

Under-floor Insulation

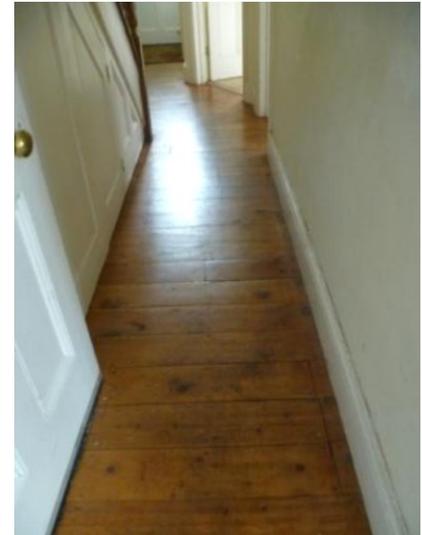
Method 2: removing one board every 1.2 m

We've previously written about how we insulated under our living room floor in 2012. This had rather poor floorboards, with a carpet on top, so we weren't too worried about a little extra damage from taking the boards up.

However, we also wanted to insulate under our hall floor, which has really nice exposed, polished old boards, so we wanted to damage them as little as possible.

Here's what we did.

When we'd insulated under the sitting room floor, we took this photo of the space under the floor: we have a 0.5m deep void, with sleeper walls every 1.2m. I think this is typical of Victorian/Edwardian homes, but more modern homes may well not have these sleeper walls.



Floor

Joist

Sleeper wall with
ventilation gaps

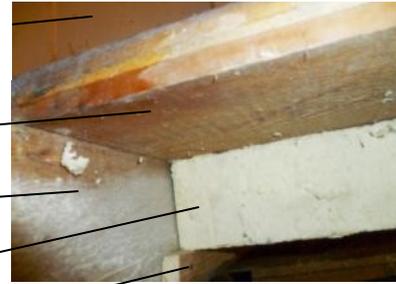
I didn't fancy getting down into such a small space, particularly as the sleeper walls meant that I couldn't do the whole space from a single access point, but we realised that if we took up just one board in the middle of each 1.2m bay, I could just reach far enough to push some carefully sized pieces of celotex insulation between the floor joists for the full width of each bay. Some of these boards had already been cut in the past, by plumbers or electricians, so they were quite easy to get up.

Although the celotex wedged in quite well, it clearly wouldn't stay there longterm with the vibration from people walking on the floor, so after I'd pushed the celotex into position I hammered in some little wooden blocks (sort of 'mega-staples') to hold the celotex firmly up against the underside of the floor boards. I made the celotex fit as tightly as I could up against the boards, in order to reduce air leakage between the boards. Where there were pipes, I insulated round them with rockwool, supported by some netting stapled to the joists, as done in method 1, used for the living room.

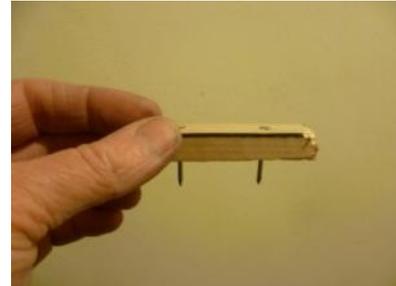
Here are some pictures of the process:

View of celotex in position, underneath the floorboards, held by a 'mega-staple'.

- Hole where board removed
- Underside of floorboard
- Joist
- Celotex
- 'Mega- staple'



A 'mega-staple', ready for use.



Hammering the mega-staples into the joists, to hold the celotex up against the underside of the floor boards.

In this particular part of the floor, which was in the cupboard under the stairs, there were several loose boards, so I had better access.

This is much less dusty that getting down under the boards, but I still found it useful to wear a dust mask



Putting the last block of celotex into position, before replacing the floor board.

- Celotex block, ready to go in
- Shiny surface of installed Celotex
- Dusty surface 0.5m below floor boards



Finished floor. We chose to fix the boards down with screws rather than nails, in case we ever needed access again.

We also made sure we'd sealed all the gaps where pipes came through the boards to reduce air leakage.



Variants

A few months after I did the first bay of the hall, using the method above, I did the remainder of the bays, trying out a few variants to speed up the process. In each case, I lifted one board every 1.2m

Variant 1: Thermofleece and tyvek

Over some of the area, I reached in through the lifted board and stapled tyvek membrane to the underside of the joists. I then slid thermofleece insulation into the gap between tyvek and floor boards. (I could also have used rockwool, but we had thermofleece reclaimed from another project, and it was nice and non-prickly to install)



To maximise its performance in reducing air leakage, I glued the tyvek to the walls at the sides.

Variant 2: Celotex and adhesive

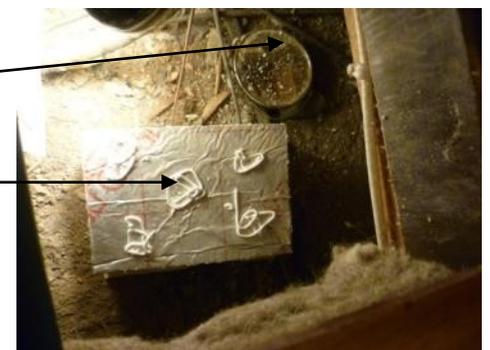
Having realised from our recent building work, how effective grab adhesives are, started using "I can't believe it's not nails" to stick carefully cut pieces of celotex under the floor boards, between the joists. To maximise the performance of the adhesive, I brushed off the cobwebs from the boards, and tried to get them reasonably dust free. The adhesive seemed to work pretty well: it allowed a little bit of repositioning, but was strong enough to hold each sheet in place and was much quicker than using the "mega staples" described above.



As backup, I hammered a nail partially into each joist to hold up the celotex. In some places, I could hammer a wedge on top of the sleeper wall, to wedge the sheet up against the underside of the floor boards.

shaving mirror. V useful for seeing what you're doing

adhesive on celotex, ready to install



We're very pleased with the result. The whole house seems warmer, probably largely because of the reduced air leakage, and the floor still looks great.