

Troubleshooting Before the Fact

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Posted: May 27, 2008



Failure to adequately remove adhesive residue or clean the substrate can cause failures when the patching compound or the new adhesive does not adhere to the residue. In this case, the tile was curling and was easily lifted from the floor by hand, taking the patching compound with it.

It's that time of year when *FCI* publishes the annual troubleshooting guide. I have done several of these columns now and I hope you have found the information helpful. Last year, I covered troubleshooting from a "how to do it" point of view in the interest of helping our readers who may be considering a career as an inspector. This year I'd like to go back to what we have covered in the past – what causes resilient flooring to fail? Knowing this can help you prevent problems before the floor ever gets installed.

Troubleshooting is one of the things I do for a living – analyzing why floors have failed and offering recommendations on how to fix the problem. Unfortunately, when a floor fails, the fix, more often than not, is to take up and replace the floor and that is a shame for several reasons including the tremendous inconvenience to the customer who owns the floor, the cost to whomever is responsible for the failure – often a shared expense the installer, dealer, distributor and/or manufacturer of the floor covering, and the impact on the environment when a perfectly good floor is removed and thrown away.

Several things come to mind as far as what I have seen in 15 years of troubleshooting resilient flooring failures. If these issues were addressed instead of ignored, a lot of flooring failures would not happen in the first place. Before, during and after a resilient installation there are preventable problems that if addressed can eliminate complaints. Here are just a few.

Moisture Testing



Moisture testing can detect problems before the floor is installed so the problem can be addressed. The testing should be done by an independent agency whenever possible.

If you are installing a floor over concrete without testing the concrete or at least asking if there are moisture test results available, I respectfully say "Why?" Moisture continues to be the #1 cause of failure for resilient flooring installed over concrete, so why do so many floors continue to get installed over untested floors? The industry standard, ASTM F 710 says "All concrete slabs shall be tested for moisture regardless of age or grade level." Every flooring and adhesive manufacturer says the same thing. If you do the job and the concrete was not tested and the floor fails because of moisture then YOU, the installer and the dealer, are responsible. You can't blame the concrete guy or the general contractor or the manufacturer or the building owner. You are the professional. You should know the industry standard. If you don't follow recommendations and the floor fails, you will buy the job.



Adhesive Residue



All of the solid vinyl tile on this installation curled because clear thin spread VCT adhesive was used instead of the recommended hard setting acrylic adhesive.

My most recent inspection was a rubber floor that was popping up. I lifted a tile and the patching compound was adhered to the back of tile and had released from the concrete. The concrete had a thick layer of black adhesive residue on it. I normally don't mention brand names but a section in the Ardex website really covers this point well. "Specific Ardex underlayments can be installed over a thin layer of cutback or other non-water-soluble adhesive residue."

Notice it says thin layer, which means no visible trowel notches. You can't just rip up old VCT and skim coat over it! It also says non-water soluble. That means old carpet adhesive, VCT adhesive, and just about any adhesive that is not black has to come up. The bottom line is when an old floor comes up, the adhesive has to be dealt with. In the job I mentioned above, the black adhesive was the weak link that caused the floor to fail.

Ardex continues, "Since the weakest link of the system will be the bond of the adhesive to the substrate, it is important that the adhesive be very thin, firm and have a good bond to the substrate." You won't find a single manufacturer of patching compound who disagrees with these statements and yet I can't tell you how many failures I have seen where the old adhesive residue was not dealt with properly.

Acclimation

Every flooring manufacturer recommends acclimating their product to site conditions for 48 hours or more before installing it. Why? Because we are dealing with products that can change in dimension when they get hot or cold. Ever see a vinyl tile or cove base job that has gaps in it? I can assure you that the installer did not install it that way and the product did not shrink. Chances are that warm product was installed, which caused it to "grow" a little before installation, and then when it cooled to room temperature it went back to its original size; thus, the gaps. On rectangular products like wall base, vinyl plank or vinyl edgings, the installer can inadvertently stretch the product while handling it with the same results. The same is true with sheet goods or large format tiles. Believe me; the manufacturers don't call for acclimating the product to make your job harder. There is a good reason for it.



