

Encapsulation and Carpet Cleaning

Bob Wittkamp

It appears that the old adage, "what's new is old and what's old is new," is once again proving true in the carpet-cleaning world. Encapsulation, also known as crystallization, is one of the hottest "buzz words" in the market today, especially in commercial carpet maintenance. It's also a trip down memory lane to when I entered this field some 30 years ago.

When I first started "steam cleaning" carpets in 1970, there were only three extraction machines in the entire county. At that time almost all carpets were maintained using a "shampoo" process. As steam cleaning began to gain acceptance, we would sell against the shampoo cleaners by showing clients the dirty water containing the soils we had extracted from their carpet.

Shampoo cleaning remains the process of choice for most commercial cleaning. In the late 1970s there came a movement to reduce cleaning costs. Shampoos became less expensive as manufacturers switched to cheaper raw materials, leading to a shift away from the nice, dry residual shampoos of the '70s to the sticky, foamy shampoos of the '80s. Re-soiling problems and debates on the merits of the process soon followed.

Advances in shampoo chemistry introduced some five to eight years ago have resulted in changes in how shampoo cleaning is performed and perceived. Discussions on these advances usually focus on the use of polymers in shampoo formulations.

Polymers allow shampoo residues to truly encapsulate remaining soils, usually in a crystalline structure. This allows for their subsequent removal during the dry vacuuming stage of the carpet maintenance cycle. The continued success of this crystallization/encapsulation process has brought some pretty big players to the market, including at least one major fiber producer and several carpet manufacturers, as well as several cleaning chemical formulators. There are about 10 formulators currently embracing encapsulation, most of which are making claims that improved carpet appearance results from the use of their product or system; anecdotal evidence from the field would appear to support these claims.

There are a number of systems being touted for use with polymer-based products to apply the cleaning agent (shampoo) to the carpet face pile, where it proceeds to release soils and encapsulate them in the residues of the cleaning agents. Recommended application techniques range from rotary shampoo machines and rotary extraction units to using a cylindrical brush applicator/agitator, adding the product to the rinse water in a hot-water extraction system, or simply spraying it on the carpet surface with a compression sprayer.

While cleaning-agent residues are generally quite similar in crystalline structure, the brittleness of the crystal itself can vary greatly. The stronger the bond the crystal has with the carpet fiber, the more difficult it will be to separate the two. And remember, it is the removal of the crystals that directly affects the removal of the soil.

It is important to keep in mind that vacuuming is an integral part of the encapsulation process. It may take the form of pre-vacuuming performed immediately prior to the shampoo application, post-vacuuming after shampooing and drying have been accomplished, or as vacuuming as part of the daily maintenance cycle. Though many continue looking, so far we have not stumbled on a product that makes dirt "just go away."

Will encapsulation replace bonnet cleaning? Will it eliminate the need for periodic hot-water extraction? Will it have any affect on IAQ? I think that time will answer these and other questions that are bound to arise. There is no doubt that some cleaning challenges, such as cleaning in high-traffic, 24-hour settings; drying speed; operator training; equipment expense; and sticky residues will be well-met using this technique.

Many carpet manufacturers will celebrate the fact that one of the results of using

encapsulation will be an increased emphasis on good carpet maintenance in the form of regular dry vacuuming. As we are all well aware, dry soil removal is one of the keys to long carpet life and increased end-user satisfaction.

It would appear that crystallization/ encapsulation techniques are a win-win for all involved. As the fortunes of those in the carpet value chain rise with the continued and growing use of carpet, the apparent success of this system bodes well for everyone.

This may prove to be one of the greatest advances in carpet maintenance during my 30-year tenure with the industry. Only time will tell; as with most innovations, the marketplace will be the final judge.

I hope that you will benefit from my observations. Keep an open mind and see where it takes you. Until next month, see ya!

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