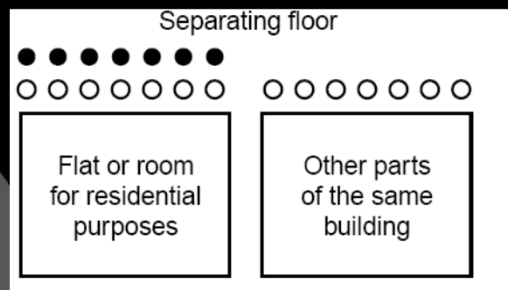
© Presentations and their content are the copyright of LABC

5



Commercial & Domestic

1.9 Tests should be carried out between rooms or spaces that share a common area of separating wall or separating floor.



© Presentations and their content are the copyright of LABC

6



Plans Check confusion - Decibel (dB) Myths $R_w = R_w + C_{tr} = D_n T_w + C_{tr}$!!!!!

- R_w Definition**

A single-number quantity which characterizes the airborne sound insulation of a material or building element in the laboratory.

- D_{nT_w} Definition**

A single-number quantity which characterizes the airborne sound insulation between rooms.

Warning they are not the same measurement!!



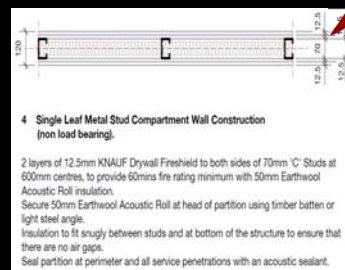
© Presentations and their content are the copyright of LABC

7

Plans check design weakness - Architects Party Wall Solution on BC Application

Separating Walls

“Party Walls to achieve minimum 60 minute Fire Rating & Airborne Sound insulation of (R_wB) 43dB”. See **Figure 5**:



© Presentations and their content are the copyright of LABC

8



Appropriate wall solution

Comment: unfortunately the party wall option is not designed to perform a separating function. The target sound rating on the drawing is a laboratory R_w 43dB which does not incorporate the spectrum adaptation term (Ctr) and therefore means that these wall selections **will not offer** the sound insulation performance of 43dB $D_nT_w+C_{tr}$ when installed on site. These walls are **NOT RECOMMENDED** for construction as separating walls.

21 GypWall quiet sf

Overall construction nominal width: 238mm

Gypframe 70'S 50' C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres fixed to one side of the stud

50mm Inver Acoustic Partition Roll (APR 2200) positioned in the cavity

Lined each side with a double layer of 12.5mm Gyproc SoundBloc or Lined with a double layer of 15mm Gyproc Curaflex for 120 minutes fire resistance

British Gyproc Approved System
England and Wales
Pre-Completion Testing required

The fire resistance and sound insulation performance are for imperforate partitions, walls and ceilings incorporating boards with all joints taped and flexion allowed according to British Gyproc's recommendations. The quoted performances are achieved only if British Gyproc components are used throughout, and the company's fixing recommendations are strictly observed. Any variation in the specifications should be checked with British Gyproc.

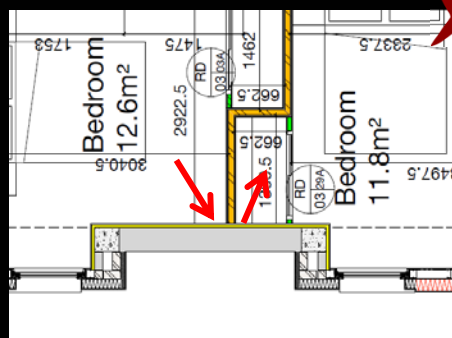
Refer to Flanking details, pages 162 - 165

GypWall = R_w+C_{tr} 53dB R_w 61dB

Plans Check - design weakness - "Flanking Sound" Issue

Comment: see the common mistake of having the wall lining run past the wall junction in this layout plan (Red Arrow). This provides a flanking noise path which will compromise the sound insulation performance of the separating wall.

Comment: The architect's detail shows the wall lining on a solid masonry building envelope element passing behind the separating wall junction detail. This will provide a significant flanking noise path that will be likely to compromise the sound insulation performance of the separating wall and should be amended.



Plans Check - Approval use Acoustic TGN

“Prior to completion, the appropriate sets of sound insulation tests must be carried out in accordance with section 1 of the approved document to Part E. Testing organisations should have appropriate third party accreditation (UKAS or ANC registration).

Relevant properties to be tested need to be agreed with Building Control at an early stage of the development.”

© Presentations and their
content are the copyright of
LABC

11 |



Approval - Timing of Tests

- The timing of the test is also important as it is preferable to have early indication of the performance of the property. This advice is covered in Para 1.29:

Normal programme of testing

1.29 Building control bodies should consult with developers on likely completion times on site, and ask for one set of tests to be carried out between the first dwelling-houses, flats or rooms for residential purposes scheduled for completion and/or sale in each group or sub-group. This applies regardless of the intended size of the group or sub-group. Therefore if a site comprises only one pair of dwelling-houses, flats or rooms for residential purposes, they should be tested.

