Let's Talk Resilient: 'Green' Flooring: What Does It Mean to Me?

by Christopher Capobianco
Posted: March 28, 2008

Cutting seams in natural linoleum requires different techniques such as holding the knife at an angle instead of perpendicular to the floor. Photo courtesy of Tarkett.

A beautiful herringbone cork tile installation done with contact adhesive.

It's hard to go through a day without someone talking about "green" this or "green" that and it certainly applies to flooring as well. Now, in the interest of full disclosure I have to confess that I have been "green" myself since I was a teenager in the mid '70s - composting, recycling, growing organic vegetables and being very concerned about the preservation of our environment. That has not changed even in my 50th year, and I still do all of those things. However the word "green" bugs me because it is getting used so much and I think a lot of people who are "going green" are doing so because of the other kind of green – that is, money! "Green washing" is when people are jumping on this particular bandwagon to make a buck, and not necessarily with pure intentions. But that is a conversation for another day. The fact is, eco-consciousness has finally caught on and I think that's a good thing, but for a lot of people in the floor covering industry, it means some new terminology and awareness of products and work practices. So, for the purposes of this column, I will use the term "green" to reference the growing trend towards environmental awareness in building designs, product selection and work practices.

Products

The gaps in this recycled rubber tile installation were caused by too long an adhesive open time, as shown by the visible trowel notches on the substrate that had hardened before the floor was rolled.

Certainly there are products like carpet made from recycled plastics or the new "bio based" carpet fibers, in addition to products like bamboo, reclaimed wood and other floor covering products being made from natural or recycled materials. However, since we deal with the world of resilient flooring here in this column there are several resilient products being marketed in this category. The new "bio based" floor tiles hitting the market are said to be installed just like vinyl composition tile, which is good news for installers, but many of the other products we'll talk about have installation techniques that are different such as seaming techniques, handling characteristics, and adhesives such as "wet lay" adhesives instead of "clear thin set." So, as we have said here so many times before, when you are working with something new, pay attention to the manufacturer's guideline and give them a call if you are not sure.

As far as "green" resilient flooring, Linoleum comers to mind immediately - and I mean real, natural linoleum, not sheet vinyl that so many people incorrectly call linoleum. Natural linoleum has been accepted and widely used as a resilient flooring option in "green" buildings because it is an "all natural" product made from renewable resources. In my March, 2005 column Linoleum: Call it Right, Install it Right, I pointed out one of the key points for linoleum installation, with some help from two earlier Ray Thompson *FCI* articles from 2000 and 2001.

"Linoleum is a lot different to seam than sheet vinyl," Ray said. "Linoleum tends to shrink in length and grow in width. Seams should be cut slightly open on side seams and not on cross (end) seams." This is as key point and is contrary to what we have all learned about seaming for other flooring products where the seams are cut "net." Pay attention to this detail and refer to the manufacturer's guidelines. Specialized tools are available for trimming linoleum, so make sure you are ready by having the right equipment. Dealing with "drying room yellowing," "stove bar marks" and adhesive open time are other points in Linoleum installation, so I recommend if you are going to get into installing this product you invest some time in a training seminar or week-long school to learn it.

Recycled rubber is another growing category of resilient flooring. The basis for this product is black rubber chips that come from the treads of truck tires that are "re-treaded." Of course, if they don't get re-treaded in time you see them by the side of the highway or bouncing down the road when they release from the tires. This ground black material is often mixed with colors – some times post industrial recycled material from production of other products, and sometimes virgin rubber – to make a "speckled" flooring material that comes in tiles and rolls. Key points in this product are, again, to pay attention to adhesive recommendations – sometimes it a one-part product and sometimes a two part epoxy, depending on the use. There also are "loose lay interlocking" tiles being sold. Before installing recycled rubber, inspect the product carefully and make sure it is flat and that the tiles or rolls are square, the same thickness and not distorted in any way. Also be aware that there may sometimes be color variations from tile to tile or roll to roll and "ridges" known as knife marks in the surface of the material. These are normal and are the nature of the product because of how it's made. It's good to talk to the customer about this before the material is installed.

