The Commercial FLOORING REPORT

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Welcome to the inaugural issue of The Commercial Flooring Report a monthly publication of LGM Technical Carpet Services and Lew Migliore. It's a pleasure to begin a new venture that will bring a unique perspective to the commercial flooring market. Our primary emphasis will be on carpet but we won't let that overshadow the other flooring materials and information on and about them. I want to thank DuPont, SI Corporation, Dow and Universal Textile Technologies for their support and investment in this publication. I'm sure that you'll find The Commercial Flooring Report interesting, enjoyable and at times controversial. We'll engage the services of guest writers regularly whose expertise in various areas will certainly help you in your business and enlighten you. If you have comments or suggestions we've love to hear them. I look forward to helping you and supporting your efforts to be successful in your floor covering endeavors. You can be sure that whatever I write won't be sugar coated, dull or placating.

WHAT IS THE COMMERCIAL FLOORING MARKET?

As for the products in the commercial flooring market there are segments that include corporate, retail, institutional, health care and hospitality. These categories can then be broken down further to include specialty products for each. For example, the work space of the general employee population of a financial institution may be carpeted with carpet tiles or broadloom that has been chosen for longevity of performance and appearance retention. This type product would be a run of the mill style and a bit more utilitarian. In the excutive offices a higher quality, more expensive and generally more aesthetically pleasing, upscale product would be used. This type of product would more aptly fit the environment and stature of existence in which it was to be used. Here one could utilize a higher end woven product or a custom made and designed carpet.

The commercial flooring market is many categories of specifically designed and constructed products each designed for use in a particular environment. The common denominator being the generally high volume of traffic it will be subjected to or the stature or level at which it will be employed. All of the products must fulfill the basic characteristic of performance, without structural or aesthetic compromise.

Let's look at the health care application and specifically an assited living facility but not a nursing home. Here the carpet should be patterned to hide soil, spillage and abrasion from shuffling feet or walkers. However, the pattern would have to be such that it did not impose on the equilibrium of the occupants and cause them to fall down, a real concern that should be considered without hesitation. The product also must have a fairly level surface so it won't be a hazard to older folks walking on it and it must not provoke tripping and falling down. Many elderly people use canes or walkers for a reason, to assist them in moving around and, with or without them, they should not be subjected to a surface that will jeopardize that movement. Many older folks will also have trouble with their sight and will not be able to see clearly where they're going. They don't need any help losing their step or balance on the floor covering surface by something that could make them tipsy.

Another consideration is the style and appearance of the carpet. Certainly it must be functional for the reasons just mentioned but it also has to look good. The occupants at assisted care living facilities are paying customers, often at high rates, and there has to be something obvious which

indicates that they're getting what they are paying for. There's no better way for that to be exhibited than in the floor covering which, at first site, makes a positive statement.

The maintenance of the product must also be fairly easy. This type of facility could expose the carpet to a great deal of abrasive traffic and soiling conditions. The styling must be such that it hides soil. The colors and the yarn system must be easy to maintain and clean. There has to be consideration and questioning as to the maintenance practices and systems being used, not only to protect the integrity of the product but also that of the installation.

In this type of environment, nothing can be overlooked that might jeopardize the product, the installation and the people specifying and selling it. Utilizing commercial carpet is not just showing a sample that fits into a budget. There's a lot more that has to be considered which often isn't. There's no sense creating problems when there's always a way to prevent them. We're going to help you do just that.

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CUSTOMIZED CARPET

I've always said there's a carpet made to fit every need and requirement for any application one could think of. Two factors must be taken into consideration however for the right product to wind up in the right place. First, you have to know the specific requirements of the end user in order to determine the right product. In other words what do they want the product to do. This should be obvious but very often it isn't because the biggest problem in the industry is caused by the wrong product in the wrong place and failing to perform up to the expectations of the end user. People think installation is the biggest problem but it isn't, this is. The second factor is the cost. You can have manufactured any kind of carpet you want and make it perform in any way you want as long as the end user is willing to pay for that performance. Let me qualify this. It may take nothing more to make a carpet special than to put a specific type of backing on it which may not cost very much more at all. Once the end user knows they're going to get exactly what they want, customized for them, there's no room for negotiation. The price is what it is. Is this really true? Absolutely. We do more and more of this type of work for small and large end users who've come to us because they've been disappointed with a products performance and they want something that will specifically fulfill their needs.

Let's look at a few examples of what an end user has asked for. A large commercial client was concerned about bleach spills in the corridors of one of their luxury condo buildings. Not only did they have this concern, which is basically easy to handle, but they needed a very luxurious looking carpet, with a custom pattern, that had high performance characteristics. The bleach spills could be easily addressed by employing the use of solution dyed nylon. The luxurious appearance and customized pattern was achieved by going to a small specialty commercial manufacturer and working with them and the client to come up with a design and construction that would fulfill their needs. When we went to the end user and told them the cost, which was non-negotiable, it was prefaced with the explanation that everything they asked for was going to be delivered to them. Included also in their cost was a watchful eye on the manufacturing and finishing of the carpet. We chose the carpet manufacturer and finisher specifically based on the clients needs and our relationship with all of them. We also tested the finished carpet to make sure it would do everything we said it would and that it would maintain its appearance for many years followed up by a written report. The finished product actually exceeded expectations.

When you can deliver this type of service, backed up by verification, testing and evaluation of the product for the intended purpose, you've got a custom product with a custom service and price becomes a non-issue. No competitor can undermine you, no manufacturer can knock you off, and no one can compromise your deal. More and more there's a market for this type of service that we can help you with.

Let's look at another example. A hotel chain requires a carpet with a high laminate strength backing but they have budgetary constraints. They allow pets in their properties and need a carpet that will look good, won't stain and won't come apart. Again, we go with a solution dyed nylon, we play around with the tufting process to make sure we get good coverage and appearance, performance and eliminate another concern of theirs which was streaking. We put a

very high quality latex backing on and then we test the product to make sure it will do what they want. We communicate with them on a regular basis, another aspect of the customized service, and very likely the most important part and they approve the product. It looks and works exactly the way they want it to because it's been scrutinized every inch of the way and they're happy. We stay within the confines of the budget in the process to deliver this customized service.

In yet another case a retail chain has special needs for a product that won't show soil, spots and spills. What they had before was down for 10 years and looked great during that time. A new product they got failed to live up to expectations. When that product was tested and evaluated it was determined to be the wrong product based on the type of yarn system used and the topical applications. A custom specification was developed to help the end user get what they needed. It was more expensive but it had qualities that would not only meet their requests it also would give them long life and better structural integrity as well as comfort underfoot. Another satisfied client was served.

Any commercial manufacturer, dealer, architect, designer or specifier can deliver this type of customized service. We've been fortunate simply because calls we get for help are from end users who have experienced a problem and been disappointed with the product not living up to their expectations, which could have been met. At this point they're willing to make an investment in the fulfillment of their needs. All you have to do is listen, qualify the client and the end use of the product and give them what they want. If you need help, guidance or assistance you can call us. I'm more than willing to help you.

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CARPET TILE

In my opinion carpet tile is the best commercial textile floorcovering product there is. We'll discuss several factors which I believe make this so and why this is one of the fastest growing segments of the commercial flooring business.

Carpet tile is said to be a $700 million dollar business with an increasing number of participants large and small. This is a unique product and it's no surprise that the carpet tile business is growing and that it will rightfully grow even bigger. Consider the following reasons why carpet tile should be one of the smartest choices for textile floorcovering.

Carpet tile is unique primarily because of the variety it lends itself to. There is no other carpet product that goes down in pieces to make up one monolithic or intricate design that can be so easily worked with and yield such diverse and intricate designs and aesthetics. This product can have a tufted, printed or woven pattern or a combination of those. It can do everything broadloom carpet can and many things it can't. I'll expound on those attributes as we go along.

Carpet tile comes in various sizes, from 18 x 18 inch squares to 36 x 36 and even larger in some cases. There is no limitation for anyone making the product in the variety of sizes it can be made.

Carpet tile has unlimited styling and offers a variety of layouts. The same product for example can be installed in the same direction, quarter turned or even reversed to yield a different look. You can't do that with broadloom carpet. Carpet tile styles and patterns can be mixed and matched depending on how the designs have been developed or how a designer would like to use them. The patterns can be bold, small, medium or a combination of the three. Styling is cutting edge with large and small geometric patterns, earthy designs or random eclectic combinations. Tiles can be easily mixed and matched, free formed, or any combination of choices or layouts one could imagine. No other carpet product allows this flexibility. The only thing that limits the design of this product is the imagination. With so many new and fantastic styles and configurations, choices of color and color combinations and patterning, no matter what that might be, the technology exists to do anything the mind can conceive of with a design. Added to this unique feature is the fact that the carpet goes together in pieces which can be made to look seamless or then again, depending on what the intention, it can look like individual units. Try that with a broadloom carpet. On top of that the layout can use small runs of product making the waste factor minimal at best.

No other carpet performs like a carpet tile. Because of the structural integrity of the overall construction, particularly the backing, carpet tile will perform at the highest level of any carpet product. Understand however, that this depends to a great degree on the fiber make up, tufting process, color and pattern of each individual product. There are, like any other floor covering products, levels of quality of carpet tiles. One thing is almost certain, you should rarely, if ever,

have to worry about a carpet tile delaminating or about a tuft bind problem Though the product is and should be considered a higher performer the same compromising influences that affect the performance and appearance retention of any carpet apply. A light color in a high traffic area subjected to a great deal of soiling and inadequate maintenance will be just as much of a problem in a carpet tile as it will be in broadloom carpet. Always remember the importance of putting the right product in the right place to optimize performance and minimize problems, not doing so generates the biggest cause for complaints from end users.

No other textile floorcovering product is as easy to install as carpet tiles because they go in as small sections of carpet, regardless of their size. The product comes in a box so there is no lugging of heavy rolls, no special needs required to transport it to high floors in a tall building, it can be placed in freight elevators and rolled to the installation site on dollies or carts. This product also virtually eliminates the most common commercial carpet installation problems which are compromised seams and poor transfer of adhesives. Respectively these result in frayed and zippered seams and buckles and wrinkles from the carpet coming loose from the floor. The edges of carpet tiles, when manufactured correctly, should not fray or zipper and even if they fray they won't zipper or delaminate. There can be no buckles or wrinkles in a carpet tile installation even with little or no adhesive to hold them in place. Since carpet tiles can be installed with a grid system, which only places adhesive in strategic locations, they will lay in place with no adhesive at all without lifting off the floor. For this reason alone, the elimination of the most common installation problems, carpet tiles should be high on everyones list as the carpet product of choice. Carpet tiles can also be glued to the floor using adhesives that can be troweled, rolled or sprayed on. The new spray adhesives are excellent, are easier to use, can be used sparingly and they are extremely effective in securing the tile to the floor. This process makes the installation of carpet tiles even faster, more efficient and economical.

Carpet tiles are versatile. They are perfect for replacement products in offices set up with modular work stations. The old product can be removed, the work stations lifted and carpet tiles installed in stages. This eliminates chaos and high replacement costs in the work place by eliminating major disruptions of personnel and equipment.

Carpet tiles come in a variety of backings, the most common of which are PVC, Polyurethane and Bitumen. The best of these, in my opinion, is Polyurethane because it can be used with virtually no concern for latent problems occurring later. As with all carpet installations, it is imperative the substrate be tested for moisture vapor emissions, alkalinity and porosity. The least concern is porosity, the greatest concern is moisture. Moisture in concrete will bring with it alkalinity which can destroy adhesive. If the moisture vapor emission rate is high it can affect vinyl backings by instigating plasticizer hydrolysis. Once this occurs the tile has to be removed, the substrate remediated by bead blasting and leveling and new tile installed. By using Polyurethane backing with a releasable scrim this problem will never occur. The polyurethane also offers cushioning which deadens sound, improves temperature insulation, provides better underfoot comfort to the employee population and increases the performance and appearance retention of the product when properly cared for. If there is moisture evident in concrete or any other compromising agent present on any type of substrate, with any backing used on carpet tile, it must be neutralized before installing the product. You don't want to experience the pain of a problem that can certainly be created by not paying attention to the substrate conditions. This is

true of any floorcovering material installation. Remediating large commercial jobs can cost millions of dollars which would never have to be spent had all parties involved in a project been paying attention to important details.

Even with all the wonderful positive aspects of carpet tiles there can still be defects. The most common defects in a carpet tile are curling edges which can also be called cupping; doming, which means the center of the tile rises up. Carpet tiles should always lay flat, always. Fuzzy edges, which most often occurs when the loops are cut on the edge of tiles and not cleaned up; tiles being cut out of square, which would create gaps at the edges; shrinkage, most often found in tiles that are tufted with shifting or graphics patterns, this would be a dimensional instability. Carpet tiles must be dimensionally stable at all times and maintain their size and dimensions, if they don't most often this is an inherent problem with the product relative to manufacture. The other problem could be the pattern running off or being out of register, depending on whether the tile is printed or tufted. Remember carpet tiles, whether tufted, woven or fusion bonded, start their lives as a broadloom product. If the processing of the carpet is not controlled during manufacturing and finishing, it will inevitably cause reactions in the product be they visible or latent manufacturing defects.

Carpet tiles still require care and maintenance the same as any other broadloom carpet. Regular, planned maintenance is imperative. A program to care for the carpet tiles including vacuuming, spot cleaning, interim cleaning and overall cleaning should be planned before the carpet is installed and monitored for effectiveness after implemented. Changes should be made to the program as necessary to keep the carpet looking good, to extend its life and to optimize its performance.

There is no question in my mind that carpet tiles will continue to be one of the hottest growth areas of the commercial carpet market in all segments because of their design flexibility, versatility, ease of installation, elimination of the largest installation problems and the unique individualized opportunity they offer the designer and end user. This is a product that offers the most opportunity for the carpet industry and the design community.

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PICKED OUT THE RIGHT CARPET? IT DOESN'T END THERE

Just because someone thinks they've picked out the right carpet for their flooring project it doesn't mean the job is over. Quite the contrary, things have just begun. Hopefully the right carpet was chosen, often it's not, which can lead to monumental problems at times. But, we'll get to more of that later.

The end user is paying for carpet product that will work and live up to their expectations and an installation that will be trouble free and not compromise the carpet. It is the job of the specifier, architect, designer and contract carpet firm to make sure expectations are met and problems do not jeopardize a successful project. Do you know how? There are several important issues that have to be taken into consideration they are; know what to use where, how to use it, how to install it and how to maintain it. Without being able to control these aspects of the product, the installation and the maintenance of it this house of cards can come tumbling down. The product choice is not that of the manufacturer, they are not in business to police where their materials are used. The parties specifying and choosing the material know more about how it is to be used, for how long and what the expectations are than does the manufacturer. The manufacturer will make you what you want but few will tell you that you can't use one of their products in a particular application. Unless they are an integral part of the selection and qualification process, and they are relied upon for a final decision as to what to use where because of certain performance concerns or considerations, they are not responsible for any failures in performance because someone chose the wrong product. If the wrong product is chosen and fails to live up to the expectations of the end user, whoever chose the product bears the brunt of the responsibility for the failure. Certainly a rep can make suggestions but they're not going to fight you on a color choice, for example, if that's what the client wants, even if it is wrong. So to make the carpet work without a problem, or any floorcovering material for that matter, which is actually easy to do if everyone commits to the concept and asks questions- heres what has to happen.

The carpet must be specified correctly. The carpet must be understood, what will it do and not do. It must always be capable of delivering the type of performance expected and desired or else it isn't capable of being used where specified. It must be known how the carpet will be used, where it's going and if it will hold up to the application. It must be installed properly and compromises taken into consideration and planned for in advance just in case something unexpected should occur. It must be maintained effectively. Not just superficial maintenance and cleaning but a planned and flexible program. The program must take into account varying responses the carpet may have to use and soiling that can be addressed with whatever it takes to fight back the offender. Simply, every aspect of the products specification, installation, use and maintenance must be qualified to prevent problems in the future.

THE PRODUCT: SPECIFYING AND UNDERSTANDING IT FOR OPTIMUM PERFORMANCE.

What yarn system have you specified and why?
Nylon is the number one fiber used in carpet and especially commercial carpet because it is the

best performing fiber. Nothing yet produced in volume performs like nylon. There is a constant marketing battle going on between the two types of nylon available - type 6 nylon and type 6,6 nylon. Type 6,6 nylon has a denser molecular structure so it is harder to dye and harder to stain but any white nylon is basically easy to stain regardless of the molecular structure. Both types of nylon can be dyed with any dye method available. Both nylons can be made more resilient with various yarn and fiber processing methods. Both nylons can be configured in any fiber shape. Both nylons can be produced in staple or continuous filament fibers. Both nylons can be used in any type of carpet construction and any face configuration or weight. Branded nylons offer premium performance backed by the technology and years of experience of their respective company. DuPont is the nylon producer everyone chases but each nylon producer has it's own slightly different product nuances. Carpet manufacturers, since having gotten into the fiber production arena, continue to improve their offerings -they only offer type 6 nylon. Though not up to every level of the branded nylons yet they continue to close the gap, which isn't that wide. For example, the exact same carpet, produced the same way in every respect, whether in type 6 or type 6,6 nylon, will perform the same - there should be no detectable difference.

Polypropylene is used very little in commercial carpet except in the Main Street arena. The primary reason is that this fiber is the least resilient of any fiber used to produce carpet. It is not appropriate for most commercial markets but it may find it's way into the health care category with the right construction because it is not affected by aqueous based agents, is almost impossible to stain and is always solution dyed so it is very colorfast. Polypropylene from Ronile can be spaced dyed and this fiber is actually one of the highest quality polypropylenes available. The tips of polypropylene fiber or yarn can be melted or fused if struck by a sharp blow, a quick stop from a soft soled shoe or a piece of furniture dragged across the surface of it. Polypropylene hates water but it loves oil so it would never be appropriate in an application where oil of any kind would come in contact with it. Polypropylene is also the least expensive of any of the synthetics used in carpet. This fiber constructed in a 5/64 gauge, ten to 12 stitches per inch, low pile height level loop, patterned carpet could perform well in a retail store setting, for example. The question has to be asked: "What are we trying to accomplish and where is the price differential relative to performance of a lesser quality nylon versus a much more densely constructed polypropylene." This fiber can work surprisingly well, in the most unlikely of constructions, in a mall retail store where there would be food and beverage spillage from shoppers, for example.

Polyester is mentioned only because it is one of the fibers used to manufacture carpet but in the commercial arena it is a non-entity.

Acrylic is used very little in commercial carpet and if it is used it would only be for an accent yarn.

Wool, by itself, would see use in executive areas and possibly where one would have a concern for fire such as in airplanes, subway and rail cars. As a stand alone fiber it is not the best choice for commercial application unless very densely constructed because it can be worn away abrasively. A woven wool/nylon blend in an 80/20 combination respectively, on the other hand, is one of the best performing carpets known to man. It's use in casinos is testament enough to the high performance, appearance retention and longevity of this blend. Wool grows old

gracefully but it will wear out abrasively. Nylon can ugly out but it will not wear out and it has excellent resiliency. Combine the two in the right construction, colors, pattern and style and you have a beautiful, classy, high performance product. This is a high end product used in high end properties. The market for these products however is continually being chased and encroached upon by new tufting technology that can emulate the look of woven wool carpets. However, wool is also finding more favor with this new tufting technology as well. In my opinion the woven wool/nylon carpets are the Mercedes of the industry. This is a product that is timeless and exquisite. If you want to make a statement this product will do it.

WHAT DYE METHODS ARE GOING TO BE USED?

The Pre-Dyeing methods - adding color before the carpet is constructed

Solution Dyeing: The highest performing dye method by far is solution dyeing. The color is an integral part of the fiber - the polymer and the color chip are melted together. Like a carrot, the color goes all the way through the fiber so it is virtually impossible to stain and it's extremely colorfast. Any fiber, except wool, can be solution dyed. The color pigment chip is added to the fiber chip in a ratio that determines the final color. The two components are blended, melted to a molten state and extruded into a fiber shape which is then processed into a yarn. The limitation of the solution dyeing is the color palette - not every color imaginable can be produced.

Stock Dyeing: This is a batch process in which loose staple fiber is placed into a pressure vessel, like a kettle, and dyed under pressure and heat. This process is used primarily for woven wool carpets and there is very little of this in use in the US today. It would be used primarily for accent yarns in a pattern. This is an exhaustion dyeing method where the dye in the bath is exhausted or absorbed by the fiber.

Space Dyeing: This process is just what it says, spaces of color - over 20 can be applied - are placed on the yarn to achieve a coloration or look in a product to accomplish a pseudo patterning. This process is still very much used and very popular in carpets today. This is a pad dyeing process whereby the dye is sprayed on or the yarn pressed into the dye placing spaces of color on the yarn.

Skein Dyeing: This process takes packages of white yarn, winds them into skeins or hanks and dyes them in small to large vessels holding from 50 to 5,000 pounds of yarn. This method is used for dyeing accent colored yarns. After dyeing the skeins are unwound and put back onto packages ready to be tufted or woven into the carpet. This is an exhaustion dyeing method where the dye is absorbed into the yarn.

All of the methods mentioned so far are very involved and some of them, like stock dyeing and skein dyeing, are labor intensive, slow and expensive. They are all however an integral part of constructing the beautiful tufted or woven commercial carpet available today.
Post-Dye Methods - adding color after the carpet is constructed

These are dyeing methods employed after the carpet has been tufted. Woven carpets do not use these methods because the yarn is dyed prior to going into the product.

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Beck dyeing is an immersion process when from one to three rolls of carpet are sewn together - end to end. Large atmospheric or pressure becks are filled with water and the carpet placed into them. The water is brought to temperature, chemicals and dye are added and the carpet stays in the dye bath for a predetermined period of time. This process can dye solid color or up to three different colors in the carpet. This is achieved by constructing the carpet with different yarns, having different dye affinities and taking on the color they are programed for. All three dye colors are placed in the vat or dye beck and find their way to the appropriate fiber. This dye method is an exhaustion process. Each dye run is limited and the shade will vary from batch to batch. If carpet is ordered in large quantity that is beck dyed the manufacturer should be asked to "commercially match" each run. That is, lay out each dye run and graduate the color match from lightest to darkest so there will be a gradual, hopefully undetectable, shade variation between each run. If this is not done the installation will mix and match runs and there can be a noticeable shade variation between each panel of carpet.

Continuous Dyeing: This process is the fastest, most cost efficient dyeing process used to color carpet. It is also the process which creates more color match problems than any other. As the name implies, carpet is passed continually under a dye spray applicator that applies color instantaneously to the carpet. The carpet goes in white on one side and within inches comes out dyed on the other. This system is being used more and more because it is so fast and efficient. The draw back is that it creates side match shade variations because the color in the carpet often varies from one end to the other. When the carpet is cut and panels are laid side by side a color variation is often starkly evident. Often this color variation can be blended on site but it is not something one wants to encounter or experience on a commercial installation where you pray you won't have any problems. Most continuous dyeing of commercial carpet would be in solid colors although there are techniques used in the continuous dyeing process that can apply random color variations to the carpet.

Printing: this is the process of applying colors and patterns to either white, undyed nylon carpet or dyed carpet. The color can be sprayed on making almost any type of pattern imaginable with a jet spray system, roller applicators or screens. There is much more patterned carpet made with tufting and weaving processes, by far, than with the printing process.

In the next issue we'll continue with PICKED OUT THE RIGHT CARPET?

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PICKED OUT THE RIGHT CARPET? PART ll

In the last issue we concluded with printing, part of the carpet dyeing and coloring process. In this issue we'll continue by starting with carpet construction.

