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“PROBLEM” CARPETS AND HOW TO DEAL WITH THEM *A CONTINUING SERIES*

Not a day goes by that we don't hear from one of our 6500 customers concerning the difficulty he/she is having with a particular carpet. Now with Steam Way customers cleaning millions of square feet of carpet each week, it is inevitable that a few “trouble spots” may occur. Upon further investigation though, one can see a pattern develop that identifies recurring “trouble” carpets. That is the purpose of our discussion here. What exactly do you do with a carpet that won't come clean? Over the next few issues of the CLEANING SCENE, we are going to discuss the patterns among these problem carpets. In addition, we'll provide some practical tips on how to improve the situation

CATEGORY #1

Problem: Residential Carpets That Are Too Light For The Amount Of Soil They Are Subjected To

We refer to this as the “white is not all right problem”. With the advent of stain resist carpets, consumers are wanting lighter carpets. Yet they are still subjected to massive amounts of soiling from the “average” family. The professional cleaner is expected to get the traffic lanes to look just like the rest of the carpet. The problem isn't that the carpet is not cleaned after the professional has gone over it. Quite the contrary, the carpet is clean. Unfortunately, the traffic lanes still show due to how we see color from a carpet. The color that our eyes see is a by-product of light reflecting through the carpet fibers. The soil that collects in a carpet scratches and pits the synthetic fiber. Although the cleaner has removed the soiling, he/she cannot correct the scratches and pits. The light reflection through the fiber is changed in the traffic lanes; hence, they look different from the rest of the carpet.

What's the solution?

Light colored carpets are not going to go away. They make a room look larger and add to the decor of the home or business. The solution is in vacuuming and professional cleaning frequency. The lighter the carpet is and the more soiling and traffic it is subjected to, the more often the carpet needs to be professionally cleaned. This reduces the scratching and pitting. A good rule of thumb is that white carpets in a home with children probably need to be cleaned every three to six months. On lighter colored carpets with continuous problem soiling, more aggressive chemistry may be needed. We suggest the use of FORMULA “O” or SPECTRUM™ Traffic Lane Cleaner. These solutions are strong enough to remove most soiling, but will also allow their stain resist warranty to remain intact. Hotter cleaning solution temperatures also assist in soil removal.

CATEGORY #2

Problem: Commercial Carpets Subjected To “Oil Tracking” From Asphalt Parking Lots

Asphalt or paved parking lots are treated periodically with a creosote type oil to assist in their longevity and performance. In addition, during hot weather, asphalt parking lots “bleed” oils that are used in asphalt construction. These oils are picked up by users of the building on the bottoms of their shoes. They track these oils inside the building where the carpet literally wipes off the bottom of these shoes and collects these oils. When the cleaning contractor cleans the carpet, he/she is often faced with two difficulties. The first may be that the carpet simply does not clean up well. This oil tracking has been occurring over too long a period of time since the last cleaning. A second difficulty lies in the fact that the cleaning contractor may do a good job of cleaning the carpet, but it resoils within hours or days of the cleaning. This is due to oily residues that remain in the carpet following cleaning that attract soil rapidly from the high traffic that the commercial carpet is subjected to on a constant basis.

What's the solution?

First, understand that this problem may be an extended or permanent one. The parking lot is always going to be there. It may or may not "leak" less oil over time. The first solution lies in soil tracking control "walk-off" mats with special additives to remove oil based soils from shoes. They should be used at every entrance at least twelve to eighteen feet into the building. Second, consider periodic application with FABRICOVER® PLUS. The oil resistant qualities of this fabric protector will make clean-up and appearance better. Third, frequency of cleaning must be increased. Interim maintenance cleaning methods should be limited to bonnet cleaning or absorbent powder and should not be depended on too heavily. Regular hot water extraction with very hot solution temperatures are a must. Finally, strong cleaning chemistry is necessary. Consider the use of ENZYME TLC as a traffic lane cleaner. On problem carpets, you may want to consider adding four to eight ounces of SUPER TRAFFIC LANE CLEANER to each gallon of mixed ENZYME TLC. Aggressive agitation with a bonnet or rotary brush will help extreme problem carpets. Using a ZINGER® Power Floor Wand will also help.

