

## Let's Talk Resilient: Renovation Frustration

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Installer tips for installations in older buildings

Renovation projects are tough for all trades but resilient flooring installers have a number of obstacles to overcome in order to do the job right and by the book. Here are just a few areas of concern when it comes to renovation projects when you are dealing with old floor coverings or subfloors that need to be addressed before installing the new floor.



An unsuitable plywood subfloor being covered with new plywood. (Photo courtesy of Mickey Moore - FCI October 2004)

### Site Conditions



This floor released from the substrate — patching compound and all — because the installer failed to clean the old concrete slab before applying a skim coat. (Photo by Christopher Capobianco)

Like a new construction site, an existing building that goes through a major renovation often does not have the climate control system running. It is important to let the contractor know that resilient floors need to be installed at a temperature of 70 degrees Fahrenheit plus or minus 10 degrees or so depending on manufacturer's guidelines. Not honoring this requirement can result in a floor that does not lay flat, adhesive that does not set properly, tiles that shrink or any number of other problems caused by extremes of temperature.

### Moisture Testing

ASTM F 710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring clearly states that **All concrete floors shall be tested for moisture regardless of age or grade level**, a guideline that every flooring and adhesive manufacturer also includes in their specifications. It does not say only test new slabs and it does not say only test slabs on grade or below grade. Many moisture related flooring failures occur when it is assumed that older slabs do not have moisture problems or that because an existing floor is in good condition a new floor can be installed without having to test.



All concrete slabs must be tested for moisture regardless of how old they are. This photo shows the ASTM F 2170 "in Situ" Relative Humidity test that measures moisture inside the concrete slab. (Photo courtesy of Sean Fallon of Tramex)

### Asbestos



When dealing with old floors or adhesive residue, refer to the RFCL Recommended Work Practices, available at [www.RFCL.com](http://www.RFCL.com)

When dealing with existing resilient floors it is important to consider the "A word". Asbestos was phased out of floor coverings in the 1980s but to be safe if a floor was installed in the early 1990s or before and you plan to tear it up it should be tested. Asbestos was used in backings of many sheet vinyl floors, 12-by-12 and 9-by-9 tiles and black "cutback" adhesive. In many states it is illegal for flooring installers to remove these floors so don't take any chances in floors that are 15 years old or older. The liabilities are enormous if you rip up an asbestos containing floor covering and contaminate the building you are working in, plus you put your own health and that of your customers and co-workers at risk.

### Existing floors

There are two rules for installing over an existing resilient floor and the manufacturer of the new flooring material is the one who writes the rules. They will either say do not do it or do it if there is only one layer down and that layer is clean, dry, securely bonded, properly prepared, and non-cushioned. Installation over more than one layer is a bad idea, because you are relying on two old adhesives to hold the whole system together, plus the new floor will be that much softer and prone to damage if it is installed over two or more layers. I don't recommend resilient over resilient if the finished floor will be subjected to heavy rolling loads or point loads such as hospital beds, heavy furniture or fixtures. If the existing resilient floor is textured, an embossing leveler can be used to smooth the surface on a residential job, but in a commercial installation it is generally not recommended to go over an existing resilient floor such as VCT or sheet vinyl with a "skim coat" of patching compound or embossing leveler. A lot of people in the industry seem to be unaware of this fact but if you check with the manufacturer of the patching compound you learn this is usually not recommended.



This floor failed because white acrylic adhesive was applied directly over black cutback residue without proper preparation. (Photo by Christopher Capobianco)

If installing over an existing hardwood floor that is over a wood subfloor, perimeter adhered sheet vinyl can be installed directly over the existing floor but a fully adhered resilient floor will require the installation of an underlayment, as we discussed in my column last month. A 3-inch wide (or less) tongue and groove wood floor should be covered with a minimum 1/4-inch thick underlayment and boards wider than 3 inches should be covered with a 1/2-inch or thicker underlayment. I recommend good quality plywood underlayment (not lauan).

Existing terrazzo floors can be covered with resilient flooring if properly prepared using a patching or leveling compound according to the compound manufacturer's instructions. Special care needs to be taken to assure the metal divider strips in the terrazzo floors don't telegraph through to the new floor. The same hold true for resilient installed over ceramic tile or stone. In all these cases it pays to have a good relationship with the rep from the patching or leveling compound you use because their guidance and training can be a lifesaver in tricky floor preparation cases such as these.