Too much adhesive was used on this sheet vinyl installation so it never quite set up, and a day later when furniture got rolled in, it left marks behind because of the soft and still wet adhesive. Photo courtesy of Peter Austin.

Adhesive Selection



This floor was unprotected after installation, so tiles shifted, the surface got scratched and when they sanded the drywall the scratches

Dealers and installers are often tempted to cut corners when it comes to adhesives for resilient and other floor coverings. Obviously, everyone is trying to save a nickel however they can. However, I'll offer a few pieces of advice if I may. First, make sure the adhesive is made for the product you are installing. VCT adhesive does not work well on solid vinyl. Second, check the spread rate. The less expensive adhesive may not go as far. Compute your cost per square foot and you may be surprised that the less expensive adhesive actually costs more per square foot. And, finally, make sure the adhesive manufacturer is going

and tile joints turned white.

to stand behind you if there is a problem. If you switch away from the flooring manufacturer's adhesive, it gets them off the hook in a lot of ways because a lot of what can go wrong with a resilient installation happens under the floor. Gapping, shrinkage, moisture problems, indentation and a host of other problems can be traced to the adhesive, and you can bet if you didn't use the flooring manufacturer's adhesive they are going to be reluctant to help you out.

Trowel Notch

This is another area where I have seen a fair number of resilient failures, and it is so easy to prevent. More often than not, too much adhesive is the problem rather than too little. For example, 1/32" U -notch trowel is used on many sheet products, solid vinyl tile and over a non-porous substrate. However, a 1/16" square notch is very common for products like Vinyl Composition Tile. If that 1/16" trowel gets used for applications where a 1/32" is called for, you run the risk of adhesive oozing or indentations in the finished floor because there is too much adhesive there. More is not necessarily better, especially on products and substrates that are not porous because there is very little absorption of the adhesive. How to prevent it? When I was a dealer, I made sure that when a job came along that required something different as far as trowels, I ordered one for the job or even better, kept a box of "throw away" trowels with a 1/32" notch on one side and a 1/16" on the other. Installers can do the same thing, and some resilient manufacturers are shipping trowels or trowel blades with their adhesive to be sure the right trowel is on the job.



On the other hand, this installation in a busy corridor was well protected after installation and was beautiful the day the owner moved in. Photo courtesy of Kevin Mays.

Protection

Ideally, the floor covering should be the last thing done on a job other than some moldings and paint touch ups. However, we all know it doesn't always work that way so the question of who is responsible for protecting a floor after installation often comes up. Damage of brand new floors from construction traffic is a major problem that installers often get blamed for. Every flooring manufacturer has instructions saying something like "if construction is to continue after the floor is installed, the floor must be protected from damage."

To prevent this, the dealer and/or the installer can offer the service to the owner of protecting the floor after installation as per manufacturer's guidelines. Most times they will take you up on this service. Before you leave the job, put yellow "caution tape" up keep people off the floor. Tell the owner or the job super that the floor cannot be walked on. "The floor is done and the adhesive is setting so I'll be back tomorrow to cover the floor" puts them on notice. If you come back the next day and see damage, you can go right to the owner or job super and point it out. At the same time, the second trip gives you a chance to make adjustments that need to be made like fixing a loose tile. On light traffic job sites, protection is as simple as spreading some brown Kraft paper on the floor and taping the sheets together. If there is rolling traffic present, then boards such as "Masonite" or plywood should be put on top of the paper. Don't use pink rosin paper that can stain the floor if it gets wet, and don't put the boards directly on the new floor because if the boards move around at all there could be damage to the new floor. Either way, sweep the floor before covering it so you don't trap any sand or grit.

Preventing complaints is not always easy, but since installers are so often blamed, it pays to take a little extra time to prevent problems. Installers and dealers that don't have a lot of complaints will have a lot of repeat business and word of mouth sales from the owners and contractors they work with and your distributors manufacturers will support you as well.

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