CATEGORY #3

Problem: Carpet Filtration Soiling

You walk into a room. What looks to be an otherwise well maintained room of carpeting has an unsightly dark discoloration around all of the edges and near all gaps in the subfloor. It can be a commercial or residential setting. Sometimes normal cleaning procedures have almost no effect at removing this discoloration. Now everyone is unhappy. The carpet still does not look completely clean. You as the professional cleaner can't figure out why. You are dealing with a problem that has plagued carpet cleaners for many years - filtration soiling. In the past, carpet filtration soiling was just seen as a pesky problem that occasionally developed. Now, however, with all of the changes that have developed in the industry, we are beginning to recognize it as a more serious dilemma and problem.

Filtration soiling has been defined as the *"soiling of carpet under doors, draperies, furniture, or along baseboards caused by the carpet pile's filtration of soil, dust and other pollutants where air flow is restricted or channeled. It is also sometimes associated with fabric wall coverings or office dividers."* (*Cleaning, Restoration, Inspection, Safety Glossary. Cleancare Seminars, 1992*). In simpler terms, filtration soiling is simply a dark area of soiling that collects along the walls in installed wall-to-wall carpeting that makes the carpeting appear almost to have a dark stripe all the way around the room. Filtration soiling is usually identified as dark, grayish lines under doors, around baseboards, and along the edges of stairs. In Dr. Michael Berry's Book, *Cleaning For Health - Protecting The Built Environment*, he discusses another cause of filtration soiling. In discussing the needed maintenance of buildings he states: *"Stairs, landings, and elevators connect different levels of the built environment. They need to be inspected because they act as chimneys or breezeways and are paths for pollutants to move from upper to lower floors. Elevator shafts even act more like chimneys than stairwells."* What these problems have in common is that carpeting is acting as a filter when concentrations of air are being channeled through a specific part of that carpet. In normal circumstances this channel takes place at the edges of a room where there is a small gap between the wall and the floor. But, as Dr. Berry's discussion points out, any structural design that supports a funneling or channeling of air through the carpeting can lead to filtration soiling.

What makes filtration soiling so difficult to remove are the two major contributing factors - the composition of the soil being filtered and the concentrations that those soils are in. Think of a building as a breathing building. As internal and external air pressures are changed by wind, barometric pressure, humidity, forced air heating and air conditioning, and natural air movement, air moves back and forth between the inside and the outside of the building. It literally breathes - inhale, exhale, inhale, exhale.... There is a natural gap that exists between a floor and a wall. This gap varies due to materials used, quality of construction and insulation goals. Since most air pressure is from the outside inward (due to wind), a lot of air moves through this gap, and subsequently through the carpeting that is installed all the way to edge of this wall. If you will paint a mental picture of this process, it is not difficult to see how any soils or pollutants that are being carried by this air are actually filtered out by the carpet. In addition, in the case of a forced air heating or ventilation system, a gap often exists between the air duct outlet and the carpet. Therefore, the carpet is filtering out all of the air that moves through that gap. Filtration soiling often develops around these vent outlets. In addition, as Dr. Berry points out, the design of the building with natural channels or funnels (stairwells, elevator shafts, etc.) can create an airflow through a small concentrated area of carpet fibers.

The aspect of this that complicates the whole picture is what is the composition of the soil that makes up the filtration soiling. In a normal residential household, the primary airborne problem soiling would be cooking oils and greases and household dust. Every time the house "exhaled," these would be collected by the carpet. It is, however, the outdoor pollutants that really complicate things. Exhaust emissions, carbon, soot, and all of the other things that can make up outdoor air pollution are filtered out of the air by the carpet every time the wind blows or the building "inhales." This extreme concentration of soiling into a very small area of carpeting usually causes a dark stripe of soiling along all outside edges of the house. In a commercial environment, all kinds

of activities can lead to all different types of airborne contaminants and pollutants being filtered out of the air by carpeting. Once again, we are dealing with extreme concentrations. There are two potential complicating factors about this soil that may make it difficult or impossible to remove. First, it may contain pollutants which damage, change, or alter the dye structure of the carpet itself. Once this damage occurs, cleaning procedures cannot fix it. Secondly, the concentrations and prolonged exposure that this soiling gets may make a stain that is permanent. In other words, what would normally be a removable soil, is made permanent by the concentrations and increased exposure time.