CARPET CONSTRUCTION

There are three primary manufacturing processes for carpet: tufting, which comprises 90% of the carpet made; needle punched, which is about 7% of the carpet made; woven, which is about 2% of the carpet made and the balance of 1% is made up of flocked, fusion bonded and other methods. The vast majority of the carpet supplied to the commercial market is tufted, most of the woven goods available are higher products. Fusion bonding is a limited offering of carpet tiles. The majority of needle punched carpet used commercially would be either in specialty tiles or entry flooring systems.

Tufted carpet products are constructed on a variety of machines which could be straight row stitched, staggered or shifting single needle bars, double shifting step over stitch machines or computer yarn placement (CYP) machines. The use of computers, servo motors, variable speed clutches and other technology provide an unlimited amount of versatility in design, pattern and styling in today's tufting machines. Anything that can be conceived in design, patterning, texture or coloration can be accomplished. If you can see it or visualize it, it can be made on a tufting machine. Small companies like Burtco, Fortune, WaveMaker, Marabella, Clayton-Miller and Signature all have brand new, state of the art, tufting machines capable of unlimited style and design.

Woven carpets in the commercial arena are primarily made on either an Axminster or Wilton loom. Much of the worlds woven commercial broadloom carpet uses wool, wool/nylon blends or 100% nylon. These processes are slower and therefore more costly. Is woven carpet better than tufted carpet? Not necessarily. The big difference is the styling and look of woven carpet which makes it different. When your talking about commercial carpet is this category you can compare it to luxury cars- it's beautifully styled crisp patterns. In the woven category you can have anything from a Rolls-Royce to a Mercedes and BMW to Lexus and Infinity to Cadillac and Lincoln; all luxurious to varying degrees of craftsmanship, quality, performance and price. The tufting technology in 2003 continues its assault on woven carpets. However, woven carpet, because it is unique and has an aura of high quality, may never be eliminated from the commercial market. Just like fur coats won't ever go away, neither will woven carpet in my opinion.

CARPET FACE STYLES

There are three face styles of carpet. By face I mean the actual surface yarn configuration of the carpet. Loop pile, cut pile and cut and loop pile, make up all carpet surfaces. From these three configurations there will be variations that either compliment the styling desired, the appearance

or improve performance.

LOOP PILE

Loop pile carpet can be level, multi-level or textured loop. The yarn can be air entangled to mingle the fibers, twisted and/or heat set in a loop pile carpet for either styling or performance attributes. It is not always necessary to twist or heat set the yarn in a level loop carpet because the level loop construction and configuration itself yields performance a cut pile carpet can't deliver. When the yarn is twisted, plied and heat set extraordinary performance characteristics are built in and achieved. This also gives the carpet a higher level of styling and texturing but the biggest benefit is the performance increase. Constantine Carpet employs a process like this in some of their products. Built and finished correctly, the end user will get tired of looking at the carpet before it ever shows signs of "wearing out." One thing to remember is that the more processing the yarn goes through to increase performance or styling the more the carpet will cost. The payback is the carpet will perform better and last longer. The carpet can be amortized over a longer period of time which may actually make it less expensive in the long run than buying something cheaper initially. The longer the carpet lasts the longer it will be before it has to be recycled or disposed of in a landfill. These are selling points that should not be overlooked.

CUT PILE

In a cut pile carpet the yarn can have varying levels of twist. A high level of twist will create a Frieze, a medium twist will create a Saxony and a low twist, with little or no heat setting will create a Velour or Saxony Plush carpet product. Cut pile yarn with no heat seat and virtually no twist is referred to as a "singles" yarn. Singles referring to the fact that each fiber in the yarn singularly exists in the yarn-it is not twisted together. With each look or styling mentioned a different level of performance results. The tighter the twist the more resilient the yarn, them more definition it has and the better the performance should be. Heat setting creates a memory in the yarn which improves resiliency and stability in the yarn.

You may remember that I've mentioned many times in articles I've written or at speaking engagements I've given that the key to performance is density. Density can be achieved by packing more yarn into a square inch of carpet. However, density can also be achieved by making the yarn itself denser. This is done by putting more twist in the yarn and locking that twist in with a good heat set. So, relative to a cut pile yarn, the denser the yarn, that is the more twist in the yarn, the greater the performance and the higher the resiliency - the "bounce back" the carpet will have. This enhancement will result in better appearance retention. The less twist the yarn has the greater the chances of it matting and crushing which will lower performance and diminish appearance retention.

Carpets constructed with high twist and heat set cut pile yarn would be capable of better performance in high to medium traffic areas. Again, the less twist the lower the overall performance normally is and the lower the category or performance rating for the product. This should not only be stated in the specifications for the product but also understood by the end user, designer, specifier, architect or anyone responsible for supplying a carpet product for a

particular application and expectation.

CUT AND LOOP

Cut and loop carpet configuration and styling can be achieved by alternating the cut and loop yarn in the carpet at the time of tufting or by tufting the carpet with variable heights of loop and then tip shearing them at the shearing machines to achieve a certain sheared look in the pattern. This changes the patterning, shading, appearance and performance. Think of the cut pile portion of a cut and loop carpet as grass, it stands upright on the surface of the carpet. It can be short and dense like on a putting green, or long and less dense like a thick lush lawn. Short and dense shows virtually no traffic. Long and sparse shows traffic, highlights, compressions and footprints.

The more cut pile surface in a cut and loop style the greater the chance of appearance loss and lower performance characteristics unless the cut pile portion is twisted and heat set. Cut pile yarns in a sheared cut and loop carpet tend to be singles. In other cut and loop styles there will be some degree of twist in the yarn. A patterned carpet made up of cut and loop yarns derived from tip shearing the product surface offers varying levels of performance. The more sheared yarn the lower the performance of the product relative to appearance retention and eventual light reflectance changes altering color shade. A recent case of a corporate end user choosing a tip sheared cut and loop, floral patterned product resulted in the manufacturer going on record with a letter telling the customer that this product would disappoint them. They stated that the product would “ugly out” and it did. When this reaction occurred the end user filed a claim complaining that the carpet was defective. We went to look at the product in installed locations, got samples from half a dozen other locations, tested the product, analyzed and evaluated it for structural integrity and especially weight, which the end user contended was not as specified and found there was absolutely nothing wrong with the carpet. In this case the manufacturer knew they wouldn’t be happy and told them why. The end user ignored the warning and made the selection anyway. The manufacturer, who should be complimented for their unusual honesty, openness, integrity and wisdom, dodged the bullet in this case. Not only did they say the carpet was not right for the application but all the product specs were on the money when tested. There was nothing wrong with the carpet and the end user made a mistake they had to live with.

In another case involving a cut and loop carpet where there were two rows of loop pile and two rows of cut pile alternating in the length of the product, the end user complained of a loss of appearance and poor performance of the product. In this case the cut pile portion of the carpet was actually too long. As traffic compressed the carpet’s surface the cut pile yarns fell over onto to the loop pile yarns, partially obscuring them, changing the appearance of the product. This carpet was specified by a designer who modified a running line product with a shorter cut pile height. Unfortunately no one realized or told the designer that this reaction would take place, not that they would have listened anyway. Again we looked at product removed from the location, conducted various performance tests and determined it was not defective. The carpet was performing up to the standards and characteristics to which is was specified, designed and constructed. At the installation site the carpet actually didn’t look as bad as the complainant stated. After explaining to the end user why the carpet looked the way it did, that it was a design change issue that was demonstrated that should have been realized and that it wasn’t a

manufacturing defect, they accepted the explanation. To help them further, they were also given information and assistance in keeping the product clean and in making repairs as a courtesy. This was greatly appreciated and the complaint went away.

The point of these examples is to show that cut and loop carpets can offer very beautiful styling but when the cut portion causes performance and appearance retention to fall off the edge, someone has to realize that there are certain limitations with this styling and what those limitations are. In the first case sighted, the manufacturer knew the products performance and appearance retention limitations and advised against the products use in that application. In the second case, the manufacturer did not fully realize the products limitations when a higher cut pile height was requested. They made the product as desired and specified and were able to wrangle out of an otherwise costly situation because of the modification which altered the products performance.

It is important to understand that the configuration of a carpets face, be it cut, loop or cut and loop will vary with the design and enhancements, of lack thereof, of the yarn. In the commercial arena it is very possible to have a poor performing loop pile carpet resulting from a relatively high pile height, low stitch rate and a loosely entangled yarn. It is also possible to have a cut pile carpet with a high twist rate, good heat set and high density that will outperform a loop pile carpet.

The categories of use, low, medium, heavy or extra heavy (or Class I, II, III or IV) will first dictate what type of construction is required, the look, style and color desired will also greatly influence the products performance. But, just as Clint Eastwood remarked in one of his Dirty Harry movies, " A man's got to know his limitations," so too does a carpet manufacturer, flooring contractor, specifier, architect, designer or end user, making a decision on what carpet type carpet to use. Certainly the manufacturer should know how each of its styles will perform relative to traffic classification. It is also possible, and we do more and more of this for clients, to test the product under conditions similar to those which it is going to be exposed and used. We can determine how it will perform, maintain it's appearance, clean up when subject to soiling and hold up relative to its structural integrity. By testing the product first, you economically have the opportunity to avoid problems and make any necessary changes to accomplish the desired performance.

In the next issue we'll continue with Picked the Right Product? We'll also comment on Neocon 2003.

Call me if I can be of service to you.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #6 8-18-03

PICKED OUT THE RIGHT CARPET? PART 3 BACKING SYSTEMS

In the last issue we discussed carpet construction and face styles and how they contribute to performance or the lack thereof. Next we'll look at backing systems, their importance, influence and how they affect the carpet and its performance.

I have often said that the most important part of the carpet is the backing, it's the foundation for a perfect installation. The backing offers support, dimensional stability and structural integrity. Specialty backings offer a moisture barrier, cushioning, anti-microbial properties, adhesion and pliability. Specialty primary backings guide pattern alignment and assist in anchoring yarn tufts. There is so much new technology in carpet backings that it's challenging to stay on top of it all. Some of this technology is not even in use yet, and I can tell you this with a modicum of certainty, when it comes on line it will revolutionize the installation process. The industry is hard pressed to adapt all of the changes occurring in carpet backings but change it will, inevitably.

Primary Backings:

Most primary backings for tufted carpets are woven slit film polypropylene although some non-wovens are used for special applications. More and more specialty primary backings, such as SI Flooring Systems Pattern Lok, are being used in commercial carpet with all of the pattern product being sold. These backings are new to the industry and already improvements on the original designs are being implemented such as the elimination of tufting needle deflection. Another consideration of primary backings is the amount of dimensional stability they lend to the product. This is especially important with pattern goods because the finishing process has the greatest tendency to cause bow, skew and waver in the pattern. The more stable and straight the product can be held while it's being processed, the less challenging the installation procedure is going to be and the fewer the headaches for the commercial manufacturer and flooring contractor. Whatever the backing costs it's cheaper than all the other expenses related to patterns that go in every direction but straight which then generate complaints, claims and profit losses.

Between the primary and secondary backings is where the moisture barrier materials will be placed and located. This barrier will prevent moisture from going through to the carpet backing preventing all kinds of things from happening including mold and mildew growth, bacteria, odors, delamination and adhesive failure. It is important to understand however that when moisture is not getting through from the top down it may also be prevented from getting from the bottom up. If that should be the case where substrate moisture vapor emission is an issue, the installation could be compromised. No matter who you are in the industry, manufacturer or flooring contractor, you have to ask about the permeability of the backing from the top down and from the bottom up.

Woven goods combine the face yarns into the backing of the product. There is no separate primary and secondary backing unless a specialty secondary backing is specified.

PUTTING THEM TOGETHER:

The tie that binds most primary and secondary backings together in broadloom products is synthetic SBR latex. For specialty applications hotmelt adhesives, polyurethane and some other products are used.

AVAILABLE SECONDARY BACKINGS:

Woven synthetic backings can range from 5 pic to 13 pic on commercial carpet. The pick is the number of weft (widthwise) or warp (lengthwise) yarns per inch. The higher the pick the more the backing material costs and the greater the dimensional stability of the backing. One of the ways the industry has cut costs in product is to use backings with lower picks. When you couple this with high filler loads in the latex there can be any number of compromises to the carpet. Some of the compromises are delamination, edge ravel, sprouting, buckling and wrinkling and overall dimensional instability issues particularly if the product is a nylon step over stitch construction. The woven synthetic backing is the most common type of backing used on carpet whether it be commercial or residential.

Unitary backings are used on commercial carpet that is to be glued directly to the substrate. This is basically two coats of latex, each with different properties. The first coat locks the tufts into the carpet and the second coat offers dimensional stability. If the carpet is a step over stitch construction it would benefit the product to add a 5 pic woven secondary backing. The reason for this is to put 100% of the carpet in contact with the floor. Without this type of secondary application only the highest tuft rows contact the floor and only those rows come in contact with the adhesive. It is impossible to achieve 100% transfer of the backing into the adhesive and onto the floor if 100% of the backing doesn't touch the floor. The addition of an inexpensive secondary backing allows for the glue to anchor 100% of the carpet and therefore maximize the adhesion and prevent the carpet from coming off the floor. There are other factors which can cause problems but at least it won't be because all of the carpet backing is not in contact with the flooring surface.

Attached cushion backings mostly of polyurethane can be up close to the backing or up to 1/4 inch thick. This backing system, more than any other in my opinion, does more to improve carpet performance, appearance retention and longevity, than any other backing technology. It offers cushioning comfort, insulation, noise reduction, wear resistance and extremely high structural integrity. It has been proven time and again that the face weight can be lowered by implementing a high density polyurethane cushion backing system. Years ago we tested carpet at 8 ounce face weight with this backing versus 28 ounce face weight uncushioned carpet and the 8 ounce product outperformed the 28 ounce product every time. Since almost 70% of the cost of the carpet is in face yarn, integrating an attached cushion back actually makes the carpet less expensive to make while greatly improving performance - the result is a product with much better value. You actually get more performance for less because the backing is not going to cost as much as the face yarn. Some manufacturers have found this out and are employing this concept without any compromise in product performance and without lowering the cost of the product. The end user should be paying for performance, not how much the carpet weighs. Face

weights on carpet products, particularly carpet tiles, can hover around 17 ounces per yard without affecting performance or appearance retention at all. An added benefit is the carpet lasts longer and doesn't have to go into the land fill sooner. Where carpet tiles are concerned, they can be revitalized to live again another day, greatly extending their beneficial life.

Vinyl backings are used primarily on modular carpet systems, carpet tiles and 6 foot roll goods - variations of this backing also exist. Vinyl has been the mainstay of the modular segment of the industry for years. With the concern for the environment it is particularly adaptive to accommodating recycled content which is added to it. One concern here is the addition of nylon face fiber to the backing. If the nylon is not adequately encapsulated and sealed into the backing it can promote moisture migration from conduction by the nylon in the backing which could potentially cause an installation failure or plasticizer hydrolysis. The concern for plasticizer hydrolysis when using vinyl backed goods, especially on substrates that have questionable moisture vapor emission issues, has elevated the industry's awareness to the use of alternative backing systems. If moisture concerns are an issue, and they certainly are and should be at the forefront of everyone's list now, then one of the best backing systems to use is polyurethane with a releasable scrim. The polyurethane will not be affected by moisture - no odor or emissions - and the scrim provides space that will allow moisture vapor to volatize.

The backings mentioned are those currently and most common used in commercial carpet. There are some others such as EVA, hot melt and Bitumen and of these the Hot Melt would be found most on domestically produced carpet products, particularly Lee's Unibond - they've mastered this backing system.

What's most important about carpet backings is knowing where the carpet product is going to be used, the conditions of the substrate and the performance expectations of the product. The backing is like the suspension system on a truck, it can be adapted to the type of use and service the product is expected to deliver. Companies such as C&A and Interface are very specialized in their backing systems and technologically advanced in the industry, in my opinion. Shaw and Mohawk also have their own proprietary specialty backings. Milliken is standardizing on their ComfortPlus polyurethane cushioned backing. Other manufacturers can adopt almost any backing they want from commercial backing suppliers in the industry whether that be print based latex to the highest quality polyurethanes. More technology exists in backings and is being developed by the industry than any other component used in the production of carpet. The backing is the foundation of the product and its importance will only grow as those specifying, selling and using it realize how important it actually is.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #7 9-25-03

A SERIES OF FAILURES

I've been in this industry 33 years, having started in retail sales and management, then in the carpet cleaning, maintenance and repair business which lead to looking at problems and correcting them. The Carpet Capital of the World, Dalton, Georgia, was my second home for 25 years before we moved here four years ago. People think that after all that time in the industry, being involved primarily in the problem side of the business, that I've seen it all - nothing could be further from the truth. Everyday is a new experience. Either someone figures out how to do something wrong more creatively or a manufacturer develops a product that is problematic or, the most common problem, someone doesn't understand something about the product. More than anything, it's a constant learning and education process, explaining to someone why something didn't work and what can, short of replacement, be done about it.

I'm going to share with you some of the most recent problems we've dealt with.

A doctor from a large medical facility in South Alabama called to lament about a problem they have with an Armstrong Medintech floor. The doctor of this facility wanted to cover his existing Terrazzo with Medintech because it is used in so many health care situations successfully. He researched the product, went to look at three installations of it and decided to purchase it. He contracted with a flooring dealer who claimed to have Armstrong certified installers. The flooring was installed on a weekend and when he arrived on Monday morning he was horrified. The floor, as he reported to me initially on the phone, looked nothing like what he had seen installed the places he had visited. He said, "I can see the seams from the parking lot." He called the dealer to complain, they came back, installed two saddle seams which only made the problem worse. The manufacturer didn't send anyone to look at the flooring as they should have and as they normally do. They have field tech reps that are supposed to get involved in this type of a situation.

When we were called to get involved in this case I wanted to go see a Medintech floor installed at the hospital here in Dalton. As luck would have it, the hospital is doing an addition and renovations and Medintech flooring was being installed when I called the general contractor. When I got the hospital the installers were still working on the floor, welding the seams and trimming them. The installation had inset borders which intersected with darker colored squares of the material. The material was coved and had inside and outside corners. To watch the two installers work was to witness mastery. The seams were welded almost imperceptibly, the corner coves looked like they were painted on the wall - this installation was as close to perfect as it gets.

The complaint installation I went to look at was one of the worst installations of any flooring material I have ever seen. The base of the outside corner coves looked like they had been attacked by a hacksaw. I questioned whether they had been subjected to some type of extraordinarily abusive use and was told no and shown corners under kick spaces that looked the same. They had photographs which were taken right after the installation documenting the

condition. All seams were a mess. The welds were concave, the welding material soft, there were bubbles in it, the seams were not even or cleanly cut, the vinyl flooring material was scratched in the length, along the seams and across the width of the seams. The cuts around small floor drains were hacked and uneven, there was adhesive on the floor next to the seams that was discolored, there were locations on the seams where the welding rod was uneven and not blended in. Simply put, the floor was ruined and the installation mess could only be fixed with divine intervention. There was no way this job was installed by Armstrong certified installers. Looking at all the documents involved in this case we found the prices charged for installation services were below what Armstrong would consider normal. When questioning an employee of the medical facility, present at the time the floor was installed, she said the installers were griping about having to drive so far to install the floor, that they didn't want to work on the weekend or at night and they were grouchy and unruly. This speaks volumes about why the installation looks the way it does and the itemized bill tells more of the story.

The dealer is suing the facility for payment, they have not admitted to ruining the floor, accept no responsibility for it and they have expressed no intention of taking care of this claim. The floor has to be replaced - it can't be fixed. The medical facilities counter suit has more merit than the dealers suit for payment, anyone could look at this installation and determine that it was not professionally installed. This installation is a travesty, it gives the industry a bad name, casts suspicion on legitimate commercial flooring contractors and makes the commercial consumer paranoid about purchasing a vinyl flooring that has an excellent performance record. This is not the way to do business in the commercial arena.

The next case involves one of the most beautiful commercial carpet installations I've seen in a long time but I'll give you the details of why this carpet generated a panic call from the interiors contractor and a plea for immediate assistance.

This is a double stick installation of Karastan woven commercial carpet in four different styles, one used in offices, one used as outfill borders, one as insets in common areas and one used as the field for corridors and common office areas. The concern was for the carpet soiling rapidly, it had been installed three weeks prior to their call to us. There were also cuts on the surface of the carpet, some pulled loops and some fraying at the seams of one of the products. None of these conditions were noticed until shortly after the move in. Prior to my arrival, which was the day after we got the call, the carpet had been cleaned. I was told black dirt was removed from the new carpet that they didn't think was normal and they were right, it wouldn't have been. The carpet had dark spots on it before cleaning, the cleaning removed most of them but some had come back, they said. I was expecting to see a real mess when I got there but I didn't.

The carpets were installed on the ninth floor of executive offices - they were subjected to light traffic. They were not filthy when I arrived, in fact they looked excellent except for a few areas where there were minor faint dark spots. The cuts on the carpet surface were from installation. They were angular at inside and outside corners. When the installer cut the carpet to fit it he nicked the surface of the carpet beneath it. After the damaged carpet acclimated, was subjected to traffic and vacuuming, the nicked fibers expanded and blossomed exposing the surface cuts. There were some kicker pulls at corners, a few patches which were subtly visible, fraying on one style of the inset carpet, and a randomly scattered pulled loops in field areas. This may sound

like a lot but keep in mind we look with a very critical eye. None of what was seen was extensive and it could all be fixed. The installation overall was beautiful. The patterns were all perfectly aligned, everything was square, the layout and choice of product in the combinations used was one of the classiest I've seen.

The pulled loops could be reinserted in the carpet. Because this is a very densely woven product the pulled loops can be pushed back in and the compression from the fit should hold them in place. For added strength a dab of latex could be placed on the yarn to further anchor it. The frayed edges at seams, which were sealed, were from the loop being nicked or cut. Some of these could be trimmed and the seam could be lifted up enough to expose the edges of the carpet, or the carpet slightly lifted off the pad, carefully, and the edges sealed more effectively. Some surface cuts could be trimmed with napping shears and others will require patches. Because this is a block pattern with a row of cut pile it lends itself well to placing a patch that would be virtually invisible. The patches made, some of which were fill, during the original installation could only be seen because the linear pattern was not match dead on. A fraction of an inch will throw the pattern off but these too can be fixed by replacing them with perfect alignment, which can be achieved.

The initial cleaning of the carpet was done in one corridor with hot water extraction, using a portable machine and the rest was cleaned with the bonnet method. The dark soil they saw could have been from dirt left in the waste tank of the extractor. The fraying at seam edges could have been created or made worse by the bonnet cleaning pulling laterally on the face of the carpet - one of the reasons this method is not condoned by the carpet industry.

We got new samples of the carpet for testing. The tests were for accelerated soiling, extractable matter, tuft bind, and fluorine. There was no inherent residue in the carpet to instigate soiling. We even extraction cleaned a new piece of the carpet to see if there was anything that would turn the water black. The water from the extractor was trapped and was only murky not black or filthy - this you'd expect to see. By the way the carpet exhibiting the concern for soiling, which is the field carpet in the corridors, is a very light color which will show soil and not hide it - not the perfect color choice. The tuft bind tests were over 18 pounds, this is excellent. The pulled loops, which had some fraying on the tips, had to have been snagged by something to cause them. None of them were pulled out, only up higher than the rest of the carpet surface. The accelerated soiling test, which is a test to see how dirty the carpet gets and then how well it cleans up with vacuuming and then extraction cleaning, were no surprise either. The lighter color had a 3.5 on a scale of 5 which would be considered about normal for that light a color. The darker color tested at 4.5 with 5 being no change, soiling would not be blatantly evident on this carpet. The fluorine level was 959 very high and very effective for a commercial product.

