

TECHNICAL NOTE: 0542018_DD002

TO: Steve Jones
FROM: Jordan Mayes
SUBJECT: 14-16 Regent Road, Wrexham: Separating Floors
DATE: 05 June 2018

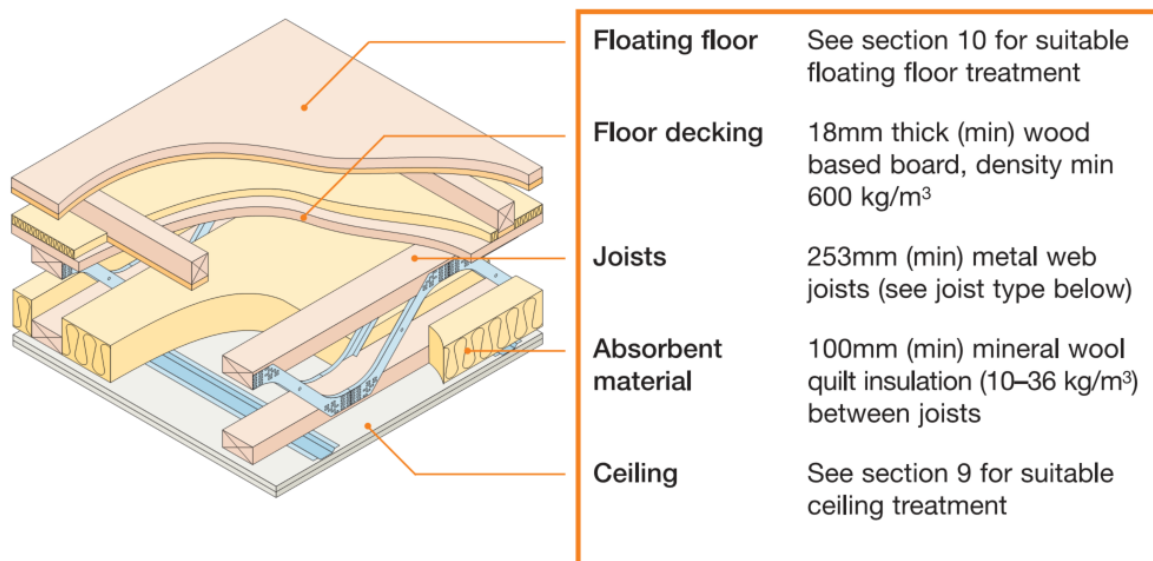
This Design Development Note (DDN) provides comment on the proposed separating floor constructions with regards their ability to meet the sound insulation performance requirements outlined in Approved Document E of the Building Regulations.

The airborne sound insulation performance requirements for separating floors are discussed in detail in Detailed Design Note 0542018_DD001 and summarised below for ease of reference.

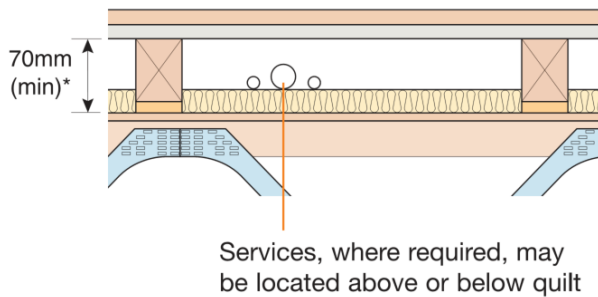
Table 1: Sound insulation performance requirements for separating elements in dwellings formed by a material change of use

Separating Element	Airborne sound insulation ($D_{nT,w} + C_{tr}$, dB) (Minimum values)	Impact sound insulation $L'_{nT,w}$, dB (Maximum values)
Walls	43	-
Floors & Stairs	43	64

It is understood that existing floors between ground - first floor, and between first – second floor will be removed and replaced. The proposed replacement floors will comprise the following build up:



The proposed floating floor is understood to comprise the following:



