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Let's Talk Resilient: Rubber Flooring Installation Tips from the Pros

by Christopher Capobianco



Getting the floor good and smooth is an important part of floor preparation for rubber flooring.

Rubber flooring is one of the oldest types of resilient flooring -- it's been around for generations. It is generally used in commercial environments, and with improvements in colors and visual appearance, is experiencing a growth in sales in recent years. I don't recommend rubber for most residential applications, especially kitchens, because it is not at all resistant to animal fats, vegetable oils, or petroleum-based materials. However, for commercial installations (except kitchens), it is tough, slip resistant, very durable and relatively easy to maintain. I always recall an office building I used to visit in New York City that had marbled design 9-by-9-inch smooth rubber tile installed in the elevator. I would bet the floor was at least 40 years old, maybe older. Elevators, especially in Manhattan, are one of the



Failure to thoroughly mix epoxy is a cause of adhesive failure.

toughest flooring traffic areas, and it seems no matter what floor is installed, you see them wear through, crack, or just look terrible. Not this floor – it was not showing any wear, there was no cracking, and the joints were as tight as they could be. From that point on smooth rubber became my flooring of choice for elevator environments.

For some tips on installing rubber flooring I asked two experts in the field to give me some feedback - Dave Harris, Commercial Sales manager for the R.C.A. Rubber Company, and Guenther Kerscher, Technical Director for the Nora Rubber Flooring Division of Freudenberg Building Systems. Both were generous with their information and I thank them for their assistance.

For starters, job site conditions are, as with all resilient products, a key to success. Make sure the building is climate controlled – ideal conditions are around 70 degrees Fahrenheit and 50 percent relative humidity. That means if the building does not yet have the heat or air conditioning on, don't start the job. Get the material on to the job site at least two days before installing, if not longer, so the product can acclimate to the building conditions. If the area is exposed to direct sunlight, keep the flooring out of the sunlight by covering those windows while the product is acclimating, during installation, and after installation until the adhesive is cured.

As always, be sure somebody has done moisture testing. I have covered this a lot in my past columns, so I won't repeat myself. If you haven't seen some of this information about the causes of moisture related failures and ways to test for it, I recommend you go to the FCI website at www.fcimag.com and look me up. Failure to do moisture testing is still the number one cause of flooring failures, and rubber is no different. Don't assume that if you are using an epoxy adhesive that this makes a difference – the concrete needs to be dry!

As far as surface preparation, it pretty much the same as with other resilient flooring products, but rubber flooring should not be installed over existing resilient products. Follow the guidelines in ASTM F 710, which states that existing concrete substrates must be “be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, curing, sealing, hardening, or parting compounds, alkaline salts, excessive carbonation or laitence, mold, mildew, and other foreign materials that might prevent adhesive bond.” If you are going to install over an existing terrazzo or other finished stone or ceramic floor, clean and rough up the surface by mechanical means such as bead blasting, grinding or scarifying.

To make sure the floor is smooth, follow ASTM F 710: “Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities shall be filled or smoothed with latex patching or underlayment compound recommended by the resilient flooring manufacturer for filling or smoothing, or both. Patching or underlayment compound shall be moisture-, mildew-, and alkali-resistant, and, for commercial installations, shall provide a minimum of 3,000 psi compressive strength.” Check with the rubber flooring manufacturer to see if they have specific product recommendations for floor preparation. Above all, make sure the substrate is very smooth before you start laying the floor. Any dips or low spots in the floor can be a cause of bubbling after installation if air gets trapped there, especially if the job is done with a reactive adhesive (epoxy or polyurethane). Because these adhesives don't have much initial tack, they won't pull the flooring down into these low spots, and an air pocket can be the result.



Adhesive may fail if the epoxy is not thoroughly mixed.

Once all of the conditions and floor preparation issues are taken care of, it's time to lay the floor. If you have never worked with rubber, you'll find that it

is flexible to work with and easy to cut, but the adhesive application and laying of the tile has to be done just right. It's not that tricky, but you can't cruise through the job as if you were working with VCT, so take your time.

First, check the instructions to see if the tile is to be laid all in one direction or quarter turned. It may depend on the product – some instructions call for laying all in one direction and others say you must quarter turn. If there is not a specific manufacturer's guideline, it may be a matter of taste, so check with the customer or the designer. There are usually arrows on the back of the tiles to help you follow the tile's direction.

Since rubber tile is set into wet adhesive, make sure you don't spread too much adhesive at once. Check the recommended open time and figure on the low side. In other words, if the instructions say cover the adhesive within 30-45 minutes; don't spread more adhesive than you can get tile on in 30 minutes. If the adhesive "skins over," it becomes useless and the only remedy is to scrape it off the floor and start over. You are better off moving slowly, a few rows at a time.