So what can you do about filtration soiling? Well, ask almost any carpet cleaner who has been at it for a few years and they will probably give you their favorite “home” remedy. Truth is, there is no guaranteed way to remove all filtration soiling. We can give you some ideas that work pretty well on a consistent basis.

First, let’s look at the cleaning tool used. Obviously, a cleaning wand can only get so close to the edge of the carpet. It has a difficult time getting to filtration soiling. (So did the vacuum - that’s one of the reasons the filtration soiling developed). Many cleaners use their upholstery or stair tools which help reach the soiling somewhat. One tool that many professional cleaners use is a vacuum crevice tool which can concentrate vacuum on a small area. By spraying a cleaning solution across the soiling and providing an almost instantaneous vacuum suction, this technique has found some success. An even more effective tool is a cleaning tool designed for crevice cleaning (*Steam Way Hydro-Crevice Tool*) that provides concentrated solution flow and vacuuming at the same time. Truthfully, though, successful removal of filtration soiling lies more in the cleaning or spotting solution selected than the cleaning tool.

Conventional high powered traffic lane cleaners (*Steam Way Super Traffic Lane Cleaner, Steam Way Environmentally Friendly Formula “O”, Steam Way Spectrum Traffic Lane Cleaner*) have a great deal of success at removing some filtration soiling. In more difficult situations, many cleaners follow up conventional cleaning by treating with a volatile spotting solution (*Steam Way Spotter “101”*). This high powered cleaning solvent will dissolve many troublesome greases and oils. For more stubborn, older grease and oil contamination, a nonvolatile solvent spotter (*Steam Way Spotter “701”*) is used because it can break down and dissolve stubborn deposits. Most of these applications could be considered as conventional treatments and would qualify as industry standards for the treatment and attempted removal of filtration soiling. We have found, however, due to the complicated makeup of filtration soiling, that many times, after conventional treatments have fallen short, the application of a shampoo cleaning agent that contains solvents (*Steam Way Upholstery Cleaning Concentrate HP*), followed by aggressive agitation with a horsehair or nylon brush, and then followed by rinsing with extremely hot cleaning solution, is consistently the most effective means of removing filtration soiling. It is very important to keep in mind that there is no guaranteed way that will always remove all filtration soiling. In many cases, you can lighten it but not eliminate it. In some cases, permanent dark discoloration simply is not removable, but it certainly is always worth a try.

Some professional cleaners advocate using a product such as “Go-Jo”® hand cream. These hand cleaning solutions contain solvents that separate the oily filtration soiling from the fibers and detergents that will suspend them for removal. A Professional should keep in mind however, that these types of solutions contain lanolin (to prevent drying of the skin). These types of chemicals were never designed for carpeting and can cause rapid resoiling.

One final thing to consider, if too large of a gap exists between a floor and a wall which contributes to problem filtration soiling, before the next carpeting is installed, the owner may want to consider reducing or eliminating that gap, usually by the application of a sealant caulk. More serious construction problems would require more serious repair considerations.

As we delve further into investigations of indoor air pollution, we will probably expose more soiling and airborne pollutants that complicate filtration soiling. A list of contaminants that have been identified in indoor air is simply too long to list here. As usual, though, the carpeting is trying to tell us something. There are airborne pollutants that filter throughout the indoor environment. In the case of filtration soiling, this air is being funneled through the carpeting. The carpet, in turn, is acting as a filter. Our job is to clean that filter out. In order for us to be effective at our job, as Dr. Berry points out in many places in his book, frequency of cleaning is an important consideration.

CATEGORY #4

Problem: Newer Commercial Carpets That Won’t Clean Up Effectively

As a professional cleaner, the title of this article probably bothers you. When you are in the business of cleaning carpets, talking about a carpet that won’t come clean should bother you. But occasionally, a situation arises where anyone and everyone using all types of cleaning methods and chemistry confront a carpet that simply won’t come clean. The obvious question that has to be answered in each case is whether the carpet won’t come clean or can’t come clean. What we are talking about here is not a worn out old carpet. Or even a carpet that has not been properly maintained over a long period of time. These types of carpets, as we

have defined them, are usually commercial carpets that exhibit a tremendous amount of soiling, and even after corrective/restorative cleaning, they still don't look very good. What they share in common, besides an unacceptable appearance retention level, is usually a high level of extremely fine particle "micro-soiling" that has sifted deep into the carpet and can only be removed only by disengaging the carpet and beating it out. They are usually a low level loop commercial carpet made of olefin or nylon fibers. They are usually not problematic because of their color, and if anything tend to be darker in color. As a general rule they have not been installed for a very long time.