There were no manufacturing defects in these carpets. All the concerns can be corrected. The biggest problem is the lightest color was used in the highest traffic area - a specification problem. If the carpet had been a light or medium brown there would be no concern for its appearance. Because the carpet in the highest use areas is a very light color any soiling or spillage will show and be exacerbated. This carpet is going to require diligent care and maintenance. Every issue, and then some, was noted, analyzed, tested, evaluated, explained and resolutions described. As a result the carpet will not be replaced, the contractor is at ease as is

the end user and the designer. Further, the light color in this scheme, which was to be used on two more floors with heavier traffic, has been eliminated and a darker color with a busier pattern from Karastan chosen, which we helped them select.

This is an example of what happens when people are reasonable, they don't allow a concern to fester and don't wait for the situation to blow up on them. There is virtually no loss on this job at all. The biggest expense was our fees, which are very small in comparison to what could have been if they didn't act fast. As I've always said, the carpet never lies, it will always tell you what's wrong if you know how to interpret what it's saying. The evidence on sight revealed causes and answers and the carpet autopsy, the lab testing, gave us conclusive answers eliminating the carpet as the problem and confirming they made a wise choice and purchase. Knowing what you're looking at and matching it to the appropriate tests, some even unorthodox, will always give you answers.

Everyday commercial dealers, contractors, manufacturers and end users are faced with situations like these. You can see for yourself from the abbreviated examples shared here why problems exist and what should be done to prevent them. When you need help with anything like this or just want to ask a question, call me. In fact, if you are facing a perplexing claim, call right now.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT 11-19-2003

ACTUAL CASES

I'd like to share some interesting issues called in by dealers and field claims I've looked at.

Should the Rooms Be Empty?

A dealer called with a concern for installing carpet in a hotel. The end user wanted the dealer to bid on the job without removing the furniture from the guest rooms in which the carpet was to be installed. The end user felt the installers could move the furniture from one side of the room to the other and work around it. Aside from this being one of the more stupid requests we've heard in a long time, the dealer, who rightfully took issue with this request, wanted to know if there was an industry standard for installing carpet in empty rooms. Crazy as it sounds, it is actually a good question. Nowhere is it written that carpet, or any flooring material for that matter, should only be installed when rooms are empty of furnishings. Trying to install carpet in hotel rooms with the furniture still in them to try and save money is insane. Regardless of the method of installation, be it direct glued down, double stick or pad and tackstrip, the installation cannot be conducted or successfully accomplished if the room is not empty. There is no industry standard for this; nowhere is it written that areas to be carpeted should be empty. However, common sense should dictate that any area to be carpeted must be free of any obstructions, which includes furniture, before the carpet can be installed. Would these people requesting the furniture not be moved to install carpet ask the painter or wallpaper hangar to complete their work with pictures and lighting hanging on the walls? I don't think so. The fact that the commercial dealer even had to ask this question begs for more detail related to installation of carpet. The assumption by anyone with half a brain should certainly be that the rooms should be empty but there is nothing in writing nor anything specifically stating this. Therefore, as ridiculous as it sounds, someone could, as they have in this case, tell an installer they don't want the furniture moved. After all, nothing says that furniture should be moved. The industrys' installation guidelines tell how the carpet is to be installed relative to adhesive applications and stretch in format. It might behoove those of you reading this to include a statement in your proposal or installation guidelines that the rooms must be free of furnishing and other obstructions which would impede the proper installation of the carpet. Otherwise, if there is a claim for on a carpet installation that doesn't mention furniture, you could conceivably be held liable because you didn't specifically state something could or could not be done nor did any industry guideline say so. I'll say it here so that it's in print, published by an independent source as public knowledge. All areas that are to receive carpet, or any other floor covering material, must be free from any furnishings or obstructions that would impede, hinder or compromise the installation of the floor covering material. Any claims or complaints resulting from furnishings or other obstructions existing in the installation environment, which would compromise the installation, and their presence would compromise the installation and the product installed, should not be honored or entertained. Problems which could result from not removing furnishing could be, but are not limited to, wrinkles, permanent indentations, loose carpet and distortions in the material or the pattern. No room should have furniture that is to receive floorcovering.

Loosing the Pattern

The Commercial FLOORING REPORT
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On four separate occasions, complaints on products installed for a relatively short period of time, the end users concern was for the pattern disappearing. Two of the products were organic patterned tip shears and two were loop pile woven goods with linear block style patterns. The concern with the two tip sheared products was the pattern "walking out", basically disappearing in the traffic areas. The woven patterned goods were both light colored carpets and the pattern disappeared when looking at the carpet about 20 feet from the point of observation. In other words, the pattern is visible close to where you are standing but the further out you look, in a corridor for example, the pattern disappears and the carpet appears to be one color - in these two cases that was a light color. None of the end users of any of these products anticipated nor expected that the pattern they chose would not be visible to them once the carpet was installed. The samples were vividly patterned and the small samples they were shown clearly indicated a pattern that was blatantly and vividly obvious. What happened to the carpets to cause the pattern to disappear generating complaints from the end user?

In one case of the tip sheared product the carpet is a tone on tone pattern. When the carpet compresses from traffic the pattern literally disappears. The compression on the face of the carpet causes the pattern to be obscured so that when the carpet is viewed over an expanse it appears as if there is no pattern at all. This is very frustrating to the end user because adjacent to this carpet are tufted and printed patterns that have been down for many years. There is no loss of a distinctive pattern in any of the older carpets - the newer complaint carpet appears to be older to them. When we tested this carpet, subjecting it to 12,000 cycles in the Hexapod test, we were able to replicate the complaint appearance. Is this then a defect in the goods because the pattern washed out? No. Because the carpet is basically a tone on tone color pattern, there is no contrast in the colors to make the pattern configurations distinct and separate. The tip shearing of the larger portions of the pattern, as well as cut pile yarn next to loop pile yarn in a linear configuration, are basically singles yarns. They are not highly resilient and when subjected to volumes of traffic their reaction is to compress, which causes the carpet to reflect light. These are design elements in the carpet. This product would work in a less "hostile" environment because the pattern wouldn't disappear. There is no defect in the carpet. It is not failing to perform because of a deficiency in structural integrity nor because some physical component is failing. The problem is having specified this product in the first place. This type of carpet will react in this way because it is an inherent characteristic of its performance and appearance retention given it construction, coloration and yarn configuration.

In the second case of a tip shear failing to perform up to the end users expectations, the manufacturer actually supplied a letter telling the end user not to use the product they chose and if they did what would happen to the carpets appearance. Don't you know they were telling the truth. The end user however, still complained when the carpet did exactly what the manufacturer said it would - they found their way to us to voice their concern. After reviewing all the documents, in which we found the manufacturers letter, going to job sites to look at the carpet installed, getting samples from several other locations and running a battery of tests on the carpet to get it to do what they were experiencing, we found the answer to the problem - it was the same as the manufacturer had told them. This product is not appropriate for use in this application. Had they heeded the refreshingly wise advice from the manufacturer, they would have saved themselves the aggravation of their discontent and the expense of finding out what they had initially been made aware of in this products performance characteristics.

In both of these cases the same colorations and patterns could have been used with loop pile yarn and both of these complaints could have been avoided. Which brings us to the point that you have to know what to use where and why. It doesn't mean you'll blow the sale to suggest a product that will actually work and look they way the client wants it to. In fact, the client would probably be very pleased if you made the suggestion or had something in print relative to what works where and why. The most important word here is why, you have to tell them why. You could use this article or excerpts from it or I could write you something if you'd like to help you avoid these kinds of problems - costly as they are to both your bottom line and reputation.

The other two complaint carpets were loop pile patterns. Coincidentally, both of them were beige base colors with brown or tan block patterns- one was large blocks, the other small. The concern was for the pattern disappearing with the small block pattern and soiling and the large block pattern was for soiling. Both of these carpets were excellent quality but again, the pattern in a small sample piece gave the illusion of being much more prominent than it actually wound up being on the floor. When these carpets were installed in both cases the end users complained about soiling and appearance loss - within days.

When the carpets were inspected there was indeed a legitimacy to the complaints. The patterns did wash out and the carpet did have spots on them. Why? Was this a defect or not? No defects in either product. The light dominant color in the pattern reflected more light and therefore washed out the dark yarn in the pattern. The light color also exacerbated soiling and any spillage which left a residue to attract soil. As a result the impression was that there was a problem with both carpets. Accelerated soiling tests were performed and both products passed the test according to the grading scale, however, because they were both light colors the soil was more obvious. The spots logically are going to be more obvious because nothing in the color or pattern would hide them. Again, no defects, just a specification problem. The right carpet was chosen but the wrong colors were used. In a small sample you can't tell, unless you are attuned to what the carpet is going to be experiencing on the floor, what it is actually going to look like. All you have to know is that light colors in this type of patterned goods will actually work to mute the definition of the pattern. Combinations of starkly contrasting colors will accentuate the definition of the pattern and prevent it from being obscured and magnifying soiling. This is all very simple stuff really and common sense, which unfortunately has a way of evaporating when one of these types of complaints arises.

How were the last two complaints resolved. In one of the cases the concern carpet was only installed on one of four floors scheduled to be recarpeted. We were able to influence the general contractor and designer to change the color and pattern of the carpet - darker colors, busier pattern, on the remaining floors. Since the carpet for the three additional floors, which were going to get much more traffic than the floor the light color was installed on, had not been received, the option existed to change the order. The client sent us samples of the re-selected carpet, it fit the bill and we told them the new choice they made was excellent - practical and inherently problem free relative to the color and pattern. That decision saved them a lot of headache and pain. The manufacturer didn't even know we helped them dodge the bullet in this case. The other case of the light colored carpet necessitated a change in the maintenance plan. The carpet would have to be cleaned more often, focusing on the highest traffic areas, and a

conscious effort made to keep it looking good. We referred the client to Host carpet cleaning system for maintenance. In my opinion, especially in commercial applications, this cleaning and maintenance system can't be beat for maintaining the original appearance of the carpet. Employed properly, conceivably, the carpet would never have to experience a deep extraction cleaning to try to bring the heaviest soiled and used areas back to a presentable appearance because it would never be allowed to get to that point. Where spots are concerned, the carpet can be spot cleaned with a cleaning "solution" which does not leave a residue that can re-attract soil. Typically with a wet cleaning system the cleaner will apply a preconditioner to the spots, then use additional cleaning solution and water to remove a dark spot. Almost always the dark spot is removed. However, unless there is a complete purging of all of the cleaning agents used, plus the original substance that caused the spot and the carpet allowed to dry before being trafficked, chances are the spot will return. With a dry compound cleaner such as Host the likelihood of a removed spot coming back is remote at best. There's nothing miraculous about this it's just a common sense approach that works. If you can correct a situation, prevent "ugly out" from occurring and keep the carpet closer to a like new appearance you'll avoid complaints that ensnare you like a spiders web.

I am a firm believer in simple solutions to complex problems and there always is one. Avoidance is the easiest way to stay out of trouble, that means being conscious of what kind of a problem could occur if you put the wrong carpet, or any flooring material for that matter, in the wrong place. All you have to do is guide the end user to the right product. If they insist on the wrong choice and you can see your headed for the brink of the falls, you have two choices - back out of the deal or go forward knowing you're going to experience some degree of pain.

If I can help you avoid or resolve any situations similar to what you've just read, let me know. It may only be as a voice of reason but it may be just enough to keep you from the pain of trouble. You may be able to resolve an issue or, at the very least, find out exactly why you have the problem.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #9 2-9-04

RECENT VINYL ISSUES

The first case involves a church which has level loop commercial carpet in the sanctuary and all the open traffic areas. Under the pews there is vinyl asbestos tiles. The pews are being removed and they want to carpet the entire space. The installer they are working with has told them the tiles would have to be removed because the new glued down carpet would pull them up if they installed over the top of them. If the tiles are removed, because they may contain asbestos, they were told this process would be very costly, they were also told that all the adhesive holding the tiles in place would have to be removed because new adhesive would not adhere to it. It is apparent the installer doesn't know what he's talking about.

There is no reason you can't install carpet over the top of existing vinyl or vinyl asbestos tiles if they are firmly affixed to the substrate, not broken or friable. As long as there is no chance or indication that the tile will come off the floor there is no reason to remove them. Even if some of the tile come loose, and there is no indication any of the tiles are loose, they can be removed, the space filled in and leveled. If the tile material is not friable, that is powdery or able to become airborne particulate, there is no risk of asbestos contamination. If the tiles are down tight they need only be cleaned of any surface contaminants such as wax, sealers, floor finishes or other adhesion compromising substance before carpet can be installed over them. There are also sealers which can be applied once the tiles are cleaned so that adhesive will stick to them, as well as premium adhesives that will work with this installation. If the carpet manufacturer says you can't go over tiles like this then you have to heed that directive and prep accordingly but I don't know of any that would make you take up existing, firmly affixed tiles if they did not pose any threat of causing an installation or material failure.

If the tiles are removed and there is cut back adhesive underneath them it would be necessary to remove as much of the cut back as possible and abate it if necessary. If there is some of the adhesive remaining there are sealers and treatments that would encase it and not allow a reaction with the adhesive used to install carpet - bead blasting could be avoided. If there are no other negative influences to cause the installation to fail or that would negatively affect the carpet, then it can be installed. A knowledgeable installer and flooring contractor would know these things.

The other question posed in this case is the difference in elevation when the carpet is placed over the existing tile. Certainly there will have to be a feathered transition from the substrate to the edge of the tile so the carpet will not meet at a sharp edge. A cementitious fill and leveler could be used or transition strips, a new invention by an installer, could be installed to allow for a smooth ramped blending of the two surfaces. There is no reason this job won't work - a problem is being created here that does not exist.

In another case a strip plank wood vinyl floor was installed in a cafeteria and soon after a complaint arose because dark soil was building up in the gaps between the light colored planks.

The end user felt this was an installation problem. The general contractor, end user and flooring installation contractor were all present at the time the material was being inspected. The flooring contractor explained the site conditions, how the floor was prepared exactly how the vinyl flooring material was installed. It was evident everything was done exactly as it should have been and it was determined the installation was not the problem. The end user was cleaning the floor with an agent that was causing plasticizer migration at the edges of the vinyl material causing gapping. This in turn caused the adhesive to emulsify at the edge of the vinyl weakening it. The combination of plasticizer from the vinyl and weakened adhesive, caused a dark build up at the edges of the light colored planks resulting in the complaint condition. The problem was due to the way the vinyl floor was being maintained. Prior to the vinyl being installed the floor was ceramic tile which is cared for in a completely different way than vinyl. The maintenance procedures for the new vinyl floor caused the complaint condition. This was further exacerbated by the fact that the substrate was directly over an open parking garage that was not heated so the concrete expands and contracts with the heat and cold of the outdoors. The movement of the substrate, however slight, would also affect the space between the vinyl planks. The planks were installed tight and flush but they have now opened up slightly in the width and the length. Tests of the vinyl material indicated it was dimensionally stable and research of the cleaning agent and its affect on vinyl proved it would cause plasticizer migration. There was nothing wrong with the material or the installation - the cleaning was the primary culprit. The end user doesn't want to believe they created the problem. However, when looking in other areas of the facility with vinyl tile, gaps can also be seen in this material. Because it is a different make up, vinyl composition and not a pure vinyl, and a darker color, the same condition will not exist, but soil will also build up in those gaps.

In the next case vinyl composition tile was installed in a government housing project. The main floor was concrete slab the second floor was plywood. The same flooring company installed all the material using two different adhesives from two different adhesive manufacturers. The problem was that all the tile on the second floor plywood was coming loose. The adhesive in every building on the second floor plywood had crystallized. The tile on the concrete was so tight that it couldn't be lifted off the floor without breaking it into pieces. How is it that, with everything being the same, only the tile on the plywood was coming loose. The first thought has to be looking for the common denominator. The chances of two adhesives failing in exactly the same way is higly unlikely - they both worked on the concrete, they both failed on the plywood. We took adhesive samples, plywood samples cut from the floor with adhesive on it, new plywood and the tiles, for testing. We also used another premium adhesive for a control material. All the adhesive tested on this plywood failed. The plywood was tested and found to contain a component that would cause the adhesive to fail. In fact, in researching all the documents we found one document from the plywood manufacturer that mentioned why the plywood would cause the adhesive to fail. Despite all the proof, documented and from multiple tests, as to the absolute cause of the failure, the plywood, the powers that be wanted to blame the installation contractor. The failure was not his fault. The recommendation to resolve the problem was to pull all the tile up, almost all of which was loose enough to do so, and either replace the plywood or go over the top of the entire job with a thinner material which would mean cutting down doors and pulling moldings off and replacing them and installing new vinyl tile. The plywood manufacturer swore up and down this wasn't their fault but we could prove it was by indentifying chemical substances in the plywood that destroyed adhesive. The evidence

never lies - just like in the CSI crime shows. We can almost always prove what went wrong, why and who is at fault.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #10 3-25-04

SHRINKING CARPET - EPIDEMIC OR NOT?

The following problem has been an issue for several years. I wrote articles about this at least 15 years ago and the industry has known about this since long before then. The problem of which I speak is the installation of step over stitched, shifted or graphics constructed, latex unitary backed carpet and it's propensity to shrink, in the width, in as little as 24 hours after having been installed. This can also happen with woven polypropylene backed carpet as well. Knowing this can happen and that there is a technique and manufacturing process that can prevent it will keep you out of trouble. You can count on someone contacting our office with this problem regularly. If the flooring contractors contacting us are having this problem it's a sure bet a lot more contractors have the same problem. Those who don't know about this problem are getting blamed for something that's preventable and controllable but very difficult to fix and resolve after it manifests itself.

I want to give you a very specific example of a recent problem experienced by a flooring contractor and some of the ambiguous and downright incorrect information and responses he got from people who are supposed to be knowledgeable including, in this case, the manufacturer.

This particular installation was in a city government building. The carpet was a latex unitary backed product with a step over stitch construction - this means the yarn on the back was interlaced, similar to a chain link fence. On the surface the carpet was not patterned but a multi-colored tweed level loop. Looking at the face of the carpet would give you no indication the product was tufted on step over stitch machine. The contractor, therefore, had no indication he might have an issue with this product even if he was aware that latex unitary backed carpets like this could be dimensionally unstable. (I'll explain why later)

As it was explained to me, they used a premium multi-purpose adhesive with a 1/8x1/8x1/8 inch "U" notched trowel with a spread rate of about 7.5 yards per gallon over a Luan substrate. The carpet was laid out, the selvedge trimmed and it was fully acclimated for over 24 hours prior to installation. The carpet rolls had also been stored in the building for three months prior to installation. The carpet looked perfect when the job was completed, then came the problem.

The carpet contracted, pulling away at the seams and from the perimeter walls. No one could understand why. There were two independent inspections performed on this carpet, one commissioned by the manufacturer and one by the flooring contractor. One report describes the seams as being tight in some areas, intermittently gapped in others and gapped by as much as one inch in one seam. The seams were sealed because loops were being pulled out of one side of one panel and the seam sealer was holding them. Where carpet had lifted forming humps it was pushed back down into the existing adhesive and it strongly resisted being pulled back up. This indicates the tenacity of the adhesive was still good. In other areas the inspector said there was no transfer of adhesive to the back of the carpet indicating too much open time for the adhesive. The carpet was rolled immediately after installation with a 75 pound roller, as specified by the manufacturer and then again later. The inspector said a humidity test revealed low humidity and this might be the reason the adhesive had dried quickly. The temperature is fluctuated in the

building during use and non-use times and this will have an affect on the carpet causing a gain and loss of moisture and an expansion and contraction of the product. Also suggested was a dimensional stability issue with the carpet and that it might be a possible contributor to the problem. No definitive conclusion was reached by either inspector so no one would know what happened here and why. The manufacturer interpreted their report to mean that this failure was completely the result of installation - it wasn't.

The second report stated that the carpet was not acclimated, not rolled, too much open time of the adhesive and that there may also be a dimensional stability problem with the product. All of this was suspected, none of it was definitively determined nor was there any conclusion in this report. This inspector feels corrective action can be taken by installing saddles where the seams have opened. This was tried and not accepted by the end user. In fact, after the saddles were placed in the seams the carpet panels on either side moved more and buckled again.

This is only one case, there's more. Another flooring contractor sent us information on a problem they have with shrinking carpet. This product was also a graphics construction but it did have a woven secondary backing. It shrank after a couple of months on the floor. The installation looked perfect when the job was finished and then, all of a sudden, the material started to separate at the seams. The contractor went back, on several occasions, and attempted repairs of varying kinds. The material was installed on both concrete, primarily, and on some plywood. This made no difference because the carpet shrunk on both surfaces. A high quality adhesive was used, the seams were sealed and still the carpet pulled apart at the seams. The same product in another part of the facility, has never exhibited a problem. Again, two inspectors looked at the carpet. One felt is was a problem with the product and the other felt it was installation but neither came to a conclusion. The reports from all of these people are open to interpretation and can be massaged to gain an end. How can you determine what's wrong, who's at fault, why and what can be done to correct or resolve the issues if there is no conclusion from the so called experts? This is a very frustrating situation and indeed indicates that the guys being trusted to tell you what's wrong and why don't know the product, haven't researched the problem and can possibly come up with a cause or place blame where it should be placed. In these cases, you get what you pay for, which is very little.

Next, and possibly the most scary part of the shrinking carpets, is that the manufacturers don't know what's wrong with them or why they're shrinking. Case in point is the same product from one manufacturer, on a different floor, in a different color, is not shrinking and has never presented a problem, why? They're not sure. How could the same product be dimensionally unstable one day it's manufactured and not on another day? There are variables that could make this happen, so let's analyze the construction of the product to determine what these are.

This information is repetitious because I've written about it before but it's important it be addressed again for the sake of hopefully helping to prevent this problem. First of all remember this statement, which I learned many years ago in this industry. "Either you control the carpet or the carpet controls you." I was taught this by a man who I consider one of the unheralded eccentric geniuses of the industry. They were working with new technology and had to learn as they went. They found what worked and what didn't putting backings and backing finishes on carpet. The learned what was stable, what wasn't, why and how to make it stable if it wasn't.

Thus the statement that you must control the carpet during manufacture to insure it's stability or suffer the consequences of not doing so. You have also got to heed the physical characteristics of the product and know how it will respond in the installation environment in every way. It's not enough to determine if the product is stable when you make it, but it also has to be determined if it will remain stable when installed, using different adhesives, on different substrates with varying atmospheric (heat and humidity) influences.

How big an issue is this really? If the last month is any indication, this is a major concern in the commercial environment. I have had calls and letters from commercial flooring dealers with shrinking carpet problems lately that we are addressing as well as conversations and meetings with commercial carpet manufacturers recently. What's happening is this. The carpet is laid out, the selvedge trimmed and the product acclimated on site, in most of these cases. The substrate, again, in most of the cases, has been checked and tested for moisture vapor emission. A high quality adhesive is applied, or so it has been said, in most cases, and the carpet installed with the seams being sealed. After as little as 24 hours the seams, which were tight when the installation was completed, separate and the panels on either side shrink as much as ½ inch total. This occurs either uniformly or sporadically. In almost all of these cases the carpet is a graphics tufted (step over stitched) nylon. The significance of the nylon yarn is that it will gain and lose moisture, up to 4 ½% and in doing so it will expand and contract. The significance of the step over stitch construction is that the yarn is stepped over, making it intertwined on the backing. The gain and loss of moisture in the nylon yarn will cause the carpet to contract or shrink in the width because the step over is in the width. Simply put, all the tension in the carpet will be in the width, not in the length. The volatizing (drying and evaporating) moisture from the adhesive can act as a catalyst in the gain and loss of moisture and cause the carpet to shrink. Is this reaction any different with a straight row stitched product? Yes. The straight row stitch construction has no cross over in the yarn. Each row is separate and does not intermingle with any other yarn, therefore there is no inherent tension built into the carpet. Even though the nylon will still gain and lose moisture, which may effect some movement in the carpet, there is no widthwise reaction that will affect the seams.

