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We'd like to take a moment to Thank You for your continued trust and support. It is a rewarding experience to do business with you and we are looking forward to 2021 being filled with more work and opportunities for everyone.

It is our pleasure to provide you with information you can use and learn from each CFR issue and we sincerely appreciate all the comments we receive. If you have an interest in a particular subject, let us know and we'd be happy to entertain a newsletter on it.

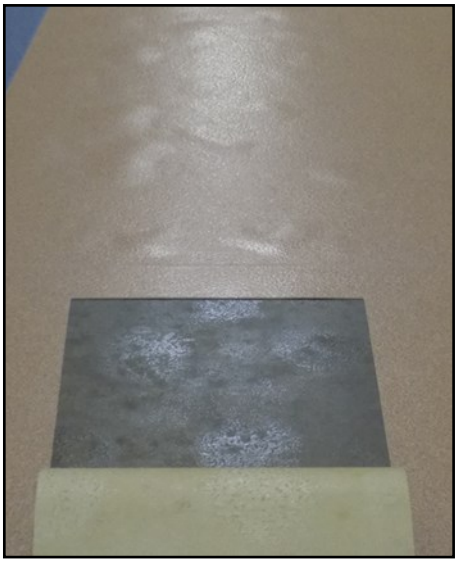
May this New Year see all your dreams come true and turn all your efforts into great achievements. Keep moving Forward.

UNSTABLE FLOORING MATERIALS

One who purchases, installs, sells and even produces flooring materials would and should expect them to remain stable and flat on the floor. This isn't always the case and the causes for that are often found in the material itself. Rarely are these conditions caused in the way the product was installed. Let's be clear about this; ***installation cannot cause planar or dimensional changes in modular flooring materials***. If you think it can or you believe it can, you're wrong.

Unstable can mean; uneven, unsound, insecure and changeable. In fact this condition is becoming more prevalent and an issue with hard surface flooring materials in particular. Let's take a look at some hard surface flooring materials to reveal the problems that can occur and the causes and cures.

Vinyl flooring, whether in sheet, plank or tile form can exhibit unsuspected characteristics that when manifested make one think that the installation or process of installation caused the reaction of the material. Shrinking vinyl tile or plank can appear as gaps around the entire perimeter of the material, ends or edges shrinking or lifting or the material pulling in and curling up at the edges. Sheet vinyl material can also exhibit bubbles in the field areas of the material. All of these conditions when first seen are met with the same conclusion; that the installation is faulty and therefore the material is not being held securely to the substrate. Relative to bubbles in sheet vinyl, this is in fact most often the result of moisture in the concrete compromising the adhesive and the adhesion of the sheet vinyl to the substrate. This is a substrate related issue and not a product or installation failure.



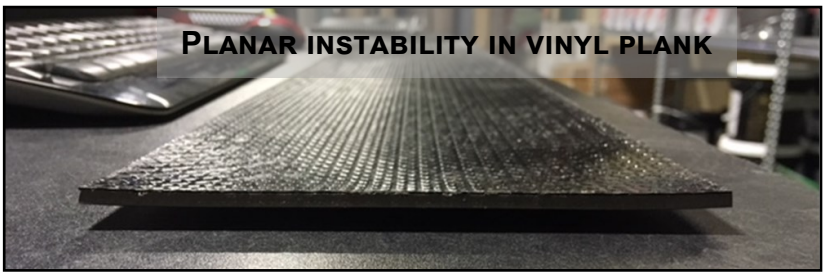
BUBBLE PATTERN AFFECTING FLOORING AS SEEN ON THE SHEET VINYL AND BENEATH IT

Let's digress for a moment and clear up a very important point; adhesive is used to adhere flooring material to the substrate, regardless of the flooring material, substrate type or adhesive type. Adhesive is not