Cork is another resilient product that is being used in "green" projects because cork comes from the bark of a tree and grows back in nine years or so, which makes it a "rapidly renewable resource." Cork is classified as resilient flooring but it acts more like wood than resilient. It is manufactured as floating floors, which are installed in the same way as other floating floor products like laminate and hardwood. However, glue down cork tile is quite different and I covered it twice in this column (March 2007, May 2005) and also in National Floor Trends (February, 2008 and September, 2006). Key points are making sure you have the right site conditions - don't install unless the space is climate controlled, and make sure the product is delivered and stored in the space where it will be installed for at least three days before installing. Adhesive is another important point for cork. I have spoken to experienced cork installers in Europe and here in the United States, and they unanimously prefer water based contact adhesive to install cork tile. It's applied to the back of the tile and also to the substrate using a paint roller, which firmly holds the tile in place with no curled edges, allows the installer to work on top of the newly installed floor and allows foot traffic on the floor almost immediately. The tile can be coated a day ahead of time and large areas of the substrate can be coated at one time. The alternative is trowel-applied adhesive, which is more like a traditional resilient installation method, with adhesive spread only on the floor. On paper many installers have told me they prefer this method, and it may be easier in cases like large tiles such as 24" x 24". However, this is a very slow method because these adhesives are usually "wet set" adhesives that can be applied only to small areas at a time. Trowel notch size and open time are critical because if the adhesive is left open for too long, the flooring won't adhere properly and there will be curled edges. There is some argument about which of these two methods is faster. I think I had an installer race with one team doing contact adhesive and the other doing wet set trowel applied adhesive, there would not be a big difference in time between the two.

Work Practices

I think a lot of people focus on "green products" when having a conversation about environmentally

This cork tile installation was curling because the trowel applied adhesive was left open for too long, as shown by the lack of adhesive transfer to the back of the tile.

friendly flooring, but it is important to keep work practices in mind as well, especially when you are working in occupied buildings. Indoor air quality is a big issue, so how you work and the accessories you use can have an impact on your own health, the health of the other trades in the building, and the health of the building owner and occupants. Adhesives can be an issue in this case, even if they are so called "low VOC" adhesives. Take care to ventilate the area so that odors are kept to a minimum. It is also important that certain types of adhesives be handled properly because they can be a hazard. Solvent based contact adhesives and many types of resilient seam sealers are flammable and the fumes are hazardous to breathe. If you have to use these products, ventilation is very important and it is also critical to keep the containers open only as long as necessary so the fumes are kept to the absolute minimum.

Creating dusty conditions on a job site creates hazards for the installer, the other trades and the occupants of the building.

Another thing that comes to mind in this case is substrate preparation. If you sand a floor or raise dust while mixing patching compound, you are creating a health hazard to anyone that is breathing in the vicinity of your work, starting with yourself. It is important to take whatever steps you have to keep dust to a minimum. On older floors it is even more critical because many resilient floors that were installed before the early 1990s had asbestos in them. The same holds true for painted floors, as old paint could contain lead. Now you are into major health hazards and a huge liability. If you are not aware of the Resilient Floor Covering Institute (RFCI) warning on this subject, here it is:

Do not sand, dry sweep, dry scrape, drill, saw, beadblast, or mechanically chip or pulverize existing resilient flooring, backing, lining felt, paint, asphaltic cutback adhesives, or other adhesives. These products may contain asbestos fibers or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively certain that the product is a nonasbestos-containing material, presume that it contains asbestos. Regulations may require that the material be tested to determine asbestos content. The Resilient Floor Covering Institute's (RFCI's) recommended work practices for removal of existing resilient floor coverings should be consulted for a defined set of instructions addressed to the task of removing all resilient floor covering structures.

As everyone is "going green" installers and flooring dealers need to be aware of what's out there so they can properly install the many products being used on these projects and also need to be aware of indoor air quality issues so potential health hazards are minimized.

Additional resources:

- Resilient Floor Covering Institute: 401 East Jefferson Street, Suite 102, Rockville, MD 20850. Phone: (301) 340-8580; website **www.rfci.com**
- Floor Covering Installer Website – archived articles **www.fcimag.com**
- National Floor Trends website – archived articles www.ntlfloortrends.com

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