The shrinkage can and does occur in periods of time greater than 24 hours. In some cases it has been months since any shrinking was noticed. Why is this? There can be several reasons. First, there may be an ambient change in the environment caused by changes in the settings of the air handling systems. There can be changes in the natural air from increases or decreases in heat and humidity. There could be a compromise of the adhesive from tackifier destruction caused by moisture vapor emission in the substrate that carries with it alkalinity which will destroy adhesive tackifier. The adhesion of the carpet may have been weak to start with and, over a period of time, enough compromise may have occurred in the adhesion, either from traffic, cleaning or stresses of moisture gain and loss, to break the bond of the adhesive allowing the carpet the freedom to move. Using seam sealer is no guarantee the seams will not open up. The force exerted across the plain of the carpet from the stress created in the gain and loss of moisture can pull the seams apart. In fact, the sealer may hold and the carpet itself could pull apart at the edge.
What is this inherent tension built into the carpet in a graphics tufted product? You have to understand the manufacturing process to understand the physics in place here. First, the carpet is tufted into a woven polypropylene primary backing which is held very taught during the tufting

process. When the two shifting needle bars insert the yarn they exert a lateral force on the backing. When the tufted material is finally released from the tension on the tufting machine the backing material will naturally want to return to where it was but the yarn is pulling in another direction. When this material goes to the finishing range for backing it is again pulled out in the width. Either a latex unitary or low pic woven polypropylene backing is applied at this point and then the product goes into the drying range for curing. The length of the drying range, temperature and time in the range could effect additional tension or dimensional changes in the polypropylene backing as well as drying out the yarn, this instigates some dimensional change in the product. Now, at the job site the carpet has a built in memory and it will try to get back to where it wants to be as well as being influenced by environmental reactive changes affecting the material. The nylon will react to gain and loss of moisture and the polypropylene will react to gain and loss of heat. There's a fight going on in the product for positioning. This is the law of science and physics at work.

Can this shrinkage be prevented and how? There are several ways it can be. The first is to tuft into a non-directional primary backing. These types of backings tend to keep the carpet much more dimensionally stable. Second is to put a more dimensionally stable secondary backing on the product. Shaw and SI, for example, have developed a few new backings which hold the product stable and enhance installation. Application of a polyurethane backing will keep the carpet much more dimensionally stable as well. The carpet must be acclimated on site, the temperature and humidity must be controlled and the substrate tested for moisture. A premium adhesive must be used and transfer of adhesive between the substrate and the carpet backing complete. Using the contact method of installation will help immensely in tenaciously holding the carpet in place. The seams must be sealed and, if deemed necessary and reasonable, a very low profile seam tape used as insurance.

Shrinking, or movement in the carpet, is an inherent condition built into the product. Excessive movement indicates the product is not under control. Shrinking may be blamed on installation but the movement is actually a physical reaction of the carpet to an on site stimulus or the product trying to get back to the position it remembers. Despite the best installation practices, shrinkage may still occur. In fact, if the adhesive is heavy and has a lot of body, developing lots of legs, the reacting carpet may move right across the top of it. Once energy is allowed to build up in the carpet there is a tremendous amount of force generated across the carpet and one way or another it will find a way to move and distort itself. This movement is exhibited most graphically in the seams shrinking when in fact the entire carpet has shrunk.

As long as the conditions exist, either inherently in the construction of the or on the job site, you have to be keenly aware that the potential exists for graphics tufted carpets to shrink when glued directly to the substrate. This is nothing new. Have your concerns before the job instead of headaches afterwards. Call me if you have any questions or when you need help. Remember, the carpet never lies, it will always tell you what's wrong if you know how to interpret what it's saying. And, there is always a conclusive answer for every problem, accept nothing less.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #11 4-23-04

APPEARANCE RETENTION RATING GUIDELINES

Up until now there has been no industry-wide standard or any published guidelines stating what appearance retention is, nor has there been anything to gauge it in the commercial segment of the market. There were no written guidelines or standards by individual manufacturers either that gave any type of measure to the change in a carpets appearance relative to pertinent factors and the location of use. Appearance retention is simply the carpets ability to resist uglying out for a reasonable period of time. Every end user expects that the considerable investment they make in carpet is going to be amortized over several years. Depending on whether the carpet is installed in a hospitality environment or a government building, time is a variable element. Any pre-mature change in the carpets appearance, which is measured by the expectations of the end user, and judged at least in part by the statements made by the product information, salesperson, architect, designer or specifier, is used to gauge the performance and appearance retention of the carpet. Simply, if they thought it was going to keep looking good, it better or you've just stepped into the slop.

The Key Elements of Appearance Retention

Appearance retention is a factor of the carpets construction, its use and abuse, color and maintenance.

Construction: generally speaking, the denser the product the better it will perform and therefore the better it should look and hold up during its performance life. A tighter yarn twist, closer gauge, higher stitch rate and lower pile height all factor into density relative to performance and appearance retention. Carpets that are constructed with the proper characteristics for the intended use will deliver the expected results and should maintain close to their original appearance for as long as they are in service, providing they are properly maintained and installed. It is always possible, and often beneficial, to test the product beforehand to determine exactly how it will look and perform in the use environment. The product shouldn't be under-built or over-built for the intended use. Under-built will yield poor performance and complaints. Over-built could have the client spending more money on the product than necessary. One thing that must be understood is that weight has nothing to do with performance. There are many more factors that will make a product perform and weight isn't one of them - density is the key. With the new backing systems and construction technologies it is possible to make carpet that will look good until the end user gets tired of looking at it and some of these products have much less than 20 ounces of face weight. In fact, with the advancement in fiber performance, yarn technology and backing systems it is possible to get very high performance out of low face weights. Construction of the product is relevant to texture retention which is what appearance retention is based on. The use of loop pile, cut pile or cut and loop pile should be matched with the traffic the product will be subjected to and what is expected of its performance and appearance retention.

Color: the importance of color cannot be neglected when considering the appearance retention of a commercial carpet. Color has no bearing on the texture retention of the carpet but is has a huge

influence on how good the carpet will look when placed into service. In general, the lighter the color the dirtier the carpet will look because it is less able to hide soil despite any soil or stain resist treatment it might have. The darker the color the better the carpet will mask tracked in soil. The more the surface of the carpet is "busied" by pattern and texture the better it will look overall. The proper color and texture are crucial to appearance retention. A carpet constructed dense enough to support the weight of a tank won't look good if the color is a bright yellow, light blue or some other light color that will minimize the value of it's appearance and thus its performance. This carpet might never wear out but it will certainly ugly out and when it does it will be perceived to be failing to perform in the end users opinion. Nothing makes a client feel worse than owning a beautiful new carpet that looks ugly after a very short period of use. This is a problem which can be easily avoided by using the correct product for the application.

Use and Abuse: two factors rarely given enough serious attention during the specification and sales process. Two questions that must be answered are: 1. Where and how is the carpet going to be used and 2. How is it going to be maintained? The answers will direct the decision for the product to be specified to the right place. That is a product that will live up to the expectations of the end user. What does this mean? A heavily used area will require a carpet that is capable of delivering exemplary service and one that will look good while doing so. A light use area can escape with a flooring product that is not engineered to be beat up everyday by heavy traffic and minimal care. Just by looking at the space a new carpet is going to be installed in, or if a new construction, what the space is to be used for, will dictate what kind of carpet will qualify for application in that particular environment.

Maintenance: the last part of the puzzle. No matter what carpet is used, unless it is properly maintained, the key word being properly, it will be destined to fail. A planned maintenance program must be part of the decision making process to use a particular type and color carpet. Maintenance will prolong the life of the carpet and keep it looking good over that life span. A floor plan should be used and color coded, and the methods of cleaning designated with frequencies of service, for traffic categories determined to be heavy, medium and light use. The first line of defense is vacuuming with equipment designed to remove soil effectively and efficiently before applying any cleaning method. Therefore it is important to engage the services of someone who really understands the carpet, how it is going to be used and the methods which should be employed to clean it. The issue should be re-visited after the first year to determine if any changes are required and to evaluate the carpets performance, and response to the use and cleaning it is being subjected to.

The New CRI Appearance Retention Rating System:

The ARR system identifies the level of appearance change of a carpet surface resulting from foot traffic. These guidelines will assist specifiers in selecting commercial carpets with acceptable appearance retention performance in the specified end use application.

The Scope of the Guidelines:
The Carpet Appearance Retention Ratings (ARR) identifies change-in-appearance on a 1 to 5 numbered scale: 5 represents no change in appearance, and 1 represents a very severe change. The ARR indicates the amount of surface appearance retention expected in a given traffic area

during the first year of service. The ARR does not reflect the potential influence of variable factors such as soiling, staining, maintenance and installation. Carpet with a higher ARR, such as 4.5 or 4.0, will retain its original new appearance longer in various traffic conditions than carpet with a lower ARR. These guidelines are not applicable to rugs, needled textile floor coverings with pile, or electrostatically flocked textile floor coverings.

Appearance Retention Rating Determination:

The Appearance Retention Rating Determination value is determined by grading the appearance change of a carpet subjected to exposure conditions in accordance with the ASTM D-5252 (Hexapod) test practice. The Hexapod test subjects a section of carpet, placed in a cylindrical drum containing the weighted Hexapod device, to a predetermined number of cycles (12,000) replicating foot traffics and use. The carpets are tested without underlay of any kind to determine the full affect of the test on the carpet itself without any cushioning system. The exposure-conditioned carpet appearance retention shall be rated according to CRI TM - Assessment of Carpet Surface Appearance Change using CRI Carpet Appearance Retention Grading Scales - a visual comparison and rating system.

To obtain the projected appearance retention performance, carpet must be correctly installed following manufacturers instructions and in accordance with the installation guidelines in CRI - 104 Standard for Installation Specification of Commercial Carpet. Continuing maintenance must be in accordance with the carpet manufacturers recommendations.

Following is Table 1, which is the Appearance Retention Rating Determination for Commercial Carpet. This is based on a 12,000 cycle Hexapod exposure conditioning test. Commercial carpets shall have at least a:
>2.5 ARR for application in a Moderate traffic end use
>3.0 ARR for application in a Heavy traffic end use
>3.5 ARR for application in a Severe traffic end use
There is a Table 2, which we'll give you examples for selecting an ARR for a specified end use.

The moderate, heavy, or severe end-use classification is determined based on the expected number of users, type of traffic, anticipated frequency and intensity of use, and similar factors. The classification system indicates the *minimum* Appearance Retention Rating for an individual end-use application. At the discretion of the specifier, a higher ARR classification may be specified for the end use application. This would be determined by an individual classification of the end use as it relates to information mentioned previously in this article. In other words, any particular traffic load determination by the specifier or consultant, based on qualifying the end use and user, would be the basis for categorizing the carpet selected for the application. The traffic level classification for stair applications, however, will always be rated as severe.

Table 2: Each end use application is identified with either a Moderate, Heavy or Severe Traffic Level Classification. For an individual end-use application, select a commercial carpet with at least an ARR as indicted in the Traffic Level Classification column (you can find this on the CRI website www.carpet-rug.com and look under Appearance Retention Rating Guidelines).

Without going over the entire chart some of the listing for businesses are: Banks and Credit Unions, Bowling Alleys, Chapels and other Religious Facilities, Child Care Centers, Golf Courses, Lodging Facilities, Medical Facilities, Retail Stores, etc. For each of these listings, which are used as examples, there is subcategories for the areas of use.

The information I've just written about can be found on the CRI web-site, www.carpet-rug.com. With this article and the information on the web site, there is no reason for anyone to put the wrong carpet in the wrong place. Further, there is now a guideline for particular usage and performance for commercial carpet products. This should allow for complaints and claims to be minimized or eliminated, especially relevant to a products loss of appearance. This is almost always equated to a problem with the product and seldom does anyone want to, nor are they willing to, accept the fact that they chose the wrong product, knowingly or not.

This guideline goes to the biggest category of complaints and claims and that is- not understanding the product and where and how it should be used. We all hear that installation is the biggest complaint but it's not; not knowing or understanding is.

More and more the manufacturers rep is relied upon to be the technical expert and information maven for carpet. They may understand their product but they don't look at the project in an objective way simply because they want to sell the product they represent and there's nothing wrong with that. The issue is that someone should be looking at the entire project to determine if the products being considered, offered, specified and chosen are actually going to perform up to the expectations of the end user. Too often they don't because someone didn't consider the construction of the product, the colors being used and the affects the traffic, use and abuse would have on them. Further, proper maintenance procedures, techniques and scheduling were not seriously considered and made part of the decision making process.

Almost every problem that can be experienced in the commercial carpet/floor covering arena could have been prevented had an objective look at how the product was going to be used and cared for. But, not to minimize it's importance, installation does, in fact, play a big part in this equation as well.

We can help you with any concerns you have with any floor covering product you're working with whether you're a contract dealer, end user or manufacturer. Need help? Call us and ask.

The Commercial FLOORING REPORT
Lewis G. Migliore - lgmtcs@optilink.us

THE COMMERCIAL FLOORING REPORT #12 3-31-04

We constantly hear that installation is the biggest problem in the industry. Whether it's commercial or residential carpet, the installer is made to be the bad guy when there's any failure that can remotely be attributed to installation. Not testing the substrate, not enough adhesive, pattern not worked properly to align it, seams not sealed and so on, all blamed on installation or the installer. I am an advocate for working to resolve any issue related to installation blamed on the installer who doesn't get the support of his dealer when he should. Recently however, there have been several situations we've gotten involved in that are of real concern because not only are they contributing to installation problems but they clearly show that the installer doesn't know the products he's working with. All of the installers have, naturally, had over 20 years of experience installing carpet, they always do. None of them however could answer simple questions posed to them when trying to help them resolve the challenge they were faced with on the job. Let me share these with you.

In one case the installer called the manufacturer with a concern about not being able to cut the carpet straight, telling the manufacturer there was a problem with their carpet. The product he was questioning was a straight row stitched cut and loop pattern piece of goods, very densely constructed with a barber poled type yarn. He called to tell the manufacturer that their carpet was a piece of junk and that it could not be cut to make a proper seam. After talking to the installer to find out exactly what he was doing so we could determine what the problem might be and how to help him overcome it, we found, to our amazement, that he was trying to cut the carpet with a electric glass cutter. Why? Only he knows. This was something I had never heard before and didn't even know there was a tool that did this. It may be a technique he had used before, and I've got to assume it was, or else why would he be using it on this carpet? He was told he had to run a row on the carpet and could use a top cutter or cushion back cutter. He had never heard of this carpet cutting device, around for as many years as I can remember, and he didn't know what we were talking about. After a lengthy conversation to try and help him, the manufacturer actually sent him the knife they were talking about so he could work with the carpet. He was also told not to use his electric knife, which he mentioned was jumping the rows because of the way the carpet was constructed! No wonder he was being challenged. After all of this fiasco trying to help this guy get the carpet installed without any problems, the manufacturer gets a charge back for $9,000.00 in extra labor because of the challenges the installer had with installing their product. This installer worked for a large commercial dealer who either wasn't paying attention to what this guy was doing, wasn't aware that he was trying to fleece them and the manufacturer for labor because of his lack of skill, knowledge and talent and basically didn't know what he was doing. This installer had no clue as to the type of carpet he was working with and how to cut it and he wants to blame the manufacturer for a situation he created.

In the next case I got a call from a dealer who had problems with small wrinkles and buckles in a carpet they had installed some office space. I got as much information as I could about what happened and when. I explained how he might fix the carpet by injecting a high quality, high solids adhesive into these loose areas with a large hypodermic needle used specifically for this purpose. He had not heard of using this technique but agreed to obtain the device and send his installer, another seasoned pro with over 20 years of experience, to try fix the concerns using this

technique to see if it would work. A couple of weeks later I got a call from the installer, who was calling from the jobsite, asking for some additional help and information about the buckles and wrinkles and how to fix them. He said he had tried the needle and adhesive on a couple of the wrinkles and they seemed to be stuck down flat at this point. I questioned him about the carpet he was working on; who is the manufacturer, what is the style, what type of backing does the carpet have, what adhesive are you using, what yarn system is it, etc. Not one of these questions did he have the answer to. Again, I was amazed the installer, who told me he had years of experience, didn't know the product he was working with, not even the yarn system or whether the carpet was woven or tufted. Needless to say, this is not only shocking but down right scary. I shudder to think of the number of installers who don't have a clue about the carpets' they're working with. We consulted with the manufacturer of the carpet and had faxed to us the installation instructions and information on the backing system so we could determine how the product was supposed to be installed and how the backing might be contributing to the buckles and wrinkles inherently. This would tell us why he may have had problems in the first place, whether the carpet was contributing to the problems and as a result, what the installer would have to be aware of to make the installation work. This would also tell us how the wrinkles could be repaired. This information was also available to the dealer with a simple phone call and the manufacturer would have been happy to forward to him the installation instructions he needed to work with this product.

There are so many technological advances in backing materials, yarn systems, constructions and facials that it's hard keeping up with the changes even when you're involved in new technology daily. In the last three years virtually everyone who makes carpet, particularly the smaller manufacturers, have invested in state of the art tufting equipment. Backings are changing at an alarmingly fast rate, so much so that unless the installer is educated on what he's working with, he won't even know what he's looking at when he gets some of these new products in his hands. These backings offer the challenges of using different types of adhesives and different techniques and possibly different tools to get the carpet installed properly and correctly. There are moisture barrier backings to contend with and new synthetic type backings made with recycled content that may require special knifes to cut, adhesives to adhere and knowledge to understand the inherent characteristics of the product. 20 years of installing carpet is nothing to brag about if you don't know what you're doing and if you don't or haven't kept up with this new technology. It's only 20 years of experience installing carpet not 20 years of understanding and knowing what you're working with, what you have to do to make it stay on the floor, cut it, seam it and the science behind why it is what it is. That takes an active effort and endeavor to commit to learning about the product. Most commercial dealers don't do that, never mind the installer. And the manufacturer doesn't always have all the bugs worked out either or doesn't always tell you there may be bugs in the product, if they do know. Add to that the fact that if they push the envelope too far on cost savings in the carpet they may compromise it's integrity and deny forever that they have. That's something that we pride ourselves on never letting escape detection to serve our clients best interests - that's another story for another time though.

The point here is that many of the installation failures are due to not knowing about the product you're working with. Not only does this compromise the job but it also puts you in a bad position of not being able to defend yourself if you are in dispute with a manufacturer. You have to fully understand the product being worked with in order to explain intelligently the

problem being experienced. It may be that someone will have to get a piece of the carpet and duplicate what you're doing in the field, which can be done, to determine how to help you. If the installer can't explain what he's having trouble with, doesn't know the product or has no idea what he could be doing wrong, he can't get the help he needs. This leads to hostile reactions and doesn't get a lot resolved.

If the cases we've had recently are any indication of a problem starting to manifest itself in the field, and, unfortunately, I think it is, then we're in for some turbulent travel ahead. Between all the issues inundating the industry over substrate conditions relative to moisture levels and alkalinity, add to that the lack of product knowledge and new requirements in installation and we have a formula for disaster. It's like tornado season all over the country; storms hovering overhead and no one knowing exactly where they'll touch down. When they do, without notice, there's total destruction of the job, exacerbated by the fact that no one understands exactly what happened or why or worse yet, they don't want to hear or believe they did something wrong because they didn't know what they were doing, what they were working with and how they could, as a result of this not knowing, cause a floor covering failure.

Finger pointing is always a sport after a problem like this but unfortunately it may be done with no earthly clues as to why there's a problem. When it can be proven, and it always can, why there was a failure and hence why there is a problem, the responsible parties may not want to accept that their at fault. For these reasons it is absolutely imperative the installers of commercial carpet are continually trained and updated on new products and the technologies which they may have. It's not always wise to trust past years of experience. In fact, as you seen in these couple of cases, experience was of no help whatsoever. The information is always available from somewhere. We're usually a good place to find it if you can't.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #13 AUG. 2004

Clear Plastic Carpet Protective

Here's a situation that has generated several complaints lately and is, it seems all of a sudden, a real concern for commercial carpet dealers, manufacturers and general contractors. What I'm talking about is the use of self-adhering, clear plastic carpet protective material, placed on top of carpet after installation to prevent soiling and other influences from affecting the carpet surface. The concept of this product is certainly a good one – a light weight, self-adhering, clear plastic protective film that covers the carpet surface to protect it from soil and other contamination prior to the end user occupying the finished space. We'll look at four specific cases where this material caused a problem.

In one of the cases the general contractor had put down the plastic covering in a large office environment on several floors. The plastic was put in place, on top of the carpet shortly after the installation. When the plastic was removed they noticed the carpet had discolored dramatically. All over the carpet were streaks of discoloration and mottling, like irregularly shaped lines. The general contractor was in a pickle because they were the ones who were responsible for putting the plastic on the carpet. The dilemma was that they had created the problem through their action and now needed to determine what exactly happened and what, if anything, they could do to correct the condition. Unfortunately there was nothing they could do to reverse the damage to the carpet. What happened?

What happened was the plastic was placed on the carpet right after installation, before the adhesive used to glue the carpet to the substrate was fully dried and cured. The plastic placed onto the carpet surface to protect it actually damaged it. Trapped moisture from the drying adhesive could not escape through the carpet. The trapped moisture destabilized the dye, weakening it and caused it to migrate and distort the coloration in the carpet. This disturbance and actual degradation of the dye caused the discoloration of the carpet. Once the dyes are changed or migrate in the carpet it is impossible to reverse this process. The moisture trapped during the curing of the adhesive created an environment in the carpet that forever changed its appearance.

Had the general contractor waited for the adhesive to cure, which could have taken as much as 48 hours or more depending on conditions, he would not have encountered the irreversible problem he created. In a conscientious effort to protect the carpet and keep the construction work going he destroyed the carpet and was forced to replace it - never an inexpensive undertaking.

The manufacturers instructions on the protective plastic material state that it should not be placed on the surface of the carpet until the adhesive used to glue the carpet in place has cured and dried. They make this statement because they have experienced this problem before and they have been blamed for the carpet being damaged. To prevent this from happening again, and taking the blame, they wisely inform the user of the product not to employ it until the adhesive dries.

There are other forms of moisture that can affect the carpet if the plastic covering is left on too long. The moisture in the air, in the form of high humidity, can be enough to cause a problem with the color of the carpet, especially if the carpet is nylon or wool, both of which will absorb moisture. Nylon will absorb about 4 to 5 percent of its weight in moisture and wool as much as 27 percent. If the moisture is not allowed to evaporate from the carpet because it is trapped, it can and will cause a reaction in the color of the carpet. And here's a fact that should really scare you, even if the carpet is a solution dyed nylon, the color can be affected by putting plastic covering over it while there is moisture present in or under the carpet.

Where would the moisture come from under the carpet if not from the adhesive used to install it? From the substrate, of course, in the form of moisture vapor emission, which when trapped while trying to pass through the carpet to escape, would wreck havoc on the carpet. Now two things would have to be working in conjunction in this type of a situation for this to happen. The substrate would have to be volatizing a high volume of moisture vapor after the carpet was installed and the plastic would have to be on the carpet for an extended period of time, like a week or more for example. Even so, just a few days might be enough to cause a change in the carpet color if there was enough moisture trapped in the carpet.

Another big problem that can occur from putting self stick protective plastic covering on the carpet is adhesive residue being transferred onto the face of the carpet. This light, sticky residue will attract soil to the carpet like a magnet causing a light carpet to turn black and a dark carpet to get darker. Here's two cases where this happened, one having made the Bernardsville, New York newspaper on June 24, 2004.

