

THE COMMERCIAL FLOORING REPORT

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Flooring Product Failures

Flooring product failures, or the interpretation of a flooring failure being the reason for a disappointment, are the cause of most flooring concerns and complaints. The scenario typically follows the planning of a project, the consideration of a flooring material or materials, contemplation of the type or types of flooring to use, consideration of samples presented for use, selection of the flooring materials, the decision on what to use, where to install it, when to install it and the anticipation that it will deliver the performance expected of it. After spending a great deal of time and money the worst feeling is to see the total investment taking a turn for the worst within a short period of time after it is put into use. Why does this happen and how can you take precautions so that you aren't a victim of a flooring failure?

There are several reasons why a flooring material may fail after installation. One is that the material itself may be defective, that is some aspect of the manufacturing process was not up to par causing the material to fail. With carpet this could be anything from the dye used to a finishing problem. For example, the color of the carpet could be fading within a short period of time because the colorfastness to ultraviolet light does not meet the minimum standards required by the industry. For hard surface flooring the material may appear worn or the surface pattern is going away, this could be due to the wear layer being thinner than it should be and the surface pattern abrading off. A product may have been compromised by an installation issue such as not enough adhesive being used, the wrong adhesive or the inappropriate application of the adhesive.

Environmental issues may cause a failure by the swings in the HVAC system cycling causing expansion and contraction of the flooring material, wood for example, could lift, curl, cup or split. The substrate may be at fault having high moisture vapor emission and with it high alkalinity that can cause the installation to fail or adhesive to emulsify and squeeze up through the flooring surface or joints. Soiling may cause a failure as the flooring could be discolored or the surface appearance masked. Maintenance may cause a failure because it is not being performed with enough regularity and the wrong materials may be used that aren't conducive to maintaining the appearance of the flooring material and may in fact be causing damage. These are only snippets of causes from a number of categories and certainly far from all the factors that can cause a flooring failure which results in a disappointment to the end user.



There is always an answer as to why a flooring material fails or an explanation for what is happening to cause the dissatisfaction of a flooring material. After all, isn't all flooring pretty much the same and shouldn't it all perform as an end user would expect it to? The answer is no, of course. All flooring material is not the same in its respective category and it all performs differently under different circumstances and use. In addition the way the flooring material is used, cared for and maintained will have a profound effect on how it will perform. For example, one school may have a carpet installed for 15 years that looks close to the way it did when it was installed. Another school may not get two years out of the same product before it looks like it was the base for battle tank exercises. The reason in this particular situation is not relative to the carpet construction or quality but the way it is maintained. It's a failure to be sure but not for the reasons one may have thought. Take the same carpet and let's talk about the seams, sometimes the weakest part of an installation if they are not prepared and sealed properly. In the first case the seams may be hard to find, in the second, that of the failed carpet, the seams may be coming apart, fraying, fuzzing and the carpet delaminating. The difference could very well be attributed to the installation and the way the carpet is being used. We find that the lower the grade level, K through 6 for example, the more the flooring is compromised. The higher the grade, junior high to senior high for example, the less compromise to the carpet. Why should this be? There are more activities on the K through 6 floor, such as arts and crafts, more physical movement by the students and not the same level of activity in higher grades. Furthermore, an open floor plan using tables and chairs constantly being moved about in the space will subject the flooring, carpet in particular, to activities crossing over the seams that can damage them if they are not made well.

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Expectations are always high for new flooring; after all, flooring is a major expense which includes proper floor prep and installation. In a commercial setting it is not unusual for the flooring to cost well into the six figure category and beyond. Besides, the flooring has to be installed when the space is empty, whether new or a renovation. A flooring failure after occupancy raises the stress levels for the building owner, manager or tenant. It can also demoralize the staff and if the flooring material integrity is compromised, create a hazardous condition. A recent situation involved a flooring material that created a tripping hazard. The flooring fix was a minimal expense; the resultant law suit from the injured employee was well into six figures. No one

Figure 4

CLEANING
Recommended flooring maintenance

Traffic Level	Pile Lift	Spot Clean	Deep Cleaning
Light	As needed	Daily	Annually
Medium	Quarterly	Daily	Every 6 months
Heavy	Monthly	Daily	Quarterly

Light Traffic - Private offices and cubicles
 Medium Traffic - Shared offices, interior hallways and conference rooms
 Heavy Traffic - Entrances, elevators, main hallways, break rooms, work/copy rooms & mail rooms



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installs new flooring expecting a failure. In fact they don't ever expect a failure to occur in performance or appearance. A rapid loss of appearance sets off alarms that there must be something wrong with the flooring material. That may be true but more often there's something wrong with the specification or selection of the product.

In a recent case a vinyl flooring material surface was wearing off and it had only been down for four weeks. It was sold as a commercial product with what was said to be a five year wear warranty. When tested the products surface wear layer was thinner than a sheet of paper and on the abrasion test it didn't make it to 1,000 cycles. To put that in perspective the product should have gone beyond 20,000 cycles and still not shown any wear and the wear layer should have been three times as thick as it was. Not only was this product clearly defective but it was sold as being appropriate for the application. Which brings up another large cause for flooring failure and that is being overzealous in representing a product when it is being sold. Words cannot be expected to make promises the flooring material can't keep.

Ignorance is another common cause for a flooring failure. Just because the product is being represented as a perfect selection or choice for a particular application doesn't mean it will actually perform as expected. The type of material matters not, the lack of knowledge about what the product is actually capable of doing on the floor is the kiss of death.

What I've actually been talking about here is not so much a flooring failure due to the more common reasons one may think is the cause; a defective material or installation but the representation of the product by whoever is doing so, whether a sales rep, flooring contractor or architect who doesn't understand how the product is going to be used and what it is expected to do or thinks it is far more capable than it actually is, which is the more dangerous situation.

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So here are the starter questions you should be asking when selecting flooring material for a renovation project:

1. What Flooring Do You Have Now?
2. What Do You Like About It?
3. What Don't You Like About It?
4. What Are Your Expectations For Your New Floor Covering?

If this is a new project, naturally numbers 1 through 3 are irrelevant. Number four is imperative and, if it is a major project, you should be seeking professional advice that will take the questions beyond what's listed here. We can help with that. I'd rather you stay out of trouble from the onset of a project than find yourself embroiled in a mess that you can't possibly escape from without being harmed. Life's too short to be stressing out over flooring concerns that could have easily been prevented.



Systems like EnviroSTIX for hard surface and hard backed flooring materials are systems that will help prevent the failure of flooring installations. There is more technology coming, most of which we are involved with. We'll keep you informed to help you. In the meantime understand that moisture, temperature and humidity have a profound effect on flooring materials and the integrity of their installation.