meant to hold the flooring material dimensionally stable. This is a common misconception believed by too many in the industry. The purpose of flooring adhesive is to adhere the flooring material in place on the substrate – to hold it there. It does not have the magical properties of keeping unstable flooring material stable regardless of how aggressive the adhesive is. If the flooring material is unstable when installed, nothing anyone can do is going to change that. The stress forces in unstable flooring material are generally lateral. The inherent stress in the material is across the product plane which means it will shrink or grow and in that process it can lift on the edges, cup, dome or distort. The material will literally slide across the adhesive when this happens. We are involved in cases where the flooring material is stuck tighter than two coats of paint to the substrate and still shrunk. So, anyone who thinks or tries to explain that adhesive is supposed to hold the flooring material stable does not understand the laws of physics or simple science. Even if you bolted the material to the floor where the bolts weren't the inherently unstable flooring material will react. Physical stress in flooring material will overcome the bond or hold of adhesive every time.

Luxury vinyl floor tiles and planks are manufactured in layers. This initially molten material is exposed to heat and pressure and passed through a series of rollers to produce flat sheets of material which, due to the exertion of force and stress, can be unstable. The various sheets are laminated together to produce one sheet.

A process called annealing is supposed to remove internal stresses in the flooring material by controlled heating and cooling, to ensure the product is dimensionally stable. Also, if components of the vinyl, particularly plasticizers, are not properly compounded or if the recycled content in the vinyl causes an imbalance, the vinyl flooring can be unstable. There could also be reactions of the vinyl to the polyurethane wear layer. Vinyl tile and plank flooring can be unstable if it is not annealed properly, inadequately or at all. Reactions of instability in the product can occur shortly after installation or take months to appear. This is a common condition very often blamed on installation or some other implausible means for denying the claim.



THE COMMERCIAL FLOORING REPORT
Lew Migliore - President
P (706) 370-5888 or Email: lgmtcs@optilink.us
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Linoleum, in the simplest terms for association, is essentially a wood component tile. The most common cause of instability in this product is caused by swings in humidity and from over wetting it when cleaning, especially when the product is in tile form. Over wetting in particular, for example using a slop mop, can cause the material to curl up like a potato chip on the floor. It can also react to moisture vapor emission in a concrete substrate.

Rubber flooring, especially in tile form, can also be an inherently unstable material as it can react to warm and cold temperature. As it is a compounded material, either in natural or SBR makeup, and possibly recycled content, reactions can occur to cause it to be unstable. If the product is not stable when manufactured it can and will curl on the edges, regardless of the adhesive used. In some cases where this has occurred, we've cut the tile down to a couple inches square and the edges still curl. We did this years ago with carpet tile curling to prove that no matter how small you cut the tile down the curling was inherent in the make up of the product. Kind of hard to argue against this when the material isn't installed and it's taken out of the box.

Cork flooring has a natural propensity to curl. It is important to follow exact installation guidelines as this is a product you actually can mess up by not installing it by the book. Cork should be installed using contact type adhesive and methods on the substrate and the back of the cork tiles and rolled down. If proper installation procedures are not followed the material will lift at the edges.

CORK FLOOR EDGE CURL

See Page 6 Regarding Excess Inventory Offer

I've made this next statement so many times but it's so true; wood flooring is still a tree in a different form. Wood may be one of the most potentially unstable flooring materials used. It will react to moisture, heat, dry air and despite how stable it may be it can still be affected by many influences. The key with wood is to make sure what you're going to install is of high quality and that the species your using possesses higher stability. The better the product the more stable it will be. Wood can be misshapen out of the box so it must be examined to insure there aren't any compromises in how flat, square and stable it is. Common problems with wood flooring are cupping, crowning and buckling caused by a combination of natural characteristics of the material, environmental influences and installation.

Wood flooring expands when its moisture content increases and contracts when its moisture content decreases. Wood also expands and contracts when its temperature increases and decreases. The amount of moisture-related expansion and contraction will vary depending on the stability of the wood product. So environmental conditions can and do affect the stability of wood, therefore it is imperative that ambient conditions accommodate the wood flooring to prevent it from reacting. The installation of wood must include proper acclimation of the material and the space in which it is installed and then proper layout and spacing to allow for natural movement without reaction. The substrate must also be dry to prevent the gain of moisture by the wood which can cause cupping. It is important to select the appropriate wood flooring material for the application and insure that the environment is controlled and acclimated and that the substrate, especially concrete, does not and is not emitting moisture. More than any other flooring material woods reactions to influences that create instability in the product are more extensive and readily evident. Remember, it's still a tree in another form, a natural product and just because it's a board on the floor doesn't mean it has relinquished its inherent characteristics.