FFT1 – Resilient composite deep batten system for E-FT-3

- 18 mm (min) t&g flooring board
- gypsum-based board nominal 13.5 kg/m²
- FFT1 resilient composite deep battens
- battens may have the resilient layer at the top or the bottom
- mineral wool quilt laid between battens
 - 13mm (min) 33-36 kg/m³, or
 - 25mm (min) 10-36 kg/m³
- ensure any services do not bridge the resilient layer

* Note - Services may run within the floor zone (see Appendix A)

The ceilings to ground and first floor spaces will comprise:

- 16mm resilient bars fixed at right angles to joists;
- 2 x 15mm Gyproc Soundbloc Boards

The northern extent of the development includes an existing concrete deck of circa. 150mm depth with a 40mm screed at levels 1 and 2. This deck is proposed to be retained.

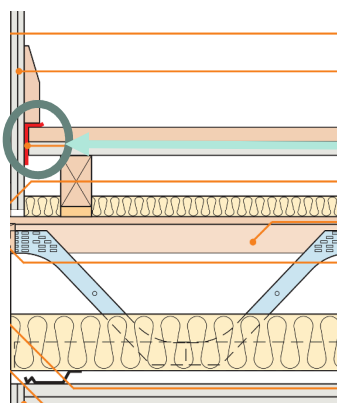
Recommendations

New Timber Floors

The proposed new-build timber separating floors are sufficient to meet the sound insulation performance requirements outlined in Table 1. In terms of value engineering, the following amendments could be made without compromising the suitability of the system:

- The Gypsum-based board below the 18mm tongue and groove flooring board on top of the floating timber floor battens can be amended from 15mm Gyproc Soundbloc Board to 12.5mm wallboard throughout.
- The ceiling to the ground floor retail units and first floor apartments could be substituted from 2 x 15mm Gyproc Soundblock Board to 2 x 12.5mm Gyproc Wallboard.

It is important that a flanking strip is included to isolate the floating floor from the surrounding structure, as indicated below. The skirting board should sit on-top of the folded flanking strip as identified in the figure.



Flanking Strip (Yelofon FS or similar)
used to separate floating floor from
the surrounding structure

Concrete Separating Floor

At level 1 the concrete floor will separate the Bedroom of Apartment 2 and retail space below. At level 2 the concrete deck will separate Bedroom 1 of Apartment 2 and Bedroom 1 of Apartment 4. As such, the separation should meet the sound insulation performance outlined in Table 1.

To control impact sound transmission we recommended a tongue and groove flooring board with a pre-bonded resilient backing is installed on top of the screed.

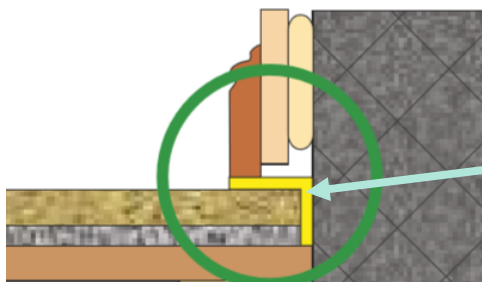
A suitable system is the [SoundDeck overlay Acoustic Floor Boards](#) by CMS Danskin (or similar). The selected system should achieve an impact sound insulation performance not less than $\Delta 17$ dB. The CMS Danskin system referenced above is 26mm thick and the floor finish can be applied directly to the floor boards.

Figure 1 - SoundDeck overlay Acoustic Floor Boards



SoundDeck® acoustic floor boards comprise a resilient layer pre-bonded to 18mm or 22mm Tongue and Groove flooring grade chipboard designed to reduce impact sound.

Again, it is important that a flanking strip (Yelofon FS or similar) is used to maintain the isolation of the floating floor system, as identified in principle below.



Flanking Strip (Yelofon FS or similar) used to separate floating floor from the surrounding structure

In addition, the ceilings below the concrete deck should include the following:

- 1 x 15mm Gyproc Wallboard layer suspended below concrete floor from a lightweight steel grid with 50mm Rockwool (33kg/m³) in void. The void depth can be controlled to match adjacent ceiling depth but should be at least 100mm.

A further design note shall be issued in due course identifying junction details between separating walls and separating / internal walls.

-End-