

Out Of The Test Tube . . .

Commercial Carpet Yellowing



Increasingly, we hear complaints about commercial carpet gaining a yellow cast. The following are the most frequent causes of commercial carpet yellowing:

1. Exposure to ice melt compounds, especially Calcium Chloride.
2. Transfer of asphalt coating from a parking lot.
3. Exposure to optical brighteners.
4. Direct sunlight on certain colors.
5. Mill oil (spin finish), especially on solution-dyed nylon and olefin.
6. Severe abrasive wear on certain colors.

Calcium Chloride ice melt, the type used when the temperatures are below zero, not only leaves a sticky white residue on the carpet but can turn the carpet yellow.

To remove yellowing due to ice melt, use an applicator to apply a solution of Brown Out® diluted one (1) part Brown Out to two (2) parts water, leave on the yellowed area at least 15 minutes until the yellowing has disappeared, and flush with water, using one (1) wet and two (2) dry strokes with the cleaning head.

Commercially, the most common cause of yellowing is track-in of asphalt coating from the parking lot onto the carpet, occurring most commonly in the summer from a freshly coated asphalt parking lot. It is especially visible on blue and gray carpets. If it is fairly fresh, prespray with TLS® 2000 diluted 1:10 with water, rake in if severe, and clean at higher than normal temperatures. Follow with a Brown Out flush: add water to the base unit, add two (2) ounces of

Brown Out per gallon of water, rinse the area to reduce the pH to neutral. Be sure to rinse out the base unit and hose with cleaning solution after a Brown Out flush.

If the stain is old, some mills recommend applying Mineral Spirits solvent to the area, rubbing it in with a towel or bonneting, and extracting. This can be a very dangerous procedure since delamination can easily occur. Frequently, this type of problem cannot be corrected. If the carpet is being replaced due to this problem, avoid blue and gray colors and use adequate walk-off mats. For coating asphalt, Paul Williams, Central Regional Manager for BASF, recommends the use of Jennite® J-16 coating, which seems to contribute much less to the problem.

Another common cause of commercial yellowing is the use of bonnet cleaning, especially with detergents containing optical brighteners. These are highly specialized dyes which react with the nylon and absorb invisible ultraviolet light and re-emit it as visible light. The effect is to make a carpet appear cleaner and brighter than it really is. However, the optical brighteners that are substantive to nylon gradually irreversibly turn yellow! There is NO cure for this problem!

Certain colors, especially blue, pick up a yellow cast if exposed to high sunlight for a long period of time. This is irreversible!

Because solution-dyed olefin carpet does not have to go through a rinse stage to rinse out the excess dyes, any lubricants that may have gotten onto the carpet from the tufting or other operations are not removed. With time, these take on a yellow appearance. To

remove, prespray with TLS® 2000, clean, and Brown Out flush as above.

A sample piece of blue cut pile carpet was heavily abraded recently in our lab, using concrete dust and sand to simulate long-term traffic wear. With wear, the carpet took on a gray appearance. With more wear, a yellow cast started to develop. This phenomenon is often seen in office buildings in high wear areas, such as in front of elevators and receptionists' desks, and in turn areas. The light is reflected back from the scratched surfaces in the yellow spectrum. Sometimes, you'll clean a carpet like this and think it looks great, and then the next day it looks bad again. Why? Take a new sheet of Plexiglass® and abrade it heavily. It is now, of course, quite dull. But mist on some water and it looks much better! The water fills in many of the scratches. The same thing happens to us after cleaning.

Why does worn carpet, especially blue and gray, take on a yellow appearance with wear? One of the reasons is that yellow is the most visible color, especially in dim light. At dusk, you can still see the yellow Marigolds while the blue Ageratums have disappeared into the darkness! Yellow is the last color you can see as the light dims. Why are most fire trucks now painted yellow instead of the old traditional red? Visibility!