A new $4.5 million municipal building was constructed in Bedminster Township, New York and scheduled to open on June 29,2004. The problem preventing the opening was caused by the plastic covering designed to protect the carpet from soiling during construction. When the plastic was removed it seemed the carpet had turned color. At first officials thought a chemical in the adhesive used to glue the carpet down had caused the discoloration. However, upon further investigation it appeared that the adhesive from the plastic had penetrated into the carpet causing dirt and dust to stick fast. "It turned the carpets orange – just like the color of the soil in Bedminster," the mayor said. The carpet manufacturer offered to provide the township with a chemical cleaning solvent to get rid of both the adhesive and the dirt. If the carpet won't come clean it will have to be replaced, which would involve waiting about 8 weeks for new carpet to be produced. The general contractor put the plastic on the carpet and has accepted full responsibility for the damage and pledged to replace it if the cleaning did not work. All of this has

delayed the scheduled move-in to the new facilities. None of this is the carpet manufacturers or carpet contractors responsibility.

In a related situation, a general contractor places the plastic covering on the light colored carpeting in the corridors and offices of two renovated buildings of a single client. In one building the carpet looks fine when the plastic is removed, and it stays that way. In the other building the carpets on every floor got black after the plastic was removed and in addition to that, everything that had been placed on the plastic was showing up on the carpet surface. This included the base of plastic buckets, the cleats from the drywall finishers' stilts, panels from modular furniture, etc. All of the outlines of these things could be seen clearly on the surface of the carpet. Why? Because the adhesive from the backing of the plastic covering had been pushed into the carpet by the concentrated weight placed upon it. This caused a heavy adhesive residue in these areas, which allowed soil, adhering to these areas, to reveal where pressure from the object placed on the plastic came in contact with the carpet. Also visible was the outline of the plastic edges. Again we asked the question why? If one building with the same carpet was fine why was the other one such a mess?

We conducted a series of tests to determine the answer to the questions. We obtained a roll of the plastic left over from the job as well as a large scrap of new carpet and a section of the affected installed carpet, cut from one of the corridors. The plastic was applied to a section of the new carpet and then inserted in a Hexapod test, which subjects the carpet to the pressure and motion of a twelve pound hexapod shaped object rolling around in a drum. Another piece of the carpet was tested the same way, the plastic removed and then tested again with an accelerated soiling test. The plastic left a residue on the surface of the carpet when subjected to the hexapod test, indicating some adhesive transferred off the plastic and onto the carpet surface. The section of carpet tested with the plastic on, and then removed, and then tested with the accelerated soiling test, resulted in the carpet turning black with dirt. The soiled section was then cleaned and tested a second time to determine if there was still a residue, which would attract soil and there was. This sample was not as dirty when removed from the test because we had succeeded in cleaning a lot of the residue off the carpet the first time. But there was still a light adhesive residue remaining, which continued to attract soil. We used water based soil cutting agents, a water based cleaner with hot water extraction and then alcohol, none of which completely removed all of the residue. A pure solvent could not be used in volume to clean the carpet, even though it would work, because it would also compromise the integrity of the carpet backing. The carpet still got dirty again after all of this, not nearly as bad but noticeably due to the light color it was. Our client in this case replicated our cleaning procedures on sight, with a little more aggressive action, without complete and acceptable success - they had to replace the affected carpet. But did we answer why one building was affected and not the other? Here's our answer to that question. The adhesive on the plastic used in the affected building may have been heavier and therefore left a residue. The temperature and humidity in the space could have been higher causing the adhesive to weaken and soften and transfer off. There could have been more moisture on the surface of the affected carpet due to humidity in the air or moisture vapor emission from the concrete beneath the carpet causing the

pressure sensitive adhesive to weaken. Remember these were two different buildings, next to each other on the same block but separate structures. The manufacturer of the carpet used in these two buildings, wisely, and I'm sure from a bad experience, had a notice in bold letters on their spec sheet that plastic covering was not to be used on their carpet products. This absolves them from any liability, though they did offer help in this case with the cleaning.

The last case involves a woven wool/nylon blend carpet, 80% wool and 20% nylon. The plastic covering had been placed on the carpet the same as in the other cases. After the plastic had been removed and the carpet subjected to traffic it was noticed that the face fibers were sticking together. The residue from the plastic covering could be felt on the surface of the carpet. Because the natural wool will hold the adhesive residue more aggressively, and did, the fibers in the carpet were sticking together. Again, the general contractor was responsible for this problem because they put the plastic down but they looked to the carpet contractor and manufacturer for answers.

The reason the plastic covering is used is because it is strong, self sticking and easy. The reasons it can create problems, you just read. It can leave a residue that will attract soil and be near impossible to remove and even if it can, the cost to do so is considerable because it is a labor-intensive task. It can cause the color in the carpet to migrate if moisture is trapped, this the manufacturer of the product warns against.

As a flooring contractor, general contractor, manufacturer or other party responsible for the well being of the carpet, you should state that the carpet should be protected and how. The safest way to protect the carpet from the conditions you just read is with brown kraft paper, although it can and does rip and travel or better yet use Masonite boards. Any adhesive material on the top of the carpet is going to leave at least some residue. You can't control the conditions in the air, under the carpet or in the work-space that could create the problems we've discussed in this issue.

Because the problems with self-adhering plastic coverings have been such a concern lately it is my opinion that they should only be used if you can insure there won't be a problem from the product or from some other influence, especially where construction work is still on-going. There should be a mention on spec sheets, as some manufacturers have already done, that this product could cause a problem as a result of its use, and that you will not be responsible for any damages. This should also go for the flooring contractor and any other contractor responsible in whole or part for protecting the carpet. The use of self-stick plastic covering has adversely affected carpet, causing costly cleaning and/or replacements and gives carpet a black eye. The carpet has nothing to do with the problem other than the fact that it is the material being affected. Whoever causes damage to the carpet should be responsible for repairing, cleaning or replacing it. I'm not saying not to use this material but you have to know what can happen in some cases if you do.

Respectfully,
Lew G. Migliore

THE COMMERCIAL FLOORING REPORT #14 1-4-2005

EDUCATE US

One of the largest requests by the design and architectural community is “educate us.” We need information and we’re not getting what we need. How can we be expected to deliver to our clients the best services and the best products if we don’t know all we need to know. Into this group we can also place facilities managers, corporate accounts and any other large end user of flooring materials. The education of these important people lies mainly on the shoulders of the manufacturers rep, simply because that’s where they turn first for answers because that’s where the think the answers they need are. Unfortunately, the manufacturers’ rep doesn’t have the answers they need to make the wisest objective and unbiased decisions as to what product works best where and why, what accessories to use, what installation techniques are appropriate for a specific project or what is the best adhesive to use. The rep only knows what he is taught or what he knows, about his or her particular product. The rep does not know the answers to all of the questions designers and architects ask and need. This is not meant to say that the rep is not knowledgeable but the rep can’t possibly have all the answers to these questions because they aren’t exposed to the knowledge or information that would make them the expert in this field. The reps job is to sell and the rep will do whatever it takes to make that happen.

Let’s take a look, specifically, at some of the areas the designer and architect need information and we can also add anyone else into this mix, including the manufacturer. We’ll start with some of the most controversial topics first and they are substrate conditions and moisture. It’s amazing how little the industry knows about substrate conditions and more amazing that there is not a boat load of information flowing to the architectural and design community on this subject. We’ve had clients we’ve helped as recently as today who don’t understand the ramifications of using certain flooring materials with substrates with moisture in them. I’ll share this one with you. A flooring contractor has an installation of vinyl backed carpet tile emitting an odor, which has been down for less than a year. He questions whether or not he can re-use the tile if he remediates the floor with bead blasting, top coating and sealing. Specifically, is there a treatment or process he can subject the tile to that will make it ok to re-use them on the same job. The answer is no. Why? Once the PVC backing in a carpet tile or any PVC backed product is compromised, releasing alcohols, it is impossible to stop it. The affected tiles have to be taken up and recycled and new tiles have to be installed. The dealer really didn’t know the answer to this and further he wasn’t sure if the substrate had even been tested for moisture. If this seasoned dealer doesn’t have the answer to these issues how could an architect or designer be expected to know this stuff? In another recent case a dealer has several thousand yards of carpet tile installed on a slab on grade with an extremely high moisture content. So much moisture, in fact, that it can be seen when the carpet tiles are lifted off the substrate. There are even some curled carpet tiles in the worst areas, but there is absolutely no odor nor has there been for over a year this dispute has been going on. There is no question the concrete substrate has to undergo treatment to mitigate the moisture issue. However, since the carpet tiles are not affected

they can be taken up, the backings cleaned off and, except for the tiles that curled, the tiles can be re-installed. This saves the expense of having to replace all of the carpet. Only the affected curled tiles will have to be replaced. This substrate was tested prior to installation and it indicated moisture was not an issue. At the meeting we had on this case the building tenant, owner, designer, general contractor and flooring contractor were all present and none of them had an answer to the problem, nor did they fully understand what was wrong and why. If all of these cases repeatedly prove that the answers necessary to problems and, more importantly, how to prevent them, are not part of the general knowledge of the most important parties, how can the education process not be important?

In every case this is what has to be said to avoid problems. Here's what you have to do, here's what you should use and why and here's what will happen if you don't and here's how expensive and damaging it will be if you don't heed this advice. The decision not to do something and the liability for not doing so would lie with whoever is responsible for making a decision. Let's look at another case that we recently were involved in relative to this issue.

A flooring contractor wisely refuses to start a job because he has issues with the moisture vapor emission readings in the concrete. Moisture tests have been taken by two parties and the results of both are different. The moisture is not excessively high but there is legitimate concern for a problem developing in the future. The flooring contractor is being told to start the job but he doesn't want to be held responsible for the failure of any of the flooring materials, should it occur. A meeting was held with all the parties on the project which included the general contractor, the building owner and the flooring contractor. All of the previous test results and documentation was reviewed, the substrate inspected, initial tests of the concrete taken and further tests of the concrete ordered. The conditions of the buildings environment were analyzed and flooring material already down was inspected, with some of it removed, to determine whether or not moisture was affecting it. The products being used were researched and then, after the final results of all of this work, a determination was made as to what to do. Here's what was found out about the substrate and here's what decisions were made jointly, so that the flooring contractor would be responsible for any future failure, should it occur.

The carpet being used could be installed with the moisture vapor emission rates slightly above the subscribed industry standard of 3 pounds. This information was gotten directly from the manufacturer. Several different products were going to be used and it was important to find out what the parameters were for the installation of all of the materials over the moisture levels found. Fortunately, after all of this work and with the building being climatized, the conditions came into range that a successful installation could be accomplished. However, it was still noted that this was a joint decision, made among all the parties, based on prior experience, valid test results and products that were of high quality. For insurance we suggested a sealer be used first on the concrete, which was compatible with the adhesive being used to eliminate any fears. This situation is not only exceptional in resolving concerns but proves that, working together and knowing where to go for answers, problems can be avoided with a team effort.

Knowing how certain styles of carpet perform is also an area where education is important. Understanding, for example, that a cut pile, loop pile or cut and loop product will all perform differently and look different in the course of use, is not as clearly defined as you'd think. One of the most challenging products, relative to appearance retention is a tip sheared product. If the tip shearing is done on a very dense piece of goods and the shearing is not extensive, the product will usually look good as it is trafficked. If the shearing is extensive, the appearance of the product can be affected enough to generate a complaint for the carpet looking bad. A few years ago this is exactly what happened to a corporate client we were hired by. They had a tip sheared product installed in several offices across the country. The carpet started to look matted and crushed and they complained about it. Researching all the documentation we found a letter from the manufacturer telling the end user that they did not recommend this particular product for this particular application because it would not deliver the type of performance or appearance retention they desired. Despite the warning, a decision was made to use this style product because of the "look" it had. That "look" did the product in and the end user had absolutely no basis to complain. They and their designer chose the product, over the objections of the manufacturer and the product did exactly what they were warned against.

The choice of color may very well be the biggest area of concern that there is and it's amazing how little is known about the consequences of choosing the wrong color. We'll cite two examples here. The first is a major hotel in one of America's biggest cities. The hotel complained to the manufacturer that they had a problem keeping the carpet clean. The belief was that there was a problem with the carpet that was causing the soiling situation and the challenge of cleaning it. This new carpet replaced a product similar to it in construction but the colors of the old carpet were much darker. When the products were analyzed and tested they were found to be structurally the same, the only difference was the way they cleaned because of the color. The complaint, we found out later, was due to the designer, who chose the carpet, not understanding the importance of using colors that will mask, hide or otherwise not magnify dirt. In this case the light colors used magnified spots, spills and traffic soiling creating an ugly condition that could not be reversed. The cleaners will have to "chase" the carpet all the time to keep it looking good. The second example actually took place in a seminar I was giving at Neocon. The program dealt with the 10 areas of carpet to optimize performance and maximize profits. Color naturally came up because this is the number one motivator of the purchase of any carpet product. A DuPont color chart was utilized to show the best and worst colors to use to hide soil. There were 25 designers and specifiers in the seminar and not one of them had ever seen this chart or anything like it. The usefulness of this chart as a tool for putting the right color in the right place is invalueable. For example, one of the statements on the chart is that there is no optimum range for yellow. In other words, yellow is the worst soiling color and therefore the most difficult color to maintain. Another difficult color is light blue. The two most predominant colors in the hotel that was complaining of a soiling problem were yellow and light blue. Had the designer known this the problem for the end user would not have existed. As a result of not knowing this the costs to maintain the carpet have escalated and the life expectancy

shortned. This is not information that a rep, manufacturer, architect, designer or specifier is going to have at their fingertips or, as experience indicates, know about. Where else but through some vehicle of education would this information be found and articulated well enough to be understood to prevent this type of problem.

How about the information of mis-information? There's so much of this floating around that people will think it's fact because they heard of from what they believe to be a knowledgeable or reliable source. One of the most common fallacies is the notion that there is a big difference in the performance of type 6 versus type 6,6 nylon. Simply put, if two carpets are constructed exactly the same, one with type 6 nylon and the other with type 6,6 nylon there will be absolutely no difference in performance. Yet it is often said that the difference will make or break a carpets performance. Another belief is that polypropylene is the worst performing fiber in a commercial environment. We've had large retail clients who have had polypropylene carpet down for 10 years that looked great. They replaced these carpets with a nylon carpet costing considerably more, only to have the product fail to live up to the polypropylenes performance. The new carpet just did not have the performance characteristics they had taken for granted for so many years. Basically the nylon carpet was harder to clean and stained, even with a topical stain resist agent. No one would ever recommend polypropylene in this application but it was the best product for the job. One of the most obvious issues when it comes to information is overlooking what's currently installed or how the new flooring material is going to be used, abused and maintained. This has to be envisioned to be appreciated and understood. Envisioning what will or may occur will prevent failures, complaints and claims.

Where can you be sure you'll get the information you'll need to optimize a products performance, prevent problems and eliminate complaints. An independent professional flooring contractor is one good source or you can come to us to get completely unbiased, objective and factual information. Don't wonder if the information you're getting is correct, you have to be sure.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT # 15 5-27-2005

LIFE EXPECTANCY

What is life expectancy of carpet? How is it defined, what does it mean, is there a formula, and is there a guide that tells you exactly what defines this term exactly? Is the question ever answered "How long should a carpet last? Is life expectancy appearance retention, wear or what? What part does price play? Why was the decision to use a specific product made and what was it based on? And finally, what are or were the expectations of the end user? Is the insurance Gray Guide a viable gauge to measure the life of a carpet? Lots of questions to be considered on this subject, for sure. The answers are hard to come by, for what might be considered a simple subject.

First we have to determine the factors that govern the life of a carpet and they are basic. Color, pattern, density, fiber, construction, backing system, installation, maintenance, use and abuse. Next we have to define appearance retention, which relates to such factors as matting and crushing, fading and soiling – basically "Ugly Out." Wear, defined by warranties for it, relates directly to abrasion and loss of pile fiber. Understanding how to make carpet perform and sustain an expected life is an important issue. In fact, carpet is first supposed to look aesthetically pleasing – enhance the design and style of the environment by beautifying it – and deliver comfort, style and performance of the expected life. Again, the expected life factor is always in play.

The carpet construction selected for contract use in offices or other commercial interiors must be properly specified for the expected traffic use. A color and design should be selected that will minimize the visual rate of change and preclude style aging. Contract carpet must be chosen with an awareness of off street soiling and walk off considerations, as well as overall maintenance, installation and removal costs. The aesthetic considerations of a loop pile, cut pile, and/or cut-uncut carpet style affect the use life and maintenance program. In addition, the shorter replacement cycle that drives today's office interior design market has expanded the selection of textile floorcoverings to include many different types of carpets. A point of consideration however is that some carpet today has been down far longer than it would have been because of the tragic events of 9-11. Replacement cycles have been grossly distorted.

Carpet, when properly maintained, usually retains its "new" appearance for most of the five to ten year style cycle preferred by architects, designers, specifiers and end users.

To put life expectancy into perspective consider a specific product in a specific environment and then determine how long it should last relative to construction and quality of the product. The broadloom carpet we'll use for this is a 28 ounce, 1/10 gauge, ll.0 stitch rate, (110 tufts per square inch), .187 pile height, 6,503 density, solution dyed, level loop nylon with a woven polypropylene primary and secondary backing, glued directly to a concrete substrate in an office environment consisting of work stations occupied by 400 employees. This is no special product and in fact is not a product that would be considered an extra heavy commercial category performer, which it should be

for the area it was purchased for use in. Therefore one could not expect this product to last, and perform satisfactorily for longer than three to five years and if it lasted longer than five years they should count their blessings for getting that out of the product. Even though one may interpret the specs to be acceptable, the reps handling the product know that this carpet is not going to last longer than 3 to 5 years in this office environment. It may be on the floor longer than that but it is not designed, engineered or manufactured to deliver a long life, in fact, its useful life is limited. They wouldn't sell it for use here unless there were cost considerations, or unless it was tenant space that was going to be replaced at the end of a lease that was five years or less. The product that should be used here is a high performance carpet tile.

Is life expectancy then appearance retention, wear or what? Back in the later 1980's, DuPont estimated that pile wear in a typical nylon carpet (typical for the estimate at the time was 24 ounces per square yard pile fiber) at less than 1% per five million traffics. Put into perspective, almost 7,000 people would have to enter or leave a facility through the same doorway each day to generate five million traffics in one year. DuPont concluded that the life of a properly constructed nylon carpet is primarily a function of its surface appearance, not pile wear which is rarely a factor in determining effective life. This goes back to our old saying that nylon does not wear out, but it can and will ugly out.

Density is the key to performance and life expectancy. The denser the construction of a carpet the better performance it will deliver and the longer life it should serve. Density can be associated with the face of the carpet but to truly enhance performance and life, the backing must play a major role. Carpet tile for example is probably one of the best examples of high performance, long lasting product. One only need look at most airports to see that carpet tile delivers the best of both performance and life expectancy. The Atlanta Airport, for example, the busiest airport in the world, has 3 foot square, nylon faced, polyurethane cushion backed carpet tiles. The life expectancy of this product when purchased was anticipated to be 12 years. That's a lot to ask of a carpet in one of the highest traffic load situations known to man but the product is indeed performing - this despite a fairly light face weight and its light blue color. Not much else would have worked as well or lasted as long. The question, "what is life expectancy?" is clearly answered in this application. The carpet was chosen to last a certain length of time and did, even though it does suffer from diminishing appearance. Certainly, this has not happened without good maintenance and replacement of many of the tiles from time to time for various reasons, such as damage, soiling and staining. A specific period of time was chosen for the carpet to last.

In a hospitality situation, for example, the carpet may be on a pre-determined life cycle of 3 to 5 years to keep the property looking fresh and to stay in step with the ever present competition in this market segment.

If one consciously has a time frame in mind for the life of a carpet then a product that will deliver for that period of time should be chosen. Price certainly will have a part to play here. A less expensive product will normally not deliver high performance and long

life in a heavy load environment. A less expensive product in a high performance environment will not deliver good performance or yield a long life. It may stay on the floor for a long period of time but it may not look good nor have sufficient life left to keep going. This equates to a short life for the carpet but a high expectancy. The carpet will lose the race before it's over. A more expensive product, with higher density construction and backing system, will deliver a longer life when subjected to a heavy traffic load. The characteristics that govern the performance and life of each category of product are influenced by the price. The more the carpet costs the more features and benefits it will inherently possess to last longer and look good doing it. The formula then for life expectancy would be, how much is the end user willing to pay, how long does the end user expect the carpet to last and what has to be built into it to make that happen – we've already mentioned those factors. If nothing is considered except a particular carpet chosen for its look, color and price then it will only last as long as it can under the circumstances of use. If an argument ensues as to a property owner insisting the carpet used in tenant space still has value and the owner sues for that value then one only need look at the product characteristics and specifications. Probably most important and simplest would be to ask the manufacturers rep if this product would or should be sold into an environment of the kind it was installed in. Since the commercial carpet rep generally knows his product fairly well, he or she will know if a particular product is appropriate for use in the environment in which it was installed. They'd also know if it should be expected to last for a few years or many years. Keep in mind that commercial carpet, depending on how and where it is used, has a limited life expectancy. Just like a truck will only last so long under particular use applications, so too will a carpet. The exception is you can change a lot of parts in a truck to make it last longer, you can't change any parts in a carpet.

There are several laboratory tests that will help determine the life of a carpet. Some of the tests would be relative to physical aspects of the product and some relative to appearance. The Phillips roll chair test, Taber abrasion test, Hexapod tests and the "Human Walking Test" would assist in evaluating the product for physical wear and appearance retention to help gauge life expectancy. Accelerated soiling, staining, cleaning and colorfastness tests would assist in determining the appearance retention of a carpet. There is also an actual appearance retention test, Appearance Change Reference Scales CRI -3 or 4, for commercial carpet that would be pertinent to the life of a carpet and how good it looks after a period of time.

The answer to the original question then is that life expectancy can be measured and determined, to an extent, by subjecting a carpet to specific scientific testing. It can also be determined by experience which would be governed by how well a particular product would be expected to last in a particular environment by the people who actually sell commercial carpet and understand it. Just because someone thinks a carpet should have lasted a particular period of time in a particular space doesn't mean that it will, or that it should have.

And finally, when you're looking at true guidelines for life expectancy of floor coverings, the insurance Gray Guide says it is judged and based on price, and estimates depreciation

according to the carpet's number of years on the floor. The maximum wear or life of any carpet or rug on the market, regardless of price, is set at a maximum of 10 years. The depreciation chart is weighted more heavily in the first years of life, after three years the carpet has lost 50% of its value. In the next seven years the carpet or rug loses the next 50% of its value. Guidelines such as this govern the insurance industry and replacement market value of carpets and rugs, just like they do the cars we drive. Whether we drive them or not, they depreciate according to insurance coverage unless they have antique value and carpet floor covering never achieves that status. There are scientifically based life cycle initiatives being explored by the Carpet and Rug Institute but there is nothing in place yet. Whether these initiatives will help determine how long a product will last based on whatever scientific factors are used, remains to be seen.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #16 7-11-2005

NEOCON 2005

Neocon attendance set a record in 2005 with 46,352 attendees mobbing the halls of the Chicago Merchandise Mart. The reconfiguration of the seventh and eighth floors made walking and seeing exhibits much easier than in the past. What was most striking was seeing how entrenched patterns are in commercial carpet. It's not just how much patterned carpet envelopes different lines offered but how elaborate designs have become. Metalized fibers are being used extensively to give glow and shimmer to a host of manufacturers new introductions. Brilliantly bright colors such as bright yellow and white are being used as are black and white. The commercial carpet market is mirroring the retail consumer market with the same color palette. What's in with home furnishings is in with commercial carpet at the same time. You can make your own comparison by shopping the bedding departments of major retail chains and comparing what's being offered there to the products being offered by the commercial carpet manufacturers.