### Adhesive Residue

I can't count how many times I have seen an installer take up glue down carpet or VCT, patch over the adhesive and install a new resilient floor over it all. This process is not recommended at all by manufacturers of patching



compound, adhesive or flooring, and the industry standard ASTM F 710 states that floors shall be "free of residual adhesive". The risks of installing resilient flooring over adhesive residue even if is skim coated with the best patching compound is that the water in the patch may soften the old adhesive. Then, the patch will release and the whole system will "blow off the floor". Even if that doesn't occur, the old adhesive will create a "cushion" effect under the floor that will lead to indentations. Another problem can occur when the new adhesive and the old adhesive react with each other and cause disbonding or discoloration of the new flooring.

In the case of black cutback adhesive, if the residue is properly scraped down to just a thin translucent residue, it can be skim coated with certain types of patching compound, often mixed with a liquid additive. However in this case the substrate becomes non porous so if the adhesive you are using for the new floor is recommended for porous floors only it will not work over this system. Plus, not all patching compounds will completely encapsulate the cutback so there is a risk of staining of certain types of vinyl flooring. The best thing to do when dealing with any type of adhesive residue is to consult the manufacturer of the patching or leveling compound for guidance.



The yellow stain in this sheet vinyl flooring was caused by a chemical adhesive remover that got into the cracks in the concrete and then after the floor was installed worked its way through a patching compound back up to the surface into the backing of the vinyl.

### Adhesive Removers



How it should be! This renovation project was done under good site conditions and the substrate was properly prepared so the finished floor was flat and smooth. (Photo by Christopher Capobianco)

Whether the floor is going through an asbestos abatement or there is just a standard rip-up of old floor covering it may be tempting to use a chemical adhesive remover to clean the substrate. However, there are a lot of warnings from adhesive and floor covering manufacturers about this practice. ASTM F 710 states, *There are a number of commercial adhesive removers that will properly remove adhesive residue from a subfloor; however, there are concerns that these products may adversely affect the new adhesive and new floor covering. The Resilient Floor Covering Institute's (RFCI's) recommended work practices for removal of existing resilient floor coverings and the resilient flooring manufacturer's written instructions should be consulted for a defined set of instructions which should be followed if existing adhesives must be removed.* The problem is that chemical adhesive removers are made to dissolve adhesive so if any is left behind on the substrate there is a risk that the new adhesive will be affected. Another potential problem is when adhesive remover is used to remove black cutback residue and the soup of old adhesive and the removal chemical settles into cracks in the concrete. Even if the cracks are patched this residue can work itself up to the surface and discolor the new floor from the bottom up.

### Water Damage or Other Soft Wood Subfloors

Soft spots caused by damage to the subfloor such as water damage need to be removed completely. Find the floor joists and mark them on the surface, then cut down the thickness of the subfloor, placing the cut in the center of the joist so that the existing good subfloor still has support and so the new piece you put in will also have support. Once you remove the existing subfloor, measure the thickness and replace the cut out piece with plywood of that thickness. Do not build up thinner layers of plywood such as 1/4-inch because they will not be as strong as a single layer. If the repair is in a heavy traffic area, use cross pieces such as 2-by-6 or 2-by-8 board between the joists for extra support. Once the subfloor is repaired and everything is solid, cover the entire floor with a good quality underlayment to be sure the new flooring is installed on a smooth substrate.

### Sloped Subfloors

If a floor is sloped but otherwise solid, you can decide to just cover it or level it. If it is decided to level it, self leveling underlayment is the best way to go. This is far easier than trying to build up the floor with multiple layers of troweled on patching compound or plywood or whatever other "cheaper" alternative you might be inclined to use. Self leveling does it the best and does it the fastest. Before proceeding with a self leveling underlayment job, make sure all instructions are followed to the letter, especially the mix ratio of the underlayment powder to water. Too much water may make the mix go further, but it will result in a weaker mix so don't add extra water no matter what. Also, pay attention to things like moldings or wall coverings when leveling – they may need to be removed, changed, or protected.

As I said, there are a lot of challenges in renovation projects, especially in older buildings. A lot has been written here in FCI about floor preparation and underlayment, so use the resources on the FCI Website to research any questions you might have. Since so many of the issues are related to floor preparation, it pays to have a good relationship with your favorite manufacturer of patching compounds or underlayments. You also should consider the training courses available from these manufacturers, excellent training opportunities that can help you and your team master some of the intricacies of floor preparation and leveling.

Proper planning and "by the book" preparation and installation will make sure your customer has a terrific looking new floor and that everyone avoids "renovation frustration".



Gapping vinyl plank, vinyl base or vinyl edgings is a condition often caused by installing product that has not been acclimated to job site conditions. Vinyls tend to expand or get stretched when they are handled in very warm conditions, and then they return to their original size when they cool to normal room temperature.