Although it is most common to install rubber tile with two part reactive adhesives, some floors can be installed with water-based or water-borne acrylic adhesives, depending on the manufacturer's guidelines and the finished use of the floor. Since these adhesives vary in their use, take the time to read up before you start the job. Application also may vary depending on the substrate – porous substrates will need a much shorter open time than non porous ones. Check on the details before you begin.

When using reactive adhesives, mix thoroughly according to the instructions. Too short a mixing time (or not mixing at all) is a major cause of failure in these types of adhesives. Check the guidelines by the manufacturer – some call for a very short open time and laying the tile in wet, others call for the adhesive to be left open until it gets "tacky." Reactive adhesive don't get that real strong "sticky" surface like a pressure sensitive, but some products will develop a bit of tack. The open time may be up to 30



Using the wrong adhesive and a concrete moisture condition caused the ooze on this rubber tile installation. Thanks to Bill Baxley for the photograph.

minutes depending on temperature and porosity of the substrate. After the proper open time, lay the tile into the adhesive and roll according to manufacturer instructions. The longer open time can help prevent sliding of the tiles, or oozing of adhesive between the seams. In this case you can work on top of the flooring, but do so carefully so the tiles don't shift.

When setting rubber tiles into the adhesive, don't pressure fit them. If you kick or push the tiles too close together, the seams will peak because the tile does not shrink like some other resilient tile can, and since rubber flooring adhesives do not have a strong initial tack to hold the edges down, fitting too tight will result in peaking tile seams. Fit the tile net, but not so tight that the edges are peaked.

Failure to roll flooring is a major cause of failure. Use a 100-pound roller to be sure you have good contact of the flooring into the adhesive. Check the transfer by lifting a tile from time to time. If laying into wet adhesive, don't roll too soon because the tiles may shift. Wait the recommended time and then roll across the width and length. Roll each section as you install it, and roll the entire area again when you are done. It's also a good idea to come back a half hour later and roll the floor again just in case there are any loose spots, air bubbles, or spots you missed on the first rolling.

Sheet products are not as widely used as tile products, but they are growing in

popularity. Installation methods are similar to a lot of other sheet resilient flooring with the exception of how to cut the seams. The practice of recess scribing or “under scribing” resilient sheet flooring seams is very popular with a lot of installers. However, this method should not be used with rubber sheet, because it can result in uneven, open seams with a burr edge that can be an unsightly dirt catcher. This is of particular concern if the seams are not going to be welded. Welded seams are used in rubber flooring for sanitary installations such as hospital operating rooms, but in many other installations the seams are not sealed or welded. In these cases, the seams must have a tight fit. Cut the seams dry (no adhesive) by the double cut method. Overlap the two sheets of material and cut through both layers at once. It is not hard to do with rubber material, and it is even easier with a seam cutting tool that will make a double cut seam with a nice tight fit. Once the seams are cut, fold the material back, spread the adhesive, and lay the material carefully into the adhesive.

After you are done installing rubber flooring, have a good look at it before you move on to the next section or before you leave the job for the day. Make sure everything is well bonded. Look for air bubbles or raised seams and weight those areas down using sand bags or another method to make sure the material is in contact with the adhesive. Because rubber is installed with hard setting adhesives, if the material is not in contact with the adhesive, there is nothing you can do once the adhesive cures. It can't be fixed later with heat, with weight, or even with a hammer. Once the adhesive is dry, it's dry! So, be sure to address all the loose spots while the adhesive is still wet.



Rolling the floor helps assure adhesive contact and will minimize the chance of air bubbles. Thanks to Ray Thompson for the photograph.

Protecting the floor after the installation is not necessarily the installer's job, but it is so important that the installer should take whatever measures necessary to keep traffic off the finished floor. A good rule of thumb is no foot traffic for 24 hours and no rolling traffic for 72 hours (3 days). Use caution tape, make a sign, or just get in touch with whoever is in charge of the job to be sure the floor is left untouched for the recommended time. Because the adhesive is still wet after the floor is installed, a ladder, a cart, or any other weight on the floor will cause indentations because the adhesive is displaced. Even walking traffic too soon can cause tiles to shift. So, spread the word – stay off the floor for the recommended time! Your best bet on a commercial job is to find the owner or the job supervisor and put the manufacturer's instructions in their hands, pointing out the part about staying off the floor.

Rubber is a great floor to work with if the job is ready, the floor is properly prepared, the adhesive and seaming guidelines are followed, and the floor is protected after installation. This is another example of a high end product that is growing in popularity. There is good money in installing rubber floors for the installers who take the time to do it right.



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