As always, in my opinion, the standard bearer for patterned carpet has to be Atlas Mills. Every year they seem to outdo themselves with new, different and unique pattern styling. Everyone else has to play catch up to be on the same page with Atlas. They make a difference not only with pattern but the dimensional and textural aspects of the product as well.

There's almost nothing that can't be done styling, color and texturally to carpet to make it unique. Whatever the mind of the stylists or the consumers desires are, a carpet can be created to meet those wishes. There's also a random flare in styling that exists so carpet tiles in particular can literally be placed on the floor in any manner to create a different look. Shaw, C & A and most others offer these products to the market. And speaking of carpet tiles, everyone seems to have one now, since this is the hottest segment of the commercial carpet market. For corporate use, especially in wide open spaces, carpet tiles are the best product to use, in my opinion. Carpet tiles are the industry's premium products. They look better than ever, are easy to install, possess extraordinary performance characteristics, eliminate a multitude of installation concerns, issues and compromises and should continue as the leading product of the industry.

Hard surface flooring materials are also getting fancier and expanding their presence in the commercial marketplace. The hands down market segment leader here, in my opinion, is Centiva. Centiva is pure hard surface art because that's what the company truly feels their product is and they work diligently to make it so.

From fiber to backing materials, surface treatments, wild styling and colorations, Neocon is the one location where the commercial carpet industry showcases itself. For the last several years this show has been able to wow the commercial designer, specifier, floor covering contractor, architect and end user. With the commercial floor covering market back on track again I think we're going to see more dynamic creations coming from

every manufacturer. These are, fortunately, exciting times in the commercial flooring market.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #17 8-14-2005

SELECTION PROCESS

A number of people have been fascinated lately by the fact that a service exists to assist a commercial client in choosing and installing the correct carpet. Normally the selection process involves looking at some samples, choosing the ones most aesthetically pleasing, reviewing the manufacturers specifications against what the architect may have written and deciding which of the products to use. Nothing is done about whether or not the selections made will actually work where they're going to be used. And, frankly, very few, if anyone thinks of this. Most often it is assumed that if the product is offered for use and it meets the written specification for what is desired that it will automatically perform. This is not the case as is proven by the number of disappointments experienced by products failing to perform up to the end users expectations.

What then can be done to insure that the right product gets into the right place and does what is expected of it, for the time expected of it, without experiencing any rapid loss of appearance or compromise in the structural integrity of the product or the installation. Let me give you an example of how this service can work for you.

We have a corporate client who is undertaking a long term project that will involve three separate carpet products in three different areas. One of the carpets is for the corridors, one for the offices and one for executive spaces and conference rooms. The design firm submitted the carpet samples being considered for use. The first step is to evaluate the product samples for performance and appearance retention. This is done by subjecting the samples to a Hexapod test which will subject them to 12,000 cycles in a drum, which is considered the equivalent of 60,000 foot trafficks. The carpet sample is removed every two thousand cycles and vacuumed. At the end of the test the sample is evaluated on a rating scale for changes in appearance, texture and color. To pass it should be rated at least a 3 in both color and appearance. We like to see the carpet rating higher for our clients.

These tests will give us the first indication of whether or not the product selected is going to perform and stay looking as expected. If not we can suggest what changes are necessary in the product to improve its performance or as them to select something else, close to what they want, for testing and evaluation. This is an easy and inexpensive way to insure the right product gets used. Not only does this totally objective, unbiased and independent service benefit the end user but it also protects the manufacturer and the designer by insuring the carpet does what is expected of it. Very often the changes necessary are subtle such as "tightening up the construction," taking out some of the cut pile yarn or making slight changes in the color. Sometimes the initial tests will indicate a finishing problem, such as a latexing issue which can be corrected. Samples of the submitted products are returned to the client and choices can be made as to which will work best. After the products have been evaluated up to this point and selected, the manufacturing process begins. Before the products are shipped samples of the finished product are sent in to be retested as they were in the original tests and also for structural

integrity. If the product fails the structural tests, which means it has compromises that will create a structural failure of the product on the floor after installation, it doesn't get shipped or installed. A new product must be produced that will not fail and the manufacturer will know what they have to do to correct the condition. This portion of the service insures the product is structurally sound. When the manufacturer knows it will be evaluated for construction they can make "extra sure" it will be built well. This, again, will prevent any claim, complaints or chances of having to replace the product once it is installed. This service is prevents problems and eliminates having to react to them later.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #18 11-16-2005

IMPORTS: CHINA VERSUS THE U.S.A.

Media people who cover industry events and statistics sometimes amaze me at how they interpret what's going on. The big concern, one that Americans in general hear about today is that China, with their massive growth and appetite for all things consumable, is going to flood the market with all types of products overwhelming the American market. In particular, relative to our perspective, is the concern for an influx of carpet to the US market. I'm going to tell you why I don't think that's going to happen and in fact, how much opportunity I think there is going in the other direction; that is for US producers to carpet the market in China and developing markets in that part of the world.

The capacity for carpet manufacturing in China is approximately 75 million square yards per year. In the US the capacity is in the billions. China can't, at this point, supply their own demands for carpet much less those of any other part of the world. Their domestic market is growing faster than they can supply it. Capitalism, in whatever way you want to view it, despite being a Communist country, is alive, well and growing in China.

Carpet manufacturing technology belongs to America and primarily in two locations, one of them very centralized. Southern California, where carpet is of very high quality and extremely fashionable and Dalton, Georgia, "The Carpet Capital of the World," because it is just that. All of the brains, technology and economies of scale for producing carpet exist in Dalton, Georgia. The uniqueness of this distinction cannot be discounted. Additionally, almost all of the equipment for making tufted carpet is centered in the Dalton area. The infrastructure for accommodating the manufacture of carpet is in Dalton. Dalton is carpet and the mindset to produce it is innate in this area – it is the epicenter for textile floor covering materials in the world. From Dalton and its associated distribution centers and labyrinth distribution network, a carpet can be at the door of the dealer, if it's in stock, in as little as a day's time.

The challenges faced by China in the US market are paramount; quality control, distribution, rapid delivery, complaint handling, quality of the product, style and fashion.

Quality control is hard to control since China is essentially a start up market. Checks and balances are not perfected and the product is not governed by any set of standards as it is in the US market by any formal organization like The Carpet and Rug Institute, GSA or FHA .

Distribution is a huge challenge. The saying, "on a slow boat from China" is epitomized by product coming from China. No one is going to get anything fast from China. A deadline for installation would only be a suggestion or a wish with carpet coming from China. In the fast paced world of carpet no one is going to wait very long to get a product they want by a certain time. To make selling product economical distribution warehouses would have to be set up and product styles stocked for rapid deployment to dealers or end users. No US carpet manufacturer is going to stock product from China to sell and

distribute. Distributors, who have been suggested as dispensers of Chinese carpet, cannot adequately service the entire marketing area. There would be no rapid delivery of a specific product anywhere in this scenario. The logistics of distribution are daunting to say the least for Chinese carpet and for commercial carpet, as this point, near impossible.

Complaint handling and product quality are two categories that really create challenges for carpets from China. Filing a claim with a Chinese carpet mill, in my opinion and by general industry consensus, would be very difficult to say the least. Who do you call, how, when and how fast could you get something done about your concern? What type of technical help could you get? Where and how would you send the product back? Could you involve someone from the mill claims department and how would you do that? What if there is a quality problem with the product? How fast could you expect to get help – certainly not the next day. On top of all this, the products China is set up to manufacture at this point are for the most part, lower quality, higher volume runs. Claims would be a logistical nightmare and they are the one category that really casts a veil over imported carpet from China.

Carpet from China offers no distinct advantages, special features or unique characteristics to give in any special appeal or create and demand. Since labor is such a small percentage of US carpet manufacturing and pricing, somewhere between 5 and 6%, there is no labor savings advantage for purchasing Chinese made carpet. Price is not a viable reason to buy here.

Another Interesting Point

A program we're working on for a client through one of our divisions is called bundling. This concept will shed some light on the issue and concern of obtaining carpet made in China. Bundling is a term used to describe the containerization of materials and products used in the construction of condominiums, apartments, hotels, etc. Cabinetry, furniture, wood flooring, fixtures and many of the other items used to construct these facilities is supplied in container form to builders and developers in the US from China. These materials are less expensive than buying in the US and the container is bundled with all the needed materials to outfit the project space – in essence, an outfitted, ready to install, package. The only thing they can't get and don't want in this package is carpet from China. There is not the diversity of product, quality or service that is required for this concept. The people putting this program together are requesting product packages of US manufactured carpet to bundle with this program. The point is that all the other materials for a build out are available and economically feasible to supply from and by Chinese industry, except the carpet. This is not going to change any time soon in my opinion. In fact there will be strains placed on the Chinese suppliers for all these products in the not to distant future, in my opinion, and I'll tell you why.

US Opportunity

The law of supply and demand dictates product and service movement in the marketplace. "You want it, we've got it, you pay." China is experiencing explosive

growth. Primarily that growth is in the middle to upper end segment of the market. As China develops the Chinese people, and there are 1.3 billion of them, will want and be able to afford better quality and name brand products. The Chinese, as does the rest of the world, regardless of what the media or politicians may say, look up to or at America as a source of name brand products, cultural association, style and fashion. The real estate in Chinese cities is in great demand. Construction of massive towers for living space and business locations is growing like a weed in all segments; corporate, hospitality, government, transportation, health care and education. With all this demand and the lack of higher quality carpeting to use in this space the best place to get it, and the only place to get the real quality products for commercial application in volume, is from the US. The opportunity to supply our products to the Chinese and the rest of the Far East is greater than what any fear should be for products from China and other developing and expanding nations' products infiltrating the US market. China is a monster of consumption in a still developing nation. It is impossible for Chinese industry to fulfill the needs, demands and desires for high quality products and services more consumers want. The key word here is desires. The Chinese consumer, an exponentially growing number of them more affluent, can now afford better quality products and brands – and most importantly, they want them.

American products in China won't be price conscious brands but quality brands and some of the branding may have to be developed for the Chinese market. With all the excess capacity the US carpet industry has there is no reason for us not to be able to service the new demands of the more affluent Chinese market. I see more opportunity for us there than for them here relative to this aspect of the market. As foreign industry's have built plants in the US, particularly automobile plants, we could build carpet manufacturing plants in China that could conceivably be a lot more successful than they are in our own country. Especially in the high end market which generates better returns and where you can afford to build more quality into the product which will generate fewer claims – this means higher returns on product sold. In addition to this, the opportunity to train and work with or establish installation services is, again in my opinion, astronomical.

Back to the bundling concept, a recent conversation with our client who is working on the bundling program generated a surprising remark. He said that a lot of containers are "dead – heading" back to China on ships. "Dead – heading" means the containers are empty on the return trip. Why shouldn't they be loaded with high quality carpet from the US? This is an area to be explored and capitalized on that can materialize into a burgeoning business if it is worked and nurtured.

My belief is that there is tons of opportunity for US carpet manufacturers to sell their products in China. With the right relationships and a feel for the market and a handle on marketing, which we are very weak at here at home, inroads and successes in the Chinese market can be realized.

There is no question in my mind that no one can service the growing commercial carpet market in China better than US carpet manufacturers and the opportunity to do so is there. Woven carpet manufacturers are already establishing beach heads of

manufacturing in the Far East why shouldn't tufted manufacturers do so as well? Who else has more knowledge, technology and ability than US manufacturers? It would be a shame not to aggressively pursue the obvious opportunities for growth that exist in the Chinese and Far East market.

Growth for US manufacturers in the US market is limited for carpet. This is one main reasons Shaw and Mohawk are pursuing the opportunities of hard surface flooring. That they are acquiring suppliers, manufacturing their own components and accessories such as carpet cushion is expansionist in the flooring industry. Again, with all the capacity available and technology, there is no reason not to be the big gorilla in the world floor covering market. If the same ambitious initiatives are taken to develop into world manufacturers as have been taken to become domestic giants, the sky is the limit for US carpet manufacturers. Another element is that it doesn't have to be the biggest companies that become the most successful; it can be smaller commercial manufacturers with the desire, ability and persistence to penetrate the Chinese market. They could even become the new giants in a new market. I think this is an exciting opportunity for the US carpet industry and flooring industry in general.

Some people look at things and never see the opportunity that lies within the challenges that most are lead to believe exist – the negative perspective. The most successful people are those who seek and find opportunity in what others profess are the negatives of their industry – the positive perspective. The most successful people are generally not the most intelligent of society but they are the ones with the most guts and the belief that they will and can succeed no matter what. History, past and recent, proves that true – just look at companies like MicroSoft, Google, FedEx or Star Bucks for example. The US carpet industry can prove that is still true in emerging world markets. Where do you feel you can fit into this unequalled opportunity?

MORE SUCCESS FOR UNIVERSAL TEXTILE TECHNOLOGIES BioCel BACKING

BioCel is the award winning, environmentally sensitive polyurethane backing for carpets and artificial turf developed by Dalton, Georgia based Universal Textile Technologies. UTT is the most technologically advanced backing supplier in the industry. UTT provides products, components and services that enhance the structural integrity and performance of all types of commercial carpet. Any manufacturer, specifier, architect, designer or end user who has a desire to maximize the integrity and service of textile floor covering, coupled with the environmental responsibility has to consider this backing system. The BioCel backing, which uses polymers containing soybean oil and Celceram, a highly-refined recovered form of mineral lignite, is 60 to 70% green by weight. Green is becoming more and more important in the commercial market. This backing system has the most in demand technology and sustainability of any backing product in the market place. It is essential you know about BioCel relative to the LEEDS program, environmental stewardship and responsibility and because this backing system offers the highest physical property levels for structurally sound, high performance commercial carpets.

The Commercial FLOORING REPORT
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THE COMMERCIAL FLOORING REPORT #19 10-13- 2005

THE IMPORTANCE PLANNING

In everything done in business, and life for that matter, it is important to have a plan. At least one should know what they want to accomplish as an end result and consider what must be done to achieve the final objective.

We'll sight two cases where, with one, planning was not done properly and with the other it was. You'll see that the lack of a plan created havoc, frustration, cost overruns and bad feelings. You'll also see where planning had everyone going in the same direction with shared and contributed information that will result in a very successful project.

The first case involved a large addition to a church that had several different colors of two styles of carpet from two different manufacturers. One of the carpets had a geometric pattern that would be installed in open areas that necessitated angles be used. The project was being worked on with the church and a designer. The products were chosen by the fairly large and reputable design firm. The flooring contractor was a local firm that was experienced with large commercial projects and one of their key markets was churches. The flooring contractor had the plans to the job and figured out his scope of work and costs relative to the areas requiring floor covering. He never saw the products he was going to install because that information was never shared with him and unfortunately he never asked. He received the first order of carpet from one of the manufacturers that was a multi colored textured loop style. Since this product was being used in corridors it offered little challenge to layout and installation and presented no issues to the flooring contractor. He assumed that the balance of the carpet would be a similar product. In fact, the additional carpet was a patterned style product in three different colors. When this product arrived and the installer brought it to the job he immediately had problems laying it out. This product was supposed to form a natural break at the color changes which didn't happen and couldn't. The designer failed to realize that using this patterned product would prevent it from being used as anticipated. This may sound ridiculous but it is the truth.

The manufacturer had to be called in to assist these folks in making the carpet work. One of the discussions was to use solid colored fill at the joins of the patterned goods. Though this was a good idea it was not what the end user wanted. The job was held up from completion for weeks because planning was not done. There was a lack of communication from two directions. The designer did not share the product to be installed with the flooring contractor. The flooring contractor bid the job with little questioning. He was unaware that one of the products being installed was a pattern and that there were three different colors of it. This may sound absurd but it is more common than you may think. I'll explain.

I remember attending a flooring installation contractors convention about five years ago, sitting in an installation presentation and hearing the woes of these guys about not being informed of what carpet was to be installed. Many of the attendees bid the jobs "blind"

and when they finally saw the flooring product and the challenges it posed to installation they were forced to install it at a lower price than they would if they knew it was going to be difficult to work with. I was flabbergasted at this because I couldn't imagine quoting a price for installation if I didn't know what the product was. The flooring contractor, in the church case we're sharing, was not in the loop of information. He didn't know what the carpet was that he was responsible for installing. When he saw the first product he assumed the balance of the installation would be with a product that had no pattern. When he saw the patterned carpet he immediately realized that it could not be installed the way the end user and designer wanted it. Since there was no plan a wrench was thrown into the works slowing down the process and increasing the costs considerably.

In the next case of a large public facility where the existing carpet and flooring material had been installed for almost ten years, a detailed plan was devised. A large architectural/design firm was employed for this renovation project. One of the first things they did, which was very impressive, is prepare a booklet over 60 pages long that dealt with carpet replacement evaluation. It included the carpet selection criteria, all aspects of the carpet, construction details such as pile density, yarn twist, etc., in general terms but applicable to the product to eventually be used. It had floor plans, high traffic lanes, alternatives for design and layout and photographs of the existing carpet and how it looked in various areas. There was also a maintenance section, information on recycling and Leeds information. I have never seen a document so detailed in 35 years of working in this industry. It may have lacked some "technical correctness" but that could be easily dealt with. What it contained was information in a manner rarely if ever presented to a client and this was just the start.

In the first floor covering meeting for this project we met with the Vice President of facilities and a contingent of participants including the general contractor and members of his staff, members of the client's staff, the architect in charge and myself. The vice president of facilities described his concerns and what he would like to get from the new flooring material with regard to performance, appearance retention, installation integrity and maintenance. Relative to this we looked at what was currently installed, how the installation was holding up, the "wear" on the carpet, its appearance retention, overall soiling condition, high traffic areas and changes that were going to be made in the new layout of the floor plan and traffic flow.

Having a basic plan, opening a line of communication, discussing the likes and dislikes of the current product, what is expected and desired of the new product and how best to implement the product and how to use the element of design to maintain and extend the life of the carpet are all important aspects of insuring the client gets exactly what they want and need. The next phase of the plan was bringing in the flooring contractor and exploring running line product offerings that will work for this application from manufacturers with proven track records in the specific space being renovated.

The carpet will also be used to define space and separations in the facility. A field product with a busy pattern to hide soil and traffic and bring a new, somewhat contemporary look to the space is being considered. The product itself will be a high

structural integrity construction that will withstand very heavy traffic and use, continual maintenance and will lend itself to a very problem free installation. The high traffic areas will have insets of a complimentary design that can be replaced with higher frequency, four to five years for example, without having to impose on the field product. These locations could even be replaced with a different design to "freshen" the space.

The flooring contractor initially brought a number of products to our subsequent meeting to show as examples of manufacturers products that would comply with the desires of the end user and would deliver the performance necessary. His expertise and experience allowed the end user to see products that were proven in the same type of environment to work. The flooring contractor also knows exactly how the job is to be laid out, what is required of him and every other detail necessary to fulfill the contract. He made suggestions that actually relieved the end user of a concern for seam integrity, which was a challenge with their previous product. There will be no surprises the flooring contractor will have to worry about because he is an integral part of the process, a partner in conjunction with everyone else involved to insure a successful completion of the job.

Contrary to the first example where the flooring contractor knew very little about what was to be used and how he had to install the product and work with it, the second example goes the to opposite extreme. It embodies the concepts all commercial projects should in that all parties are working in unison, as a team, openly communicating and well aware of what the objective is and how it is to be accomplished. While nothing in a construction project ever goes without a hitch, especially when it comes to the floor covering, it certainly pays to have a plan that details ahead of time the floor covering part of the project.

The importance of planning on any commercial floor covering job or project is that it will eliminate guesswork, headaches, frustration and costly mistakes. It's the professional way to do business and all parties, from the manufacturer to the maintenance contractor should be part of the process. Frankly put, when you plan everyone knows what to expect, when you don't plan you don't know what to expect and that is never a good thing.

RECAP OF 2005 AND A LOOK AHEAD TO 2006

WHAT WE SAW IN 2005

The commercial flooring market was on a roll in 2005. Commercial carpet production and sales were up about 10%. There was pent up demand for renovation and capital improvement in the corporate and hospitality market, continued growth in the health care market and continuing expansion in the education sector. The extended period of no spending in corporate and hospitality coupled with increased profits and business allowed the commercial market flood gates to open.

All of the commercial carpet manufacturers we've spoken to have said they are going flat out. This has pushed the delivery dates back for many. Order delivery that took 4 to 6

weeks is now, in many cases, 6 to 8 weeks. On top of this there has been a back log of some yarn. The demand for premium yarn has taxed parts of the system and waiting for a particular colored solution dyed yarn for example has slowed delivery dates.

There was fear, from many smaller manufacturers in particular, that Shaw's purchase of Honeywell yarns was going to send everyone scrambling for an alternative supplier. When product lines are based on one yarn, not being able to get it takes that product out of the mix. Fortunately Honeywell/Shaw is still going to supply the customers who are essentially their competition with yarn they've been getting. Some manufacturers however are looking at alternatives to insure they won't get left hanging in the wind if Shaw makes any supply changes. In my opinion I think it's a good idea to keep supplying the competition with yarn. Any sale they may take and any sale they make still allows for a profit to be made and that is never bad for business.

If any one product forged ahead in 2005 it was carpet tile and that's not going to change any time soon. Carpet tile is still the hottest commercial product on the market. We're also seeing a lot of commercial vinyl being sold as well as more and more wood. Some of the problems we're seeing are vinyl being blown off the floor because the concrete is not being tested or being corrected as it should. Substrate issues are going to be a bigger part of successful installations and prevention of product failure. The challenge with wood is that it's wood. A beautiful product to be sure but it is noisy and it will mark, but that's the nature of the product and the end user must be informed of that. It is also imperative the conditions of the substrate and the ambient air be suitable for the installation of wood or else it will distort on the floor.

WHAT'S AHEAD FOR 2006

More carpet tile in more places, which is a no brainer. More patterned carpet; in fact almost everything we see is patterned in wide width goods and carpet tile. Six foot goods are still pretty bland appearing. More wood and hard surface of all kinds will be used. More elaborate designs being implemented whether in the products themselves or as design elements in a floor from creative installation artwork. We'll see higher performance products with more creative backings and more emphasis on green products and the recycling of product being removed. Floor covering materials do not break down in land fills so recycling removed product is a high priority. We owe this to the earth as good stewards and fortunately the flooring covering industry is extremely conscientious relative to recycling old product.

Business should continue to stay good; there are a multitude of projects in the works even without any of the weather related rebuilds and recoveries in the south and southeast. One issue we are going to hear a lot about is maintenance. The carpet industry is going to base warranty coverage on the maintenance of the products it makes; the systems and the chemicals used to clean carpet influence whether or not the manufacturers will enforce their warranties – this is part of the CRI Seal of Approval Program. There will be increased use of hard surface flooring materials and improved products for the commercial market.

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As the floor covering industry continues to improve commercial products and all the market segments of the industry create demand I think 2006 should be a very good year. Have a Merry Christmas, a wonderful Holiday Season and a happy and prosperous New Year.

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THE COMMERCIAL FLOORING REPORT #20 2-17-2006

LET'S TAKE A LOOK AT WOOD FLOORING

Let's take a look at wood flooring and some of the characteristics and issues relative to this product; one of the fastest growing in popularity and use.

Solid Wood Flooring

Solid wood floors are one solid piece of wood and are generally 3/4" thick. Solid Hardwood Floors are produced from the finest American and Canadian hardwoods including red & white oak, ash, American cherry, hickory and maple, and are available in several widths. There is also an increasing supply of solid wood floors from other parts of the world. Some of it, if you don't know the supplier, can be risky using. Because solid hardwood floors are more susceptible to moisture than engineered wood floors they should only be installed above grade over approved wooden subfloors and must be nailed-down. Solid wood floors can generally be recoated and refinished several times.