Now with the above described scenario, you can see the trouble that these carpets cause. The owner of the carpet is usually upset because he/she just invested a large amount of money in a carpet and it simply doesn't look very good. The person or company who is in charge of maintaining the carpet is extremely frustrated, because it goes against their very grain that this carpet would not easily clean up. The retailer of the carpet is mad because the carpet owner is mad. The carpet mill is concerned, because they have an unhappy customer and a potentially large claim. This is where the labs and technical services people at Steam Way come riding to the rescue, right? Well, not immediately, you see. That is why we are writing this article.

The first couple of investigations that we undertook surrounding problems like these, we counted it up to a strange phenomenon. However, when we started discussing this problem with our industry friends and partners, we found that there were quite a few of these carpets being encountered. Now when we say "these carpets", the first thing we want to do is eliminate the idea that we may have identified some strain of defective carpets that weren't properly manufactured. That would have been an easy solution. We have had the opportunity to have several of these carpets analyzed completely. They were properly manufactured. What they do have in common is their installation conditions, and well intentioned, but perhaps overconfident, maintenance people. These carpets usually act as if they have had some sort of oily residue left in them, but they did not respond to conventional treatments or cleaning. Blaming this problem on leftover loom oil and mill finishes from the manufacturing process has been eliminated in almost every case. Besides, loom oil is easy to remove. This oily feeling that these carpets exhibit is not corrected with conventional treatments. O.K., you say, its the cleaning method. Wrong again, pretty much. All types of cleaning methods have been used on them.

Now, we are not really sure we can come up with some proper generic name to call or identify these carpets with. But, if you are reading this article, you may have already had a light bulb go on, and your memory is saying, "I had a carpet like that." So rather than fill these pages with all kinds of highly technical, but theoretical explanations, let's concentrate on possible solutions.

Why would a carpet that is only a few months old exhibit an incredible amount of very small particle soiling? In most cases, the maintenance people were depending too much on cleaning methods and not enough on good old fashioned high powered vacuuming. There was usually a source of soiling outside the general area of the building that would contribute a great deal of insoluble soiling. This led to an incredibly high and almost immediate accumulation of extremely fine particle "micro-soiling." Add to that, the carpets had usually been exposed to one or several doses of a large amount of oil based soiling. It might have been asphalt tracking, a particular type of ice melting chemical, or a specific kind of oil that was not easily removable by conventional solvents or enzymes. In most cases, a cleaning solution that contains very high amounts of fluorochemical as a "soil resistant" additive was being used by the maintenance personnel.

The result was a carpet that would not come clean. The regular maintenance people could not make it look better. The high powered and well trained professional cleaner/inspector/corrector could not get it clean to the customer's satisfaction. These same cleaners/inspectors/correctors had been extremely successful on many assessment and claims jobs for us and others previously. Upon initial inspections that took place either in the field or by disengaging a small area and sending it to us to be analyzed, it was determined that these carpets exhibited traits that would frustrate even the very best cleaner, mill representative, cleaning chemist, and inspector.

The similarities between these carpets were all traced to the above mentioned soiling and installation conditions. In several cases, the on-site cleaners were leaving a large amount of fluorochemical residue from their cleaning agent. Instead of acting as a soil resistant agent, these fluorochemical were actually holding the soil in. By stripping these fluorochemical residues off by using extremely high temperatures in hot water extraction cleaning and aggressive agitation (either rotary or a pile brush), a minimum of two times, the carpets started to show a great deal of improvement. A special cleaning solution which we devised using two of Steam Way's cleaning chemicals (Super Traffic Lane Cleaner and Enzyme TLC) was used to remove most of the oily residue. In one case, an even stronger solution was necessary. After the fluorochemicals and oily residues that were holding in the soiling were mostly removed, the carpets began to show great strides in improved appearance. Using high powered vacuuming equipment or pile brushes with high efficiency collection bags, the level of micro-soiling in the carpet was reduced to almost none. Then a subsequent final cleaning usually restored the appearance of the carpet to its proper level. By making changes in the interim maintenance cleaning chemicals being used, redesigning their vacuuming programs, reducing their dependence upon walk-

