

ABRASION TEST

for encapsulation method



The purpose of this test will be to gather information concerning the safety of the encapsulation carpet cleaning method when used with Revive Carpet Encapsulation Pads and the CarpetMax/ Twin Bonnet 33 machines. The CarpetMax/ Twin Bonnet have a lighter head weight than a standard floor machine as well as a full floating adjustment capability that allows the cleaning head to adjust to irregularities in real time thus reducing or eliminating plowing, or



in other words forced contact between the cleaning head and high spots on floors/ carpets that are installed on uneven sub-floors i.e. cement. Test chemical used will be Surround Encapsulant mixed at 8oz per gallon with water at room temperature. The 17" Revive Carpet Pad will be brand new at the beginning of the test. The same pad will be used for the entire test. A Lindhaus Healthcare Pro will be the upright vacuum used. The brush will be set at the lowest or most aggressive position. A USB microscope will be used for the 50x pictures.

There will be 4 test carpets used in our test. A used continuous filament olefin carpet that is approximately 6 years old. This carpet is installed in our shop, and has been previously cleaned with hwe bonnet and encapsulation dozens of times as well as having one of our truck mounted cleaning vans parked on it. The other 3 test carpets are new and include a tufted tan 100% nylon, a gray 94% olefin 6% nylon blend and a greenish 36oz cute pile printed nylon equivalent to what you might see in a dining room or hotel hallway. I think that these 4 carpets will cover a large amount of the spectrum of carpet that will be encountered in the field.

The test will show the four samples with regular pictures and under 50X magnification. These two photo formats will be shown after each test. The test will consist of 12 cleanings to simulate one years worth of carpet maintenance. The test carpets will be vacuumed first. The carpet will than be cleaned with two passes per encapsulation cleaning, up and back. The carpet will be allowed

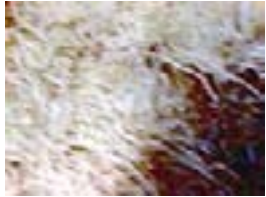
to dry, vacuumed and test repeated until the twelve cleanings have been accomplished. Pictures will than be taken after each cleaning and the test will than continue until all twelve cleanings are completed. Test equipment will be placed on a rolling cart. An indicator line will be placed on the floor in front of the test carpet pieces. The cart and test equipment can follow this indicator line and than take subsequent pictures from relatively the same area for the duration of the test. Pictures will be taken after each test, after the carpet has had time to dry and has been vacuumed. The entire test sample will be vacuumed to begin. For cleanings 1-12, only 1/2 of the sample will be cleaned and vacuumed as to have a real before and after comparison throughout the entire test. At the end of the test, the entire sample will be vacuumed and a picture taken. This will show the cleaned and uncleaned carpet side by side. Also a fiber bundle, loop or tuft will be taken from the vacuumed 1x sample of each carpet as well as a sample taken from the uncleaned part of the carpet vacuumed 12x only and from the areas that were cleaned and vacuumed 12x. this is done to compare the new and cleaned carpet as well as the vacuumed only to the cleaned and vacuumed samples.

NOTE: Test will be performed by a tech familiar with encap and bonnet type cleaning. It is assumed from the information learned from this test that it was properly performed under industry-accepted techniques. The pads will be wet/ lubricated before the pads are applied to the carpet as to prevent possible fiber damage

from friction between the contact of two dry materials. Cleaning solution will be sprayed on the carpet during the forward motion only. This will be accomplished at approximately 50 psi using an 11004-spraying tip. A proper amount of cleaning solution will not only cool the carpet and pad, it will provide lubrication that will reduce friction and should keep the carpet fibers and cleaning pads safe. As with any

cleaning method, damage can occur. It is up to the operator to understand his method and perform it properly, not only for safety, but for performance.