Engineered Wood Floors

These floors are produced by laminating several hardwood plies together to form the planks. Most engineered floors can be glued-down, stapled-down or floated over a variety of subfloors including wood, dry concrete slabs and some types of existing flooring. Engineered hardwood floors have cross-ply construction which reduces the expansion/contraction of planks caused by variations in humidity and allows these floors to be installed anywhere in the home. Engineered Hardwood Floors come in a wide variety of widths, thicknesses and colors in both North American and Exotic hardwoods. One issue of concern with these floors is that of multiple layers of varying woods, between 5 and 7 plys. There can be an imbalance of moisture between the top board and the core board(s)

which can create a Crook in the material. This would cause the material to lift or distort on the floor. There are ANSI standards for engineered wood that dictate tolerances of movement.

The floor that fit so well when it was first installed now shows cracks, cupping or buckling. Those are the most common changes that moisture can inflict on a floor. They do no favors for the customer, or for the hardwood flooring industry. Tales of how floors were damaged by water, for whatever reason--improper installation or careless maintenance by the owner--leave the impression that wood floors are more problematic than other flooring choices. For wood flooring professionals, it's important to inform end users about the normal behavior of wood in relation to moisture. Most solid wood flooring will contract during periods of low humidity (usually during the heating season), sometimes leaving noticeable cracks between boards, or else expand during periods of high humidity. To help minimize these effects, users can stabilize the environment of the building through temperature and humidity control. This is an overview of how water and wood don't mix-and what to do if they do. Spotting any potential moisture problems, and taking the proper steps to avoid them, is the path to the most-serviceable floor. Fortunately, many of the instances that involve moisture can be mitigated before, during or soon after installation. A well performing wood floor is often the result of an installer taking the proper time and care necessary for a successful installation. It involves knowledge of: the expected moisture content of wood flooring in a particular area after acclimation; the moisture content of flooring at the time of installation; and the expected "in use" changes. Moisture is a large part of the reason for how wood behaves, both during the machining process and after installation. Installers would do well to understand moisture's effect on wood in some detail.

Water and Wood Basics

The easy explanation that students learn in grade school - trees grow with roots in the ground and leaves in the air - still serves as the basis for understanding the never-ending relationship between water and wood. The roots collect moisture and nutrients from the soil and ship them through vessels or fibers up the trunk and branches to the leaves. These vessels are similar to the "strings" in a stalk of celery. They are similar, too, to a group of soda straws gathered together, running up and down the tree. That's the simple version of how a still-standing tree is made up of vertically-aligned fibers. Cut the tree down, and the fibers are horizontal. Saw it and manufacture strip flooring, nail the floor down and most of the fibers are still horizontal, running the length of the boards.

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In the live tree, the fibers are loaded with moisture, as sap. After being cut, the tree begins to dry out, just like a rose will wilt after it's picked. As the tree's fibers dry, they shrink in thickness or diameter, but almost none lengthwise. This shrinkage, characteristic of all woods, is critical in understanding the effect of moisture on wood flooring. You must remember that wood flooring material is still a tree but in a different form now and it is still subject to the same reaction it was when it was a standing tree.

Moisture content in solid wood is defined as the weight of water in wood expressed as a percentage of the weight of oven-dry wood. Weight, shrinkage, strength and other properties depend on the moisture content of wood. In trees, moisture content may be as much as 200 percent of the weight of wood substance. After harvesting and miring, the wood will be dried to the proper moisture content for its end use. Wood fibers are dimensionally stable when the moisture content is above the fiber saturation point (usually about 30 percent moisture content). Below that, wood changes dimension when it gains or loses moisture. Here are some quick points about shrinking and swelling: Shrinkage usually begins at 25 to 30 percent moisture content, the fiber saturation point. Shrinkage continues to zero percent moisture content, an oven-dry state. Swelling occurs as wood gains moisture, when it moves from zero to 25 to 30 percent moisture content, the fiber saturation point. Different woods exhibit different moisture stability factors, but they always shrink and swell the most in the direction of the annual growth rings (tangentially), about half as much across the rings (radially) and only in minuscule amounts along the grain longitudinally). This means that plainsawn flooring will tend to shrink and swell more in width than quartersawn flooring, and that most flooring will not shrink or swell measurably in length. Generally, flooring is expected to shrink in dry environments and expand in wetter environments. Between the fiber saturation point and the oven dry state, wood will only change by about .1 percent of its dimension along the grain (lengthwise in a flatsawn board). It will change by 2 to 8 percent across the grain and across the annular rings (top to bottom), if quartersawn; and 5 to 15 percent across the grain and parallel to the annular rings (side to side), if plainsawn. Wider boards tend to move more than narrower boards. Movement in a 5-inch-wide plank is more dramatic than in a 2 1/4-inch strip. The ideal moisture content for flooring installation can vary from an extreme of 4 to 18 percent, depending on the wood species, the geographic location of the end product and time of year. Most oak flooring, for example, is milled at 6 to 9 percent. Before installation, solid wood flooring should be acclimated to the area in which it is to be used, and then tested with a moisture meter to ensure the proper moisture content.

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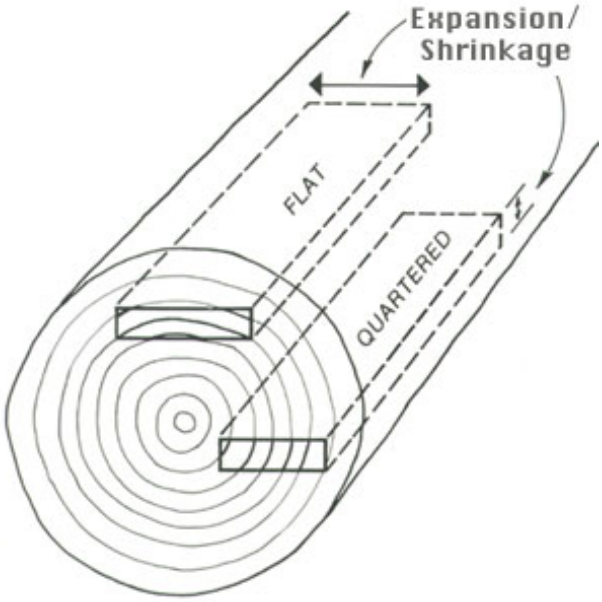
A wood's weight and moisture content:
Wood is hygroscopic--meaning, when exposed to air, wood will lose or gain moisture until it is in equilibrium with the humidity and temperature of the air. Moisture content (MC) from 5 to 25 percent may be determined using various moisture meters developed for this purpose. The most accurate method in all cases, and for any moisture content, is to follow the laboratory procedure of weighing the piece with moisture, removing the moisture by fully drying it in an oven (105 degrees C) and reweighing. The equation for determining moisture content is MC% = weight of wood with water - oven-dry weight / divided by oven-dry weight X 100.



EXAMPLE of EXPANSION/SHRINKAGE

Oak expands and contracts across the grain with moisture change. The difference in how the flooring behaves is significant since plain sawn expands and contracts across the width of the board, while quartered in theory get thicker and thinner. Quartered has considerably more dimensional stability and does not respond to season change as does plain. Using this property, many old Eastern homes in this country had their oak floor installed after the base was applied to the wall and the oak floor was fit tight to the base-years ago-with no problems-quarter sawn flooring only.

Everyone involved with hardwood floors must take all precautions possible to avoid storing, delivery, installing, or maintaining floors in the presence of moisture or dampness. Guaranteed, if the wood is exposed to moisture it

will react. It must acclimate where it is to be installed and guidelines for wood acclimation, installation and moisture related issues are available from NOFMA and NWFA.

Solid wood flooring should be delivered to the jobsite and allowed to acclimate to the conditions in which it will be installed or near occupancy levels. Temperature and humidity should be monitored. Delivery should be after major projects have been completed and thoroughly dry, such as dry wall and masonry work. Doors and windows must be in. Testing of wood, or any subfloors should be performed and moisture levels should not exceed 12-14%. Drainage- It's vital the grading should be directed away from the facility to prevent unnecessary moisture problems. Basements and crawl spaces need proper ventilation. Polyethylene film of 6 mil in thickness must be used as a proper vapor retarder in any crawl spaces or where the soil line lies underneath.

Vent crawl spaces and put own polyethylene as a ground cover where necessary . This vapor barrier will protect the sub floor from the normal moisture produced by the soil. This must be done wherever wood flooring is installed and used.

Keep the wood dry shipping, handling and storage
Make sure the site conditions are dry. Acclimate the material on site in conditioned space for 4-5 days broken up into small lots Solid pre-finished wood floors should acclimate, in open cartons, on site for a minimum 72 hours or until the floor acclimates to the environment.

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To prevent the later pain and suffering of flooring failure, the two things you should do are 1) get a calcium chloride test kit to determine the amount of moisture moving through the concrete slab and 2) get an alkaline test kit. Either of these products can be purchased at a flooring supply or home store. You should also have a meter which measures the temperature and humidity of the airspace. All test results must be recorded for any unfortunate future problems, which hopefully you'll avoid by paying attention to what has to be done on the front end first. Rush or eliminate any necessary steps and you're bound to have a problem arise. This is not a surprise you want to have.

If you have high levels of either moisture or pH, there are some actions you can take. There are some concrete sealers that can be used which may lessen the moisture AND pH to acceptable levels... but there are no guarantees! Be careful... choosing the wrong sealer can make a bad situation worse! So be sure to purchase a sealer that is compatible with the flooring adhesive.

The popularity of wood and its beauty cannot be denied. In commercial space you have to remember what wood will naturally do. It will dent, scratch, gouge, the finish will dull or wear off, it will expand and contract, it can be chipped and marred. Spiked high heels, a small stone in the sole of a shoe or in the wheel of a delivery cart, items or packages dragged across the floor, will all damage the wood and this is what wood does. All the things you can do to a tree in the forest you can do to the wood floor. Maintenance cannot be done with wet mopping; this will cause dimensional changes in the product that are self induced. Wood is also noisy and will require more care. Carpet, in contrast, will hide dust and soil. Wood will magnify these things because it sits on top of the floor. Wood is a beautiful flooring material that requires care in a commercial environment. Know what you're using, how it will or should perform and how it should be cared for before specifying, selling or installing this product. And never take the chance of installing wood in an

environment where there is a hint of compromise to the product or the installation because, inevitably, it will come back to haunt you.

As with all flooring products you have to understand the inherent characteristics of them, where and how they can be used, how they have to be installed correctly, the influence of use and traffic on the product in the installation environment and how the product must be cared for. Taking all of these factors into consideration and having answers for all the questions that will come up will allow you to have a successful installation and satisfy the end user completely.

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THE COMMERCIAL FLOORING REPORT #21 3-21-2006

SHRINKING FLOORING MATERIAL

Floor covering often displays some bizarre behavior which mystifies the end user and the flooring contractor. The changes which occur in the material, some rather soon after installation and others some time later are always the reaction to a condition or stimulus no one is aware of. Most of the time the comments will be similar to "I've never seen anything like this before" or "there must be something wrong with the material for it to do this" this being whatever it is the material is doing that no one can believe. Just because no one has ever seen what the flooring material is doing doesn't mean what's happening is abnormal. It may be different for them but chances are something like it or similar to it, has occurred before, in some way, shape or form. Let's look at some examples and expose what they were hiding.

In one commercial installation a small area of about 200 yards of 28 ounce, straight row stitched, level loop nylon carpet was installed over a concrete floor using a spray adhesive. About a month after the installation the carpet started pulling away from the wall. It appeared the carpet was shrinking and in fact, it had. It was decided that to combat this problem a 12 inch solid colored border would be added to the perimeter of the room. By adding the border the separation of the original carpet from the wall would be eliminated and a design element added that complimented the installation. This seemed to be a great fix and everyone was satisfied. Three years later the carpet started pulling away from the border and now everyone began scratching their head and wondering what in the world could be happening now. The first question that must be answered is why is the carpet pulling away or shrinking from the border and does this have anything to do with the original problem of the carpet shrinking away from the wall. It would not be wrong to think there was something wrong with the carpet but it might not be the right thing to think.

What do we know here? We know the carpet was shrinking and that it did so within one month but why would it do it again after 3 years on the floor? Carpet that is not held in place will move – nylon carpet will expand and contract. Why was this carpet moving, early on and again now? If the carpet is not acclimated to the environment in which it is installed, prior to installing it, it will try to find its level of "relaxation" afterwards. This will result in it trying to move to that place. In the process of doing this it creates a lateral sheer force energy that literally pulls lineally, in width or length, across the plane of the carpet. If the carpet is not held firmly all over it will move in the path of least resistance. Since the perimeter edges of carpet in many glue down installations very often don't get a complete full spread application, or in this case, the proper amount of adhesive sprayed on, it creates a weak bonding area. If a carpet is going to move the first place it will manifest the movement is along the perimeter – this is where the movement will be noticed.

Shrinking three years after installation is also the result of the carpet moving but now we have to look at some other factors. Why, if it was stable for three years did it now move

and what stimulus was it subjected to or what was compromised to allow the carpet to move?

For carpet to move a couple of things have to be going on. The first is the product not having been acclimated to the installation environment prior to installation. What this means is the carpet was not allowed or given the opportunity to relax prior to being installed. If it does not relax it will try to do so once it warms up and it will find where it wants to go. Simply put, it will move when it relaxes and this will either cause it to expand or contract. If the adhesive has not anchored it securely it will move. Spray adhesive does not always have the greatest shear strength and a carpet that wants to move laterally across the plane can and will do so if it generates enough force. Fluctuation in the heating and air conditioning system can also cause carpet to expand and contract, again especially if it is not held securely in place or the adhesive looses its grip on the carpet. Cleaning the carpet with a system that puts a volume of water down and does not take enough up will also cause the carpet to shrink. When the carpet shrinks it can pull itself across the adhesive and the bond can be broken if the bond has been compromised in some way. Another factor is moisture in the concrete compromising the adhesive and allowing the carpet the freedom to move.

Since this carpet initially shrunk from the wall it would be reasonable to suspect it was not completely acclimated and that the adhesive was not aggressive enough to prevent it from moving. The border inset was a good idea and wise choice to correct this problem. Later, when the body of the carpet moved again away from the border it would be reasonable to suspect one of the other influencers. The one factor likely to be allowing this to happen is the adhesive and its lack of being able to prevent lateral movement of the carpet because it was losing its grip for whatever reason – which could be determined. The stimulus, which can only be determined by questioning what's going on in the environment, could be any one of the things mentioned previously. If the carpet is not being held in place changes in the space environment could cause it to move. Wet cleaning, could, over a period of time, also be causing the carpet to move. A carpet not being held securely in place will be left to its own devices and move by expanding or contracting whenever it has the opportunity to do so. In this case the carpet was shrinking and this suggests moisture in some form coupled with the loss or compromise of adhesion.

Once this happens can it be fixed? Maybe. If the carpet can be pulled from the adhesive without a great deal of effort then it will lend itself to a potential fix. A "Crab" or Mini-Stretcher could possibly pull the carpets together so the space could be closed up. This would consist of freeing the carpet from the adhesive for a short distance from the seam, if possible and forcing it over with the Mini-Stretcher. It would have to be stay tacked in place and a fast setting, very aggressive adhesive, possibly even contact adhesive, used to re-glue it. The stay nails would have to be left in place until the adhesive dried and the carpet pulled over enough to give it some "fat" to spring back a bit. If this could not be done a new and wider border could be installed. However, three years time and use may not allow this to look as aesthetically pleasing as when the carpets were new. The other

alternative is to replace the carpet and figure out what the cause of the problem was to prevent it from reoccurring.

At first glance this may seem like an installation related issue and it may be or partially be. Chances are it was the adhesive not being able to hold the carpet in place and then another stimulus came along and exacerbated and compromised the carpet and installlation. Spray adhesives can sometimes cause this type of problem and it wouldn't be the first time it happened.

Carpet isn't the only floor covering material that can shrink. Wood and vinyl will also shrink if not properly acclimated and held in place. Wood will likely shrink in the length leaving gaps at the end and vinyl will shrink along the perimeters and at the seams when it moves. Aside from properly acclimating the product, the guidelines which are provided by the manufacturer and the relevant flooring material association for the particular product, controlling ambient and substrate moisture conditions, are also necessary. For the sake of not sounding like we're beating a dead horse, it cannot be stressed enough the importance of testing for moisture vapor emission prior to installation and controlling moisture in the air afterwards. Both conditions, out of control can and will affect the flooring material and the installation of it. Stone is the only thing that won't move but its installation could be compromised depending on what was used to fasten it in place.

Vinyl would be more susceptible to movement with changes in heat and cold. The warmer it is the more it would move; colder and it would tend to shrink – only if not affixed firmly to the floor and if there were an inherent instability in the material. This could be relevant to sheet vinyl, planks, tiles or any other form of vinyl flooring material. Wood and wood component products are extremely susceptible to moisture. As we've said here before, wood in any form still must be thought of as a tree. It absorbs water, expands and contracts, dents, scratches, chips, and abrades. The part people seem to forget is that which deals with the influence of water on wood. Water will make wood change its form and if it changes this can result in gaps and voids in a wood floor.

Don't forget to use common sense when you see floor covering moving on the floor. It means it is not being held in place and something is influencing it to cause it to move as a result. If you understand floor covering products and what they will and won't do you can avoid trouble, whether you're the end user, flooring contractor, architect, designer, specifier, cleaner or manufacturer. Remember, the flooring never lies, it will always tell you what's wrong if you know how to interpret what its saying. That's where our expertise comes in, we can always figure out what went wrong and why. It may not be what everyone wants to hear but it's always the truth, painful as it may be.

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THE COMMERCIAL FLOORING REPORT #22 4-24-2006

The question was posed recently about patterned carpet and what's normal about the way it appears in a wide open installation. To be more specific the question was about bands or lines showing up in a wide open area that are actually the pattern itself. The repeat in the pattern, when looked at from a distance actually will give the illusion of a line or band in the material. Though this is not a normal question, the end user was concerned because this is not something that they were aware would happen.

Any patterned material, whether carpet, wall paper, or clothing can and will have repeat lines visible and depending on what the design of the pattern is, they may be more evident. Let's say that a product used in a ball room, for example, has a pattern that repeats every 12 inches and that the pattern runs the length of the material and at an angle. If you look down the length of the ballroom as the pattern becomes more obscure it will appear as a lineal band. This will also occur when looking at an angle. As a matter of fact, even if the pattern is larger and it repeats in the length, it will appear as a band in the material. This is not something that should be considered a problem. Actually, to think so defies logic because that's what repeating patterns do. A simple example and comparison would be the hash marks in a highway. They are a defined length with and equa-distant space and when looked at on a long flat expanse would appear as a solid line. This is a pattern and it would be no different in a large area of carpet. It was somewhat mystifying when this question was brought up by a mill rep that had an issue with an end user regarding the normal pattern lines in the carpet. What else would you expect the pattern to do and how could you expect a patterned carpet not to look like this especially if you have had any experience with this type of product.

Certainly you could understand if the pattern had a bow, skew or waver in it or if it did not align squarely at the seams. This was not the case in this situation. There was no concern for the pattern being out of square in any way. The concern was for the pattern being a pattern and exhibiting a characteristic that is normal and inherent in the product. If someone doesn't like this look then they should choose a pattern that is random in nature with a large repeat. But a smaller pattern that is lineal is going to show bands because that's what makes up the pattern and how it is laid out. The pattern is going to be somewhat like a grid when the pattern repeat is progressive and that's the way the carpet is going to look on the floor, somewhat like a grid.

Anyone who works with patterned carpet such as a designer, architect or end user, particularly in the hospitality segment of the marketplace where patterned carpet is the norm, should be well aware of this. Maybe outside of this market the end user might not be so astute and be puzzled by what they see in a large area where the patterned material has been installed. But one would think that common sense would prevail and these normal bands would be understood for what they are, the normal repeat of the pattern in the product. Needless to say, this type of concern is rare but if you work with patterned goods and get a complaint on a streak, 30 to 40% of the time it is due to a repeating element in the pattern that is interpreted as a streak. This can occur in woven, tufted, printed or any other type of construction that includes a pattern.

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THE COMMERCIAL FLOORING REPORT #23 7-21-2006

NeoCon 2006 AND MORE

NeoCon 2006 was one of the best attended I have seen in years. The aisles were full, the seminars were well attended, the space renovated, brighter and much easier to negotiate and the amenities for attendees the best ever. It was actually easier to get around and move from floor to floor. Most of the time I walked the stairs but when the elevators were used it wasn't with the same drudgery and pain it used to be. Total attendance for the show was over 50,000, an increase of 15% over 2005. Seminar attendance was said to be up approximately 80%. The venues for seminars were improved allowing presenters to accommodate more attendees with better facilities. And, no one had to go a long distance to attend one of the myriad of seminars offered on a multitude of subjects.

The mood was extremely up beat and no showroom or space I stopped in had anything but good things to say about the traffic. This years attendees were not just there to look but many of them were there to do some serious business. NeoCon is generally a "show" where designers, architects, dealers and other buyers of products displayed will get an idea of what they want and then deal with their respective reps to get it. This year more attendees were actually buying as was reported by vendors showing their wares.

One other impressive fact about NeoCon, especially in light of the fact that the world has seemed to go casual at every level, is that people actually dress up to attend this event. It's kind of like the grand ball of the commercial furnishings market, truly a professional looking event and refreshing to see, to say the least. Some floor covering vendors chose to look a little more casual but they were in the minority and they did not look like the class group that they should have relative to the caliber of NeoCon. In my opinion NeoCon represents the best of the best and the vendors, at least, should look the part of consummate professionals offering the best commercial interior furnishings products available – it makes a much better statement particularly at this event.

There was a new found excitement and it showed as the commercial market continues to awaken from having been dormant for so long. There was no doubt that this market proved business is alive and well in the commercial sector. Every one of the floorcovering vendors we spoke to was more than upbeat about the traffic, the market venue and the positive response they were getting from attendees visiting their spaces. There was no shortage of over the top showrooms and high styled flooring materials. As has been the case for the last several years at NeoCon there was a competitive "one upmanship" between carpet manufacturers and this year they were joined by the hard surface manufacturers as well.

In the modular carpet tile category C & A Flooring won the gold medal for the Beneath the Surface Collection. This product also comes in six foot goods and broadloom. This collection, because of its wide range of sizes, can be used on any installation site where, for example, there would be wide open spaces, offices, corridors and stairs and the need for tiles, six foot goods or broadloom would allow for complete flexibility of application.

There are manufacturers who produce modular carpet tiles who do not coordinate their products with a narrow width or broadloom offerings. A self imposed limitation I've always found to be unbelievable because it prevents a manufacturer from fully serving the end users needs. C&A keeps getting better at the process of providing high quality products with improving styling, as it obvious by their win in this category. This company is impressive because they keep upping the bar on themselves. Not only do they continue to produce award winning products and styles, with all the flexibility one would want, but they are extremely involved and dedicated to the recycling of materials into their own products as well as other aftermarket products for various uses and applications in the general market place. The entire industry for that matter is a leader in the recycling effort.

Shaw Industries won the gold medal in the broadloom category with the Silk Collection. This line was said to be a modern take on an ancient tradition, with wonderful colors, textures and patterning. With that being said I will tell you that Shaw's showroom was crowded constantly. On two different occasions, in two days visiting the space, there wasn't a time that it wasn't full of people. This showroom, aside from having great product, had an ambiance about it of warmth and welcome. All the products were well styled and displayed. Shaw is really stepping out style wise. As the largest textile floor covering manufacturer and a company that has been traditionally manufacturing driven, one might think that Shaw would not be so astute on the cutting edge of what the market wants. But this market proved otherwise as is clearly evident by Shaw's winning the gold medal in the broadloom category. Shaw didn't get as big and prominent as they are by not understanding any segment of the floor covering market they do business in and they keep getting better at it.