Carpet in broadloom (wider than 6 feet) and in carpet tiles or modular is a soft textile product and unlike all other flooring materials. Tufted broadloom carpet is inherently "stretchy" as are all textiles. However by adding dimensional stability to the product by using a more stable primary backing and a tighter pic (weave) secondary backing or an attached cushion, tufted broadloom carpet becomes more stable. Woven carpet is inherently more stable in the width and allows more stretch in the length. Laying the product out on the floor without any form of anchoring, that is, not being stretched in or glued down, carpet will react to heat, cold and the gain or loss of moisture. Different fibers in the carpet will absorb varying amounts of moisture from wool, which will absorb about 27% of its weight in moisture, nylon, about 5%, to polypropylene which will absorb virtually no moisture. So broadloom carpet, being the least dimensionally stable form of flooring material, requires a stable installation. If after installation broadloom carpet should loosen up it will exhibit wrinkles or buckles. Carpet tiles or modular carpet (up to 6 feet wide) on the other hand are the most stable type of textile floor covering material that should not exhibit any type of dimensional changes in size (growing or shrinking) or upward movement (curling, doming or lifting). Most carpet tile has a hard back and a fiberglas stabilizing layer. Out of the box they should lay flat, square and stable, without exception. If carpet tile does change dimensionally or lift, the reaction is due to instabilities in the backing and when recycled content is added it becomes difficult to produce a carpet tile product that may not, at some point, develop instability. It's very delicate balance to ensure the uniformity of the recycled content feed stock for a carpet tile backing, or any modular flooring product for that matter, and as a result changes can occur from time to time. This issue is being addressed by using backings that have proven to be stable in the past and looking at materials that are far less sensitive to stressful reactions. One of my mentors in the industry told me many years ago, "either you control the product, or the product controls you." There's a lot of product today doing the controlling.

INHERENT EDGE LIFT IN CARPET TILE

Stone flooring can also be unstable. Now, you might say, come on Lew, really!? Stone, how can that be? Unstable for stone or tile does not mean the product will expand, contract, lift or curl. It means that the instability will be related to the substrate or the installation. If the substrate is not level or properly prepared or the mortar for installing stone or tile is not level or even and allows voids beneath the tile then it can heave, crack, drop down or lift. If the slab on which tile or stone is installed should move, which it can, the tile or stone can heave, crack or lift. Environmental influences have very little effect on stone that can be seen but physical changes or compromises in the substrate or installation components can cause stone or tile to be unstable. This is another situation where installation is critical. Saying this, it is possible for a tile to be something other than flat inherently. If this is the case, there can be ledging between the tiles as a result.

Given this information you should be more aware of how a flooring material can be unstable and many of the clues to this are hiding in plain sight. If you don't understand the product, you won't understand what it's doing or why. A simple test for any modular flooring material is to take the flooring out of the box, lay it on a flat surface, allow it to acclimate or relax and then check to see if it lays flat. If the edges lift at all, don't install it as it's going to do the same thing on the floor – this is a planar stability issue. This simple act won't do anything to tell you if the product is dimensionally stable, you'll find that out after you install it and it shrinks. And don't believe anyone that tells you these conditions will fix themselves; they won't. Often the lab tests for determining planar and dimensional stability are not accurate or telling as the tested product may not yield the same physical conditions it does where it is installed. The true indicator is what the product does on the floor. If it does not lay flat or shrinks, that's a product problem, regardless of what anyone tells you. Remember what I've been preaching for years, "the flooring never lies, it will always tell you what's wrong if you know how to interpret what it's saying." People lie but never the flooring.

EDGE LIFT OF INSTALLED TILE

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