



Sid Bourne guarantees that if you follow industry standards for subfloor preparation and correct installation procedures, you'll never have an issue

It's not ROCKET SCIENCE

AS an independent flooring inspector, it's my business to analyse floor failures. What I know now and what I've learned over the many years, is if the floor fails, it does so because someone has failed the floor. The floor cannot make decisions on its own, it's merely a case of someone taking the incorrect actions or wrong choices. Of course, there are manufacturer defects which are fairly easy to identify but this month I'm specifically referring to failed installations.

The most common failure is owing to subfloor preparation or the lack of it. It's not rocket science - all we should expect of a subfloor is that it's flat, clean, dry and sound; leave any of these out and failure is likely.

The subfloor needs to be clean and free from contaminants, especially for glue-down floors otherwise failure is inevitable, with many then blaming the adhesive or the product. It's also vital for nail-down floors. As I sometimes discover when inspecting noises from nail-down installations, there's grit and debris under the flooring which creates the sound.

Also, you should clearly understand what goes into the screed onsite, as sometimes we get curing products which can prevent good bonding. I always say apply a small drop of water to see if it sinks into the screed readily; if it doesn't, then it's likely your adhesive will not bond sufficiently.

I was onsite the other day working on a new complex and inspecting another issue, when I noticed the installers who were bonding down an engineered wood flooring were picking up the dust on their trowels while also continuing to apply the adhesive. They're asking for trouble and it'll come by way of failure of the bond.

Continuing with the subfloor theme, what I hate is the response I usually get when I ask what testing of the subfloors took place to ensure it was dry. In most cases - which are inevitably related to Bob - they say the screed was dry as it had been down for a couple of months. This causes cupping or

lifting off the floor, which is claimed to be defective when in fact it's the subfloor which wasn't dry.

Every installer should have moisture testing equipment; one should be non-invasive to help identify the areas to install your hygrometer hood or sleeves while the other should be a pin-meter for testing wood products. Note I said that the pin-meter is used for wood and not concrete - I unfortunately talk to many installers who've checked the concrete with a pin-meter. The readings will definitely be wrong in that case.

It's internationally accepted that the hygrometer test for concrete/screeds is the most accurate. However, it's worth noting that some manufacturers state that the use of a calcium chloride test is the only test method that they go by.

Just a word of warning: concrete is like a sponge, so moisture will travel through the concrete regardless of a mechanical ground DPM on ground level, dependent on location and soil. That's why I always recommend a moisture-suppressant application to be safe, because even if your testing says it's dry, this is no guarantee moisture won't appear at a later stage and as such this is a prevention of potential future moisture issues.

Another common problem is uneven subfloors. Don't expect Bob the Builder to get you a lovely flat subfloor, it just doesn't happen. I've been in the flooring industry for more than 45 years and have never come across a flat subfloor - even the so-called pumped screeds which although flatter, aren't as perfect as we need them to be.

My pet hate is using adhesive to fill voids. Why on Earth would someone do this? It's wrong and the manufacturers just love recommending this procedure. They're just helping bad practice get worse.

Here's a true story to illustrate my point: I went to a site to inspect squeaking flooring in more than 20 apartments where the main

contractor bragged that the installers save a lot of money as they never use smoothing compounds but instead use adhesive to fill the voids.

On inspecting the squeaking, I saw literally hundreds of small repair holes. I asked him what he'd done in the apartments and he replied: 'We've filled the voids where the wood comes away from the adhesive - we use it all the time.'

I asked for the floor to be uplifted and discovered the trowelled adhesive had been built-up in areas of undulation in the subfloor. But when the floor had been installed it wasn't weighted down to force the wood into the built-up adhesive and this left a weak adhesion which eventually lifted and squeaked - surprise, surprise.

I wrote a spec for the replacement, which was the second one. The main contractor rang me on receiving the spec and gave me grief, saying it would cost a fortune and that he'd consulted the adhesive manufacturer who said they could fill the voids with the adhesive.

I told him it was up to him to which he responded that it would be more costly doing further replacements but he agreed to one apartment. Following the correct subfloor preparation procedure, the floor never failed in this one apartment, but the bad news is they replaced a further 14 apartments and followed the adhesive manufacturer's instructions by filling the voids with adhesive. Well, guess what: the floors all failed again and squeaked like a box of very angry mice.