Aids customer confidence

© Presentations and their
content are the copyright of
LABC

12 |



Approval - Further Testing rather than final testing!!

1.30 As further properties on a development become ready for testing, building control bodies should indicate at what point(s) they wish any further set(s) of tests to be conducted. Assuming no tests are failed, building control bodies should stipulate at least one set of tests for every ten dwelling-houses, flats or rooms for residential purposes in a group or sub-group.

1.31 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. However, on large developments testing should be carried out over a substantial part of the construction period.

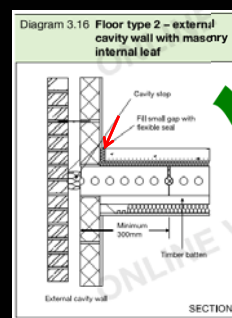


Don't give out bad news on final completion

Eyes on site - Poor detailing



Same principles apply to MCOU as new build - screed connected to wall



Resilient layer underneath the screed and returned up the perimeter walls

Dealing with Failure

Section 1 identifies failure as part and parcel of the testing process and offers specific advice on how failed tests should be addressed.

In particular it details 3 ways (a, b & c) in Paragraph 1.34 on p14 how the developer should demonstrate compliance with the sound insulation criteria to the satisfaction of building control. See below:

1.34 A failed set of tests raises questions over the sound insulation between other rooms sharing the same separating element in the dwelling-houses, flats or rooms for residential purposes in which the tests were conducted. The developer should demonstrate to the building control body's satisfaction that these rooms meet the performance standards.

<45dB DnTw + Ctr
>62dB L'nTw

- (a) additional testing, and/or
- (b) applying the appropriate remedial treatment to the other rooms and/or
- (c) demonstrating that the cause of failure does not occur in other rooms.

Client Support LABC Consult referral - The site is an existing vacant office building over 3 floors

Scope

The Client has proposed a residential development scheme at ?????? and wishes to comply with the current minimum standards of sound insulation with respect to Building Regulations Approved Document E 2003 (Rev 2015)

This report details the findings of an audit survey using, sound insulation test evidence of the 1970's office building (floor) construction which was carried out in order to determine the current sound insulation performance of the separating floor.



Existing Floor Construction

50mm Screed
 70mm Concrete
 Topping
 240mm Hollow Pot
 Total Thickness 360mm



Photograph 23: View of typical hollow suspended RC floor

© Presentations and their content are the copyright of LABC

17



Floor Audit Survey Results

Comment: in this case the existing separating floor should not require any further upgrade treatment in order to comply with the airborne sound insulation performance requirements but it does require some treatment in order to improve the impact resistance which is relatively poor currently.

1.1 Summary of Floor Airborne Sound Insulation Test Results				
Test Number	Source Room	Receive Room	$D_{nT} + C_p$ dB	Achieved ADE 2003 Value? Pass / Fail
15721-1-FA01	First Floor Right Office	Ground Floor Right Office	48	Pass
15721-1-FA02	First Floor Left Office	Ground Floor Left Office	46	Pass

1.2 Summary of Floor Impact Sound Insulation Test Results				
Test Number	Source Room	Receive Room	L'_{nT} dB	Achieved ADE 2003 Value? Pass / Fail
15721-1-FI01	First Floor Right Office	Ground Floor Right Office	71	Fail
15721-1-FI02	First Floor Left Office	Ground Floor Left Office	68	Fail

© Presentations and their content are the copyright of LABC

18



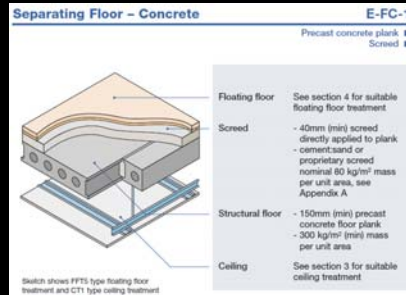
Architects Proposals Prior to Audit

Based the upgrade on an RD Solution using Floating Floor and MF Ceiling

Not Required = Cost Savings to client



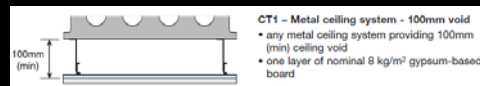
© Presentations and their content are the copyright of LABC



Impact Solution

Replace the expensive Cradle & Batten Floating Floor with inexpensive Resilient layer

Retain the service void with a ceiling with 100mm depth



© Presentations and their content are the copyright of LABC



Technical Support for LABC nationally

- Info@labcacoustics.co.uk
- Tel: 0121 270 3333
- Mob: 07779 212121

© Presentations and their content are the copyright of LABC

21 |



Questions?

- Are there any questions?
- Now is the time to ask.....
- OR:
- We will await a call from your Clients?