behind hot water extraction, bonnet cleaning, or absorbent compound interim maintenance cleaning, and providing a little humble pie to overconfident on-site maintenance crews (who in most cases had pronounced the carpet by this time as defective and uncleanable), the carpets were restored to a maintainable condition and their appearance levels were greatly and markedly improved. The key seemed to be in not giving up too soon using the technology and chemistry that works on any problem soiling commercial job. For more information on this phenomenon, and the cleaning equipment and chemicals used to solve it, contact your local Steam Way distributor or call the technical services department at Steam Way International. If you are a retailer, or mill representative and need a cleaner from the Steam Way Referral Network who can work directly in conjunction with the technical services department at Steam Way to deal with such a claim, you can get the ball rolling by calling Susan Stone at the Steam Way Referral Network in Denver.

We wouldn't be telling you the truth if we said there still aren't a couple of trouble carpets out there, but we are working hand in hand with our chemists, our mill partners, and our referral network customers to solve them.

CATEGORY #5

Problem: Olefin Berber Carpets

Approaching this subject matter from the point-of-view of the professional cleaner, I believe we can provide for the carpet manufacturing industry some constructive comments. Obviously, not everything we communicate here will be received with open arms. Steam Way and its customers work hard to safely and effectively clean carpeting of all types, styles, construction, and fiber content. We try not to "play favorites" on fiber, other than relating our practical experiences. What we have learned about these carpets comes from our own laboratory research combined with the experiences of our thousands of customers in the daily operations of their businesses, our own consulting programs in reference to carpet maintenance, and the input of our outside consulting staff.

Understand that as we discuss this we are looking at it from a maintenance point-of view, recognizing fully the popularity, beauty, and appearance of Berber carpeting. Add to this the understanding that the large majority of Berber carpets, whether they be constructed of wool, acrylic, nylon, olefin, or a combination, are usually lighter in color.

In reference to the performance in the field of nylon or olefin Berber carpets, there are some strong differences. The two properties of olefin that are negatives in any carpet style are its lack of resiliency, and its affinity for oil based spills and soiling. The style and construction of an olefin Berber only exacerbates these characteristics. Olefin Berber consistently shows "wear" in traffic lanes within what is usually a very short period of time (12 to 18 months). This is usually due to the fact that the "loop" in the Berber has a tendency to "lay over" sooner in traffic lanes because of olefins lack of resiliency. Compounding this problem is the soiling characteristics of Berber. The "loop" construction makes it more difficult to remove soiling due to physical blockage of the soil as it is trying to be extracted out, and less penetration on the part of the cleaning solution. Oil-based soiling that has built-up within the olefin carpeting is often more difficult to remove because the oil-dissolving ingredients of the cleaning detergent are not penetrating the carpet as easily. In addition, the construction of a Berber carpet usually extends the drying times of the carpeting following cleaning, thus allowing for a greater chance of re-tracking soiling.

Although nylon Berbers show some level of these characteristics in Berber, they are far more resilient and usually demonstrate much less "wear" in the traffic lanes. It is also far easier to remove problem oil-based soiling from the nylon fibers.

One other thought that could apply to both nylon and olefin Berber carpets. When they are sold for stain resistancy (particular to when olefins are sold as almost stain proof), it can often cause a claim to the manufacturer simply because of the ability of the carpet to hold so much soiling. This soiling is what has been stained by the spilled beverage, not the carpet fiber, but unless that soiling is removed, the carpet appears to be stained.

Regardless of these characteristics, the professional cleaner is equipped and trained to effectively clean all types of Berber carpet safely and effectively. If they continue to rise in popularity, the professional will be prepared to properly maintain these carpets. From a long-term customer satisfaction standpoint, it would be our opinion though there will be less complaints relative to the performance of nylon Berbers than to olefin Berbers.