I was then called into a meeting with the main construction company to discuss the reasons for the squeaking; they'd already received my report.

I pointed out the one apartment that followed correct subfloor preparation

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It's not ROCKET SCIENCE

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procedure was perfect, with no squeaking – it's not rocket science. They shook their heads and said to the main contractor: 'Why

didn't you follow the same procedure in the other apartments?'

The main contractor said: 'We may have made a mistake because we assumed the adhesive manufacturer was more reliable in resolving the issue than Sid. We thought his spec would fail. However, the opposite has occurred.'

In the end, it was agreed that in all apartments, the subfloor would be prepared to industry standards. I said I'd need

documentation to that effect. The floors have now been replaced and, 18 months later, there's no issue at all with squeaking.

I guarantee that if you follow industry standards for subfloor preparation and correct installation procedures, you'll never have an issue. Doing the first preparation correctly is key.

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Dominic O'Brien on the initial stages of mezzanine floor installation: planning, designing and budgeting

FROM OUR ARCHIVES

What's in it FOR ME-ZZANINE?

IT'S always astounding to hear how many individuals are unaware of the benefits mezzanine floor solutions can offer, whether it's to transform an office or a warehouse in a unique way or to increase operational efficiency.

Such a process leaves people with many questions, particularly whether it's feasible and practical or not to have a mezzanine floor installed.

Here I'll discuss the initial stages of having a mezzanine floor installed and explain the planning and design aspects and most importantly, the costs that might be involved.

Mezzanine flooring is all about using a space in an efficient and practical way. If anyone has run out of space at their property, need to fit more people in, need more storage or office space, mezzanine floors are a great solution; especially if there is a lot of height in the building. The start of a new year often comes with a need for an update in business.

This might be expanding staff levels, increasing stock intake in a warehouse or changing an office space. The reality is it might not be cost-effective to make drastic changes and particularly not to move premises. This is where mezzanine flooring could be a great solution; additional flooring that can be installed on existing surface,

including concrete floors.

A mezzanine floor is usually fixed to a concrete surface by simple floor anchors which are bolted through a square base plate, so it's straightforward to do. It can be installed quickly and easily and can be removed in the future, if necessary. After a busy Christmas, such an efficient installation is desirable, especially when making plans for the New Year. Knowing a space will be improved in a short amount of time can lend well to new business plans.

The mezzanine can be designed to suit the individual needs of a business or workspace, depending on staff levels and the type of business that requires the additional space.

The standard material for a mezzanine floor is a 38mm thick chipboard but metal durbar plate or plywood can be installed on top of this for heavy-duty use and it's possible to apply a soft matting on top of this, particularly in warehouses where people can be on their feet for long periods of time. All of the steel work is pre-painted in standard colours such as light grey, dark grey and royal blue to keep the costs down.

Clients often ask if the designs can be changed at any point in the process. They can be changed during the design stages where plans can be redrafted based on materials and colour requests, but once the design is sent to be manufactured it's non-reversible.

Quite often, if the roof space allows for it, a mezzanine floor can be built on multiple levels and isn't restricted by height. In terms of design, it's actually very flexible but the most efficient layout for a mezzanine floor is

usually single or double.

It's often recommended to have wide spaces between the column supports up to 14m, although this is usually a fairly standard procedure anyway. It's important to note any issues can be resolved with an engineer at survey level.

When installing a mezzanine floor, there are additional costs to consider depending on the exact requirements. Fire safety needs to be analysed such as means of escape and staircase evaluation and it's often advised to have air-conditioning installed for the floor as it can get hot in the summer. The general guideline is that if a mezzanine floor is more than 20m in any direction it will need fire protection.

As well as this, if it's been built over more than 50% of a space, it'll need to be fire protected and if there are people present in the space then it certainly will need to be. The level of design and detail can make a big difference to a budget, but each space is different.

Furthermore, it's often queried whether planning permission or building regulations are required when having a mezzanine floor installed. There's no limit to the size of a mezzanine floor but sometimes if a space is too large, planning permission might be needed.

It's statutory to get building regulations approval but this is something any reputable mezzanine flooring company can obtain for a client, so it should be relatively straightforward as part of the initial process.

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