Test Standard



Test 1



Test 7



Test 2



Test 8



Test 3



Test 9



Test 4



Test 10



Test 5



Test 11



Test 6



Test 12



Test Standard



Test 1



Test 7



Test 2



Test 8



Test 3



Test 9



Test 4



Test 10



Test 5



Test 11

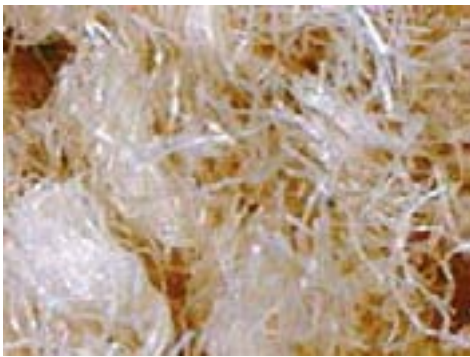


Test 6

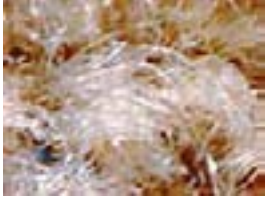


Test 12

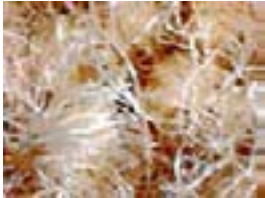
Test Standard



Test 1



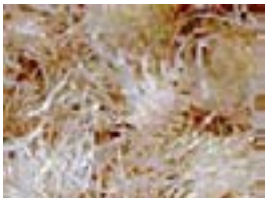
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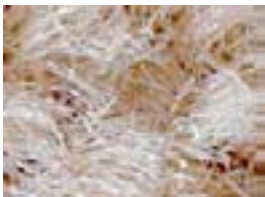
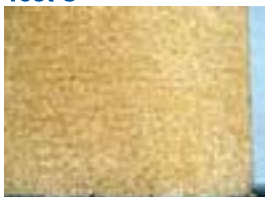
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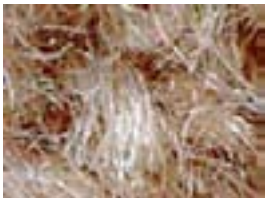
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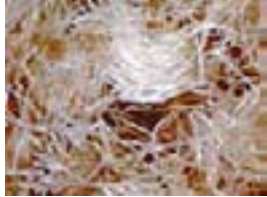
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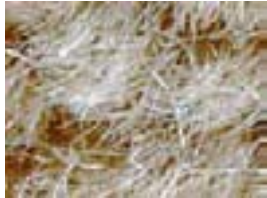
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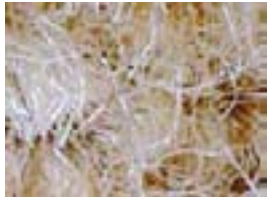
Test 7



Test 8



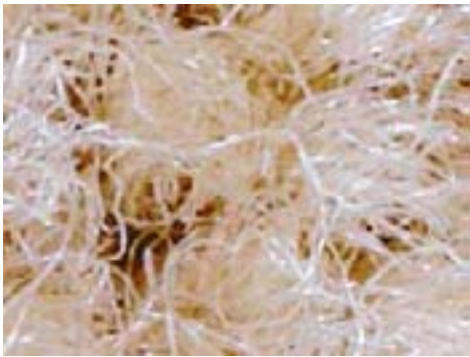
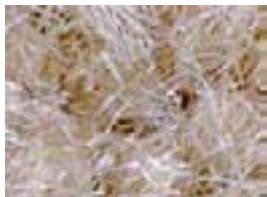
Test 9



Test 10



Test 11



Test 12

Cleaned side was on right except for the blue olefin where cleaned side was on the left



Nylon before and after



Olefin Blend before and after



100% Olefin before and after



Tufted Nylon before and after



Test standard



Vacuum 12x



Vacuum & Encapsulation Cleaned 12x



Conclusion of Test:

There was no noticeable change of hand or texture on the 4 different carpet samples. The color of the 100% olefin actually brightened. Although the two nylon carpet samples were new, they were remnants and may have had dust from the warehouse on them. This may be the reason that they appeared brighter because there was soil removed. The olefin blend appeared to look about the same. On a residential tufted type carpet or taller cut pile, I may be inclined to use a bonnet when using the encapsulation method. The good thing about encapsulation is that you can use a hard pad like Revive Pads or if you have concern about a particular fiber you can switch to a variety of bonnets.

As stated earlier, the carpets were vacuumed, a total of 13x and cleaned via encapsulation 12x with two passes per test with the front mounted sprayer applying solution only on the forward motion or stroke. There was virtually no evidence of abrasion damage from these twelve cleanings on any of the fibers tested. Meaning, if tufts or loops were pulled from the cleaned and uncleaned sections of carpet, thrown into a container, and mixed together you would not be able to tell the difference between the different samples. When cut pile fibers were viewed under 100x magnification the difference between the tips of the carpet was slight to indiscernible. This test was to simulate the effects of 12 cleanings on the 4 samples. In this test little soil was present.

Many factors can change the carpets appearance, soil, grit from concrete, foot traffic, other types of wear, atmospheric contaminants, vacuuming ECT. Of course soil itself can be abrasive and damage fibers. A vacuum in disrepair or let to sit in one spot too long can damage fibers. Any floor machine with a bonnet or pad that is not wet or lubricated properly with the correct chemical, or is improperly used can damage carpet fibers. One thing is for sure, not cleaning carpets will damage fibers. If used properly, current methods appear to be safe. The difference is the care and training that the techs servicing these carpets receive. Hot water extraction, if done properly, is a great tool but if used improperly can cause many problems such as wicking, browning, over wetting and so on. It still comes back to the skills of the servicing tech. This test was performed by John H. Klucznik. He is the owner operator of Key Floor Care & Restoration, which among other things services the carpet in a variety of commercial applications. He is also the owner of Bonnet Pro Carpet Maintenance Technology, a manufacturer of high productivity carpet maintenance equipment and supplies for carpet maintenance techs. Unable to find a report on the effects of using a hard type pad for carpet encapsulation, he devised and ran this test.