



# THE COMMERCIAL FLOORING REPORT



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## Winter Effects on Floor Covering

We track the number of read articles to the subject matter of each issue and this subject, winters effects on floor covering, has been the most popular of any issue of the Commercial Flooring Report so we wanted to print it again, with updated information.

Not every section of the country suffers from the harsh effects of winter weather and related conditions on flooring materials but enough of you do business in those regions that you should know what the flooring will be subjected to. Other than the obvious track in of snow and water how much thought do you really give to how the flooring will be affected to protect your clients' investment? First and foremost it is important to understand the traffic into the building and onto what type of flooring the first steps will fall. With the increased use of hard surface floors of all kinds two things must be considered; the safety of the patrons of the space and maintaining the integrity of the flooring material and its installation.

So the first thing to consider is an adequate and effective entry mat system that will catch particulate matter, snow and moisture. This system should be one that can be maintained and serviced regularly. Whether that system is walk-off mats that can be changed out regularly or a more permanent type system that lends itself to being serviced, how effective and appropriate it is most important. There are a multitude of protective entry area systems that are the first line of defense against outdoor elements being tracked indoors. What to use depends on the type of facility and flooring being protected and the "level of quality" of the space. A headquarters of a corporation that has marble floors in the lobbies would more likely be a candidate for an

"in place" system at the main entries. This is typically a built in permanent system at the entry to the building. The use of walk off mats would not make a good first impression, however on the worst of days temporary walk off mats may be a necessity. On the other hand loose laid walk off mats at the entry to a grocery store that are changed weekly by a rental company or daily when they get wet would be the best

application for this type system. In inclement weather, where snow and