Directly across the hall from Shaw was the Mannington space. Mannington is unique in their product line because they allow the designer, architect or end user to coordinate not only their carpet line but also all of their hard surface products. There were mock up installations of coordinate products on the floor with such beautiful blends and extraordinary styling of soft and hard surface that it would be impossible for one not to be able to find something that would make a styling statement on the floor. This was also a beautiful showroom that was always crowded. Also of interest was the back wall which had printed samples of carpet and two actual samples of carpet that were virtually impossible to tell apart. This is the newest trend in samples.

Tricycle, the company whose technology has made paper samples look like the real thing, has made it possible for interested parties to get pictures of a product that are so close to the real thing in true appearance and dimension that even when placed on a wall they defy you to tell the difference between what's a simulation and what's real. Once a decision is made using a picture as to the carpet product one wants a "live" sample of it can be provided by the manufacturer. This fabulous process eliminates a lot of waste, time, and money and allows for a virtual real sample to be seen. The Tricycle process keeps getting better and evolving constantly. This is amazing technology.

Always a standout with a variety of brands and styles is Mohawk. This large open showroom showcased Mohawks entire product line of commercial goods. Between Durkan, Karastan, Bigelow and Mohawk Commercial there is a selection that provides a product and a style for everyone. Again, as in all the commercial carpet showrooms, pattern is everywhere and in addition to pattern a palette of colors that truly step out with smatterings of pinks and reds. You walk from one line displayed to another and marvel at what feasts the eyes in Mohawk showroom. The Karastan line had a tailored look with bright colors; Mohawk Commercial had multi-colored block patterns textured and a great color line; the Bigelow line had great patterns and colors that were intricate and interesting; the Durkan line had deep rich colors and great patterns.

The InterfaceFlor, their new name, showroom, shared with the Bentley Prince Street division, looked more like a crowded wedding than a commercial carpet space. There were so many people in this space that it was hard to see the carpet. This is not a negative statement but one which embellishes the popularity of this company and the quality of its products. Interface is one of the leaders in commercial carpet and it was evident they have the eye and ear of the design and architectural community. With the return of Jack Mishkin, noted design guru, Bentley Prince Street has new inspiration and invigoration of their product line. The mood here was lively, spirited and energetic. No other showroom I visited seemed to have the same festive air about it and this was not an end of the day thing either. InterfaceFlor's presence at NeoCon 2006 is a re-dedication to being part of the best commercial market venue in the industry.

Milliken stepped out with a new program of textured printed goods. They won the silver award for Foreign Intrigue at NeoCon. Milliken is the oldest and most talented at producing printed patterns and they have collaborated in the last few years with design firms such as Gensler to develop products and styles unique to the industry. Their 12th generation Millitron dye injection printing technology is limited only by ones mind and imagination. This is Milliken's forte and it was prominently displayed at their busy showroom.

Masland, as always was a standout. This company continually produces some beautiful patterns and color ways. Masland has for years been one of the premium manufacturers in both commercial and residential product. They were also showing for the first time their new line of carpet tiles debuting at this show.

Blue Ridge is a company who, as a whole, keeps getting better every year. This is a group that has their act together. Each year they present a more stylized product line up and this year was no exception. They too have broadened their carpet tile line for 2006 with a view of tomorrow and what its demands will be on textile floor covering. This is one of the small companies that works hard to get it right.

J & J and Invision is ever the classic commercial carpet manufacturer, with one of the most conscientious management groups and a self imposed mandate to always be a high quality producer. The product line includes new patterns with deep rich colors. J & J has for more years than most been dedicated to the commercial market and providing it high

performing products. It has continued in this endeavor with better styling and colors shown this year.

Beaulieu had elaborate new patterns and backing systems and a unique display to present them both. This group steps outside the box when showing their products by using draped materials, umbrellas of carpet and walls displayed differently with their carpet styles. Beaulieu is another carpet manufacturer that continues to evolve as a style and technology innovator. Not only is their showroom classic but if you ever have the opportunity to visit their offices in Adairsville, Georgia, you'll see first hand how their NeoCon showroom is a reflection of the day to day operation. Their offices remind me of a futuristic type space that smacks of a scene you'd see in a movie. Beaulieu, the third largest carpet producer in the industry, is making significant inroads into the commercial market with some very fine products and styling.

Burtco, a small manufacturer that in my opinion is one of the best kept secrets in the industry, has the capability to design and produce anything the mind can conceive in a tufted patterned product. Burtco is, without question, the premier CYP manufacturer in the industry. No one has a handle on Computer Yarn Placement tufting technology like they do. Their quality, in my opinion, is among the very best in the industry - almost never a claim on the pattern being out of square. Where others endeavor to get a similar type product out the door, Burtco gets it out the door as close to trouble free as is humanly possible. It's what you don't see with this company that makes it so special. In my 25 years plus knowing the head of this company I can't say enough about how good they really are. If the marketplace knew this, they'd be amazed what a find they'd have.

In the same genre as Burtco is Fortune Contract. This is another small manufacturer that doesn't know how to make bad carpet. When the owner is responsible for quality it's hard not to get it. Fortune has some very unique styling with very linear and striated patterns.

For sheer styling prowess and textural creativity the perennial favorite has to be Atlas. I am continually amazed at how fantastic the styles, patterns and textures are of this premier California commercial carpet manufacturer. Atlas dominates with the variety of unusual and out of the ordinary tufted patterns. Utilizing swirls, circles, diagonals, and angles these carpet products are true standouts. I'd be lying if I were to tell you that Atlas is not my favorite patterned and style carpet manufacturer. It's mystifying how they keep developing patterns and styles that no one else even comes close to emulating. No manufacturer has a better command of the technology for making truly unique patterned carpet than Atlas. I love what this company does with tufted patterned commercial carpet.

As far as carpet goes, with all the manufacturers represented, the overwhelming theme was bold colors and more elaborate patterns. If you didn't see something wonderful among all the vendors displaying carpet at this years NeoCon you weren't looking.

In the hard surface category there were standouts as well. Plynyl by Chilewich, the most unique flooring product on the market, had bold stripes in their woven vinyl line. This product just shines on the floor and by that I mean it stands out like nothing else. Sandy Chilewich and Joe Sultan have done a magnificent job in a short period of time. Coming into the industry less than five years ago as neophytes they have won the hearts of the design community.

Centiva, as always, was the standout in vinyl tile flooring. Centiva has some of the best floor designs there are. They can custom design any conceivable layout for any designer or architect. With the array of bright colors, textures and replications of wood, stone and other materials they are the best at what they do.

Armstrong also introduced a Natural Collections vinyl tile line with the realistic look of various flooring materials, such as wood, stone and bamboo.

The presence of a number of ceramic tile manufacturers, making a push into the commercial market, was vividly evident. Each vendor had heavy traffic as ceramic floors of all types become increasingly popular in the commercial market.

All in all, Neocon 2006 was by all measures, a huge hit. To walk through this show and be continually bombarded, amazed and overwhelmed by the visually beautiful product being offered, not only in floor coverings but in all kinds of commercial interior furnishings, is more than a treat. NeoCon should be a must attend for anyone in the commercial marketplace. Not attending is not being aware of the trends taking place in the commercial market, which are imperative to understand to be successful in this important market segment.

THE COMMERCIAL FLOORING REPORT #24 8-18-2006

DAMAGED FLOORING MATERIAL

Damage to floor covering material can come from any number of sources. The kind of damage we're talking about here would generally not be manufacturing related, although there can be damage created during manufacture. Most damage related to manufacturing however, whether it be handling or from a major malfunction of part of the manufacturing process, is either not going to get shipped or if it does, the damage would be noticed when the product was unwrapped before it gets installed - hopefully. Blatantly obvious damage is not normally going to get out the door of the manufacturing facility. This is not to say it hasn't happened. We can take a look at what some of that might be shortly. Damaged flooring material is most often from some type of use, abuse, accident or other incident that occurs at the installation site. The damage could be from an Act of God, such as a major storm or pipes freezing or man made from leaking plumbing, tracked in contamination, installation damage, construction damage or anything that happens after the flooring material is installed even from materials employed to protect the flooring.

All floor covering, soft or hard, can be affected by damage and determining what the cause was, who is to blame and whether or not the damage can be repaired is the crux of our conversation. Much of the damage one will see is going to be related to construction, whether in a new building or a renovation. But, certainly there are other causes. As far as manufacturing damage, it too could be with handling. A hyster pole going through the inside of a roll of carpet would not be uncommon or simply moving the material around and banging it up, will occasionally happen. Remember, we're talking about damage here not defects.

The first area to look at is handling. Wrestling floor covering products around from a delivery truck to the warehouse to another truck and then to the jobsite can exert a lot of stress on materials not designed to be roughly treated. Carpet can rip, weaken, indent, distort and come apart if not handled properly. Wood, ceramic and laminate can creak, break, indent and chip if thrown around. Every bit of this material is valuable and none of it should subject to "forced attrition" because it was damaged in transit. That being said, if the material is damaged during this stage of a project it can be culled from the job – that's common sense. Manufacturers will take pains to insure none of the product they just sold and produced, especially if it's a custom order, is damaged by them. So the damage, initially, and for the most part in this stage of a project, is going to be from their dock door to that of the clients. The more hands the material passes through the greater the chances for damage.

The next stage is during the construction process. In a Utopian world floor covering would be the last product installed. There would be no other trades working on it and virtually no chance for it to be compromised as a result. We know that Utopia is mostly the things that make up dreams and new construction and renovation projects are more nightmarish than dream like. Deadlines have to be met that are often unrealistic, projects

get behind, penalties are threatened and every trade is working on top of each other. It gets to be like choreographing and ant colony with everyone on top of each other vying for position while trying to get their part of the project done on time. The things punch lists are made of.

So, the flooring material makes it into the space, hopefully gets installed on substrates in the proper condition to accept it and as soon as it goes down everyone else moves back in. Often it's going in and other trades are moving in on it. This can cause material to slide in the adhesive, adhesive to get tracked onto the surfaces of the flooring and dirt deposited on it. To protect the material a covering is placed on top of it, hopefully. This can be Kraft paper, Masonite, pressure sensitive clear plastic runners or other materials. If the covering is in less than in perfect shape it can scratch or mar the surface of the flooring. Dirt can get caught and stuck between the edges of hard surface materials. Carpet that is glued to the floor and has plastic non-permeable covering put on it before the glue dries can be discolored. The clear plastic pressure sensitive adhesive runner can transfer adhesive to the surface of carpet that won't come off. This type of damage necessitates the carpet being replaced because nothing will fix it. Discoloration from color running cannot be reversed and the pressure sensitive adhesive from plastic runners left on too long can't be removed with anything safe for anyone to be working with in a closed space. The only fix is to replace the carpet in a situation like this. If the carpet happens to be wool and there is uncured adhesive under it when the carpet is covered it can trap the water carrier in the adhesive, which will be absorbed by the wool causing mold and mildew that will rot the carpet. If the woven carpet has a jute back it will be damaged or destroyed. All these things cited have actually happened to clients of ours and the only fix was to replace the flooring material.

Next might be putting up materials or building systems furniture on unprotected flooring material. Again the floor covering, if not protected properly, will be subjected to dragging, placing and positioning these things on top of it. As a result there will be cuts, pulls, scrapes, scratches and cracks that would require replacing the damaged section of flooring material affected. There can also be damage from heavy carts loaded with fixtures and furnishing that cause damage. Let's not forget other trades working on the flooring material such as a plumber cutting threads in a pipe over unprotected carpet or vinyl resulting in cutting oil stains at the least. Someone may try to blame the material but since it never lies and it will always tell you what happened if you know how to interpret it, the cause can always be found. This is one of the biggest areas of damage to new commercial flooring material, particularly in offices where there is a lot of furniture, walls, fixtures and what not in what we'll call confined spaces. In wide open areas there may be less damage simply because there is less actual vertically oriented construction activity taking place.

Damage can also result from clean up after the construction process. In one situation a cleaning crew came in to wipe down walls, woodwork, door frames, bathroom floors and stainless steel elevator entry framework. In the process the carpet adjacent to these areas was affected by the cleaning agents. Oxidizers (bleaching agents) actually stripped color out of the carpet. The damage was heaviest outside the entries to the rest rooms when the

solution used to mop the floors was transferred to the carpet, bleaching out the color so badly the carpet had to be replaced. Damage to the carpet along walls was caused when the cloth with the cleaning agent came in contact with the carpet surface affecting the color on the yarn tips. In other areas an aerosol cleaner affected the color in the carpet. All of this damage was related to clean up and this was the responsibility of the cleaning firm. Obviously the cleaning agents used were too harsh for the carpet and actually too harsh for the woodwork as well.

Damage from water pipe breaks or severe weather which has damaged a roof or blown through a window opening from inclement weather affecting flooring material when it is installed prior to the windows being installed. Water damage can weaken a carpet or cause a glued down installation to come up off the substrate. This can occur with any type of flooring material. The most forgiving of any flooded flooring material is carpet. It can actually get flooded and be saved by extracting the water and allowing the material to dry out. And actually it may not be affected adversely at all. In several cases of flooding, from a pipe break or a storm, the carpet that got wet was not damaged at all nor was the installation of it compromised. If the carpet is installed with a pad and tackless installation it can be pulled up, dried out, the pad dried out or replaced, the tackless checked for damaged and either salvaged or replaced, the carpet and pad deodorized and disinfected if necessary, depending on the source of the water and then reinstalled. If the water is clean the carpet can usually be saved and very often it is not adversely affected at all. If the water is contaminated the entire installation may have to be scrapped, the affected area decontaminated and all new product installed. Contamination issues when clean water is not involved would have to be determined by an expert in restoration services.

Water damage to vinyl would have to be evaluated on a case by case basis. Water will not damage the vinyl but it can weaken the adhesive causing the vinyl to lift and possibly curl. If that happens everything has to be replaced. Wood and laminate would unquestionably require replacement and it would exhibit the most severe affects from water as it would be distorted, warped or otherwise dimensionally and physically changed and damaged.

Unprotected edges of hard surface flooring can be chipped, gouged, cracked or broken if heavy foot or rolling traffic is allowed over it. This can happen on a construction site when other trades wheel heavy loads of materials over the flooring. It can also happen, for example, in a busy airport being renovated. If the work is done at night and then subject to heavy passenger volume during the day, edges not properly protected can be damaged.

There are all manner of ways floor covering can be damaged before it is even put into use. All parties involved in the construction process need to be made aware of this and necessary precautions taken. These are only some of the things we've seen lately that should make you aware of the importance of protecting the floor covering and the installation so it does not become a costly repair item on a punch list. It is much cheaper and easier to protect the installation than to have to replace it later. As for water damage

after the fact it can cause heavy damage or none at all other than the material getting wet. This would have to be evaluated by someone who knows what they're doing. A lot of so called water damaged floor covering has been paid for or replaced by insurance companies that really only needed to be cleaned.

There's nothing discussed here that LGM can't help you with. If you have a question or need professional assistance all you have to do is call.

The Commercial FLOORING REPORT

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THE COMMERCIAL FLOORING REPORT #25 11-30-2006

THE FREE LAY™ BACKING SYSTEM

The two biggest concerns and problems in the industry relative to textile floor covering materials are installation and maintenance. Maintenance is being addressed aggressively by the Carpet and Rug Institute (CRI) in their new Seal of Approval program and by new initiatives of the Institute of Inspection, Cleaning and Restoration Certification (IICRC). Also, manufacturers are now tying their warranties on residential carpet to maintenance. If the carpet is not maintained properly the warranties are voided. It won't be long before this applies to commercial carpets as well.

Carpet installation standards are up for a complete revision but that effort has only just begun. Until the revisions are made we have the CRI 104 guidelines for installation of commercial carpet with its residential counterpart, CRI 105. Individual manufacturers also have their own standards and guidelines for installation. That having been said, installation for the most part is comprised of installers, skilled or not, using tools, correctly or not, and fastening components, often used incorrectly, to put textile floor covering down wherever, under varying circumstances which are often not ideal, into whatever facility it has been sold to. There are so many factors that can compromise an installation it's not even funny. Add to that the simple fact that ignorance, in every aspect of the installation process, is a major factor in failures. There can be books full of words on how to do something right but the challenge is getting that information to the installers and other necessary parties and then having them read it. There has not been much in the way of technology and advances designed specifically to eliminate failures or compromises in the installation of carpet.

What I'm about to share with you is amazing, extraordinary, unique, fascinating and, in some respects, you may think unbelievable. It is a complete paradigm shift in the installation process. It resolves so many compromises in the failures of installations and completely eliminates so many of the major issues lamented about constantly, that it will save millions of dollars in claims, call backs and complaints. It also has the potential to significantly reduce installation problems as they relate to adhesive and stretching issues.

This phenomenal new technological breakthrough is called Free Lay™. It is a completely unique backing system that allows the installation of attached cushion broadloom carpet without the use of adhesives or tackstrip. This system eliminates several steps in the installation process, also simplifying it with NO compromise in the long-term performance or appearance of the carpet. In fact, with the attached polyurethane cushioned backing, the carpet will actually perform and look better over its life. And, in my opinion, nothing increases performance and value in a carpet like attached polyurethane backing and cushion. Not only does this system eliminate problems associated with normal methods of installation, it also insures that the very high costs of removing carpet that has been glued directly to the substrate are greatly reduced.

The only step necessary is for the substrate to be completely clean and dry and the alkalinity should not be over 10 ph. On concrete, plywood, particle board or metal (such as raised access floors) a polymer must be applied first. Carpets with the Free Lay System can be installed over hardwood, laminate, vinyl, VAT, VCT, terrazzo, granite, marble, polished concrete and ceramic flooring materials, virtually any smooth, glossy surface without applying the polymer. We have a small sample piece of the product "installed" on the glass top of our conference room table. It has been taken up and put back down dozens of times without compromise. The "stick" never goes away with this system. This backing system will not discolor the surface of materials it is applied to, it will not leave a residue and it will have no affect on the substrate. Take up is so easy, it's a joke. This system will also eliminate having to take up or encapsulate vinyl asbestos tile.

The Free Lay Backing System can be applied to any manufacturer's carpet that has a woven polypropylene backing or one of the soft backing systems. It is applied directly over these backings. The science of the bond of Free Lay works much like how a fly sticks to a wall. The active film on the cushion backing material forms a bond on the polymer or the flooring material it is placed upon, allowing the carpet to stay in place. The carpet will not move laterally but it can easily be vertically lifted off the floor. The longer the carpet stays in place the stronger the bond becomes up to the point of maximum anchoring tenacity. The bond never becomes permanent and the flooring material can be easily removed without any damage or negative affects to the substrate material it is placed upon. This technology can also be used on carpet tiles and area rugs.

Some History:

The Free Lay Backing System technology was discovered and invented in 1996 and patented in 2000. The system has been continually improved upon over that 10 year period of time. We have been involved with the system since it was patented. One of our initiatives has been to try and make the system fail – without success. To this date there are installations of Free Lay over concrete where other installations have failed. Free Lay has been installed successfully over conditions of moisture and alkalinity levels which would compromise the installation of glued down carpet. It is installed in a liquor store and has been for years without failure. It is installed in offices, medical facilities, a large and busy floor covering showroom, several homes, carpet manufacturer's offices, day care centers, an indoor golf instruction facility, flooring test facilities, a church, an exercise facility and a school. In none of these installations has it ever shown any sign of compromise. Once it's down it stays in place.

Carpets with the Free Lay Backing System can be used in airplanes, motor homes, modular homes, residences, offices and any place regular carpet is used, without being affixed to the floor by mechanical means or adhesive. If the backing gets dirty it is possible to gently clean it off with a damp cloth and put back down.

Advantages of the System:

Since the Free Lay system requires no adhesive there is no chance of adhesive odors. No concerns for not enough adhesive or not enough adhesive transfer, too much adhesive, wrong type of adhesive, too much or too little open time, wrong trowel, worn trowel, elevated moisture emission levels, decomposition of adhesive from high alkalinity or moisture levels. It is faster to install than direct glue down or certainly double stick installations and much less messy. There is no adhesive cost. The carpet can be cut to-fit and it will stay in place. It still requires the skill of a professional installer; this is not a do-it-yourself or amateur system. Since the entire backing grips the substrate 100%, the lateral bond is as strong as the strongest adhesive available. Rolling traffic can be used without concern for breaking the bond of the carpet to the substrate. The bond would actually be stronger where the carpet is pressed onto the substrate. Because every square inch of the backside of the carpet is attracted to a permanent cross-linked polymer system that is a part of the concrete floor itself, the dimensional stability of the carpet and installation is extraordinary. Also, installations with Free Lay can be trafficked immediately after they are put down. There is no concern for compromising any adhesion and no worries about adhesive moisture volatizing through the carpet if it is covered. Graphics carpet with the Free Lay backing system will not shrink at the seams as it can do with traditional direct glue down installation – a surprise many installers and end users have experienced the morning after.

In the apartment market the system will go down in a unit quickly and with ease and one need not worry about owners complaining about replacing tackstrip because tackstrip is not necessary. There is no need to power stretch the carpet – just cut and fit it. Over the polymer, the carpet will not buckle or wrinkle because the entire backing surface is bonded to the substrate. The same is true in residential application – no more worries about loose carpet causing buckles and wrinkles. In the hospitality market carpet can be installed faster, rooms need not be stretched in; again buckles and wrinkles can be eliminated. Replacement of rooms' carpet could be done quickly and easily. In the health care market there is no concern for the carpet coming loose from the substrate and threatening the safety of elderly occupants. No need to use adhesive that could have an odor, no matter how slight, or be compromised. In the corporate market, or elsewhere for that matter, this system allows for easier design elements like free form designs, borders, insets and out-fills.

Carpets with the Free Lay Backing System will resist wrinkling, buckling, puckering or bulging due to changes in humidity. With the entire backing held in place the carpet will not move. Seams are less visible because the integrity of the carpet and backing system is greater and there is no seam peaking. Seaming does not require heat taping or any taping because the carpet will bond in place. There is no concern for compromise to the carpets cut or seamed edges from too much heat, too little heat, discoloration from heat or trapped moisture at the seam from a seaming iron that's too hot, pile distortion or tape

telegraphing through. Eliminated too, is the chance of using the wrong carpet cushion. Carpet cushion that is too soft or too thick can cause a carpet to become loose, therefore creating buckles and wrinkles. This problem has plagued the residential carpet market for years and created animosity between carpet dealers and manufacturers.

Is it Too Good to Be True?

It certainly sounds like it, doesn't it? That's what I thought five years ago but try as we did, and continue to do, we cannot, nor can anyone else, find a location where this system has failed nor has it shown any signs of approaching failure in any way. This system does not eliminate normal good sense practices. The substrate still has to be clean and dry, the installer still has to have skill cutting and fitting, seams still have to be sealed. Patterned goods still have to be worked with skill and know how. But, you'd have to work hard to make a carpet installation fail with this backing system. Any carpet manufacturer producing any carpet with a woven synthetic backing can utilize this backing technology. All the components normally used in carpet installation which would cause a failure are eliminated with the Free Lay System. The industry can say goodbye to claims of buckles and wrinkles associated with failed stretch in or glued down installations. Moisture and alkalinity concerns are greatly reduced with the Free Lay System.

The Free Lay Backing System will elevate the status of the carpet installer because it will eliminate many of the reasons they are blamed for failed installations. They will be able to install more carpet in less time, not to mention that when the time comes for take-up they won't have to fight the product. This is not to say that they shouldn't be paid fairly for the skill of their trade – not doing so is an injustice. Designers using carpet with the Free Lay system will only be limited by their imaginations. As stated earlier, insets, borders, free form patterns or any imaginable layout can easily be accommodated with the Free Lay system. It can go as far as installing sections like a picture puzzle.

There is an application for this system in every market segment of the industry that can bring the value of carpet to new levels.

If you want more information on this revolutionary system call me at 1-706-370-5888 or email me at lgmtcs@optilink.us