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## 1999 Technical Bulletins

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### **“PROBLEM” CARPETS AND HOW TO DEAL WITH THEM**

Not a day goes by that we don't hear from one of our 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 pages, we are going to discuss the patterns among these problem carpets. We'll also continuously expand and update this information. In addition, we'll provide some practical tips on how to improve the situations discussed.

#### **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 STEAM WAY 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 are some possible solutions?**

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 a water carried fluorochemical such as Steam Way Fabriccover® Plus. The oil resistant qualities of this type of fabric protector will make clean-up and appearance better. Third, frequency of cleaning must be increased. In general, 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 a high pH enzyme traffic lane cleaner such as Steam Way Enzyme TLC as a traffic lane cleaner. Another solution many have had success with is to use an Olefin Pre-conditioner such as Steam Way Olefin Plus TLC. If you continue to have problems with the yellowing not going away, then the oils have probably become oxidized over time. In this case you may want to add about an ounce of a Oxidizing Bleach/Booster such as Steam Way Formula "OBB" to each mixed gallon of your traffic lane cleaner Aggressive agitation of the traffic lane cleaner with a bonnet or rotary shampoo brush will help extreme problem carpets. Using a power wand such as a ZINGER® Power Floor Wand may also help. Some cleaners, after cleaning, run a dry bonnet quickly across the to absorb as much moisture as possible and counteract any remaining wicking oils. This final step should only be used on low level loop commercial carpets and only as long as the carpet is still moist.

### **CATEGORY #3**

#### ***Problem: Olefin Carpets Installed In A High Grease And Oil Contamination Environment***

Olefin Carpeting has many fine qualities. Its superior stain resistant performance makes it ideal for many applications. It is also usually less expensive than nylon carpets. Improvements in manufacturing processes have created many eye-catching olefin designs. Olefin does have a problem in relationship to oil based soiling however. Olefin is an "oil-loving" fiber. It easily and quickly absorbs any oil based soiling that is spilled onto it or filters out of the air into it. Although most olefin carpets are treated with an oil repelling fluorochemical treatment at the mill, this treatment wears off in just a few months or with a couple of cleanings in many cases. The problem lies in olefin carpets that are installed in commercial environments that are subject to a particularly high degree of oil based soiling. Two examples of this would be restaurants and automobile dealerships. The complaints surrounding these olefin carpets installed in the wrong environments always seem to manifest themselves because the carpet doesn't stay clean very long after it is cleaned. The traffic lanes in particular seem to soil very badly, look better after a professional cleaning, but then resoil and look very poor again, sometimes in only hours. Often, the carpet consumer sees either the carpet or the professional cleaning job as defective. Even the most conscientious professional cleaner with the best chemicals, equipment, and training, can clean the carpet and have it look good after it is cleaned, but almost immediately, the traffic lanes start to show soiling again. This problems is caused directly by the large amounts of greases and oils that exist in these environments. The carpet absorbs them in, and they are very difficult to clean out completely. Often, a very thin coating of grease and/or oil is left over the surface of the fiber. This coating that is left behind acts as a soil attractor. This situation is complicated by other factors. Most of the people who work in these environments are tracking alot of oil based soiling around. The bottoms' of the waiter, busboy, or mechanic's shoes have alot lot of oil and grease sticking to them. The carpet simply cleans off the bottom of their shoes. Also, in a restaurant, there are always cooking greases and oils floating around as airborne contaminants. The carpet acts like a filter and cleans out the air. As stated before, many times this problems ends up lying squarely in the lap of a professional cleaner or a mill claims manager. The problem started when this carpet was specified for this environment. There are, however, some solutions which can help this situation.

#### ***What's the solution?***

In this case, giving everyone a better understanding and education about the problem is probably just as important as the solution. Unfortunately, this usually includes telling the owner of the carpet that this carpet is the wrong fiber for this environment. It is not a popular thing to have to communicate, but the experience of Steam Way's customers cleaning over 10 billion square feet of carpeting has demonstrated time and time again that olefin carpets should not be installed in high

grease and oil contamination environments. Admittedly though, most of the time the carpet is not that old, and replacing the carpet is usually not an option that is acceptable to the carpet owner. The problem is not a defective carpet though. So the carpet owner has no recourse against the manufacturer of the carpet. It usually boils down to a mis-specified carpet. If I had been sold an olefin carpet for my Chinese restaurant and was told it would perform properly, I would start in getting some help from the organization that sold me the carpet. The solution to this problem is one that is not going to make anyone perfectly happy, but it usually will improve the situation. A specially designed carpet maintenance program will usually make the carpet look much better. This will increase the budget necessary for cleaning mainly due to increasing cleaning frequency.

The development of pre-conditioners specifically designed for Olefins has been one route used to attempt to alleviate this problem. Unfortunately, many of these "new" Olefin Pre-conditioners are simply high pH wall cleaning solutions with a new label. High pH and lots of solvents to dissolve grease and oil is one way to try and clean troublesome olefins. Steam Way Olefin Plus TLC is different. Remember, that Olefin is naturally water repellent. When you or I spray our favorite traffic lane cleaner on an olefin carpet, the natural tendency of the fiber is to repel the prespray. Surfactants are added to cleaning agents to help break this surface tension to allow the cleaning agent to penetrate the carpet fiber. Yet the surfactant levels in carpet cleaning chemicals have been reduced in recent years as such a strong focus was placed on leaving less residue.

When we evaluated the problems that cleaners seemed to be having with some olefins in getting them clean, one point stood out. The problem was not the chemicals ability to dissolve soiling. We could soil a nylon carpet with the same soiling as the olefin was getting and still get it clean. The problem was that the olefin fibers were soaking the oil in, and the cleaning solutions weren't getting into the fiber to do the complete job. We worked diligently on a synergistic blend of several surfactants whose job it was to allow the rest of the cleaning solutions to do their job. That is the technology behind Olefin Plus TLC.

Now let's try to solve the problem. Since olefin is oil-loving, the first thing you may want to consider once you get the carpet to a reasonable appearance level is the application of a water carried fluorochemical such as Steam Way FabriCover® Plus. The oil based soil resistance characteristics of the protector will help the olefin resist oil based soiling. To clean an olefin, we recommend the use of Olefin Plus TLC. After you apply it, agitating it in with a groomer or brush will help. Allow it to dwell 5-10 minutes. Then clean with an alkaline carpet extraction detergent. If the appearance of the carpet is still not what you desire, add an ounce of a oxidizing booster/bleach such as Steam Way Formula "OBB," to your mixed gallon of traffic lane cleaner the next time you attempt to clean it.

#### **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 these 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 olefin's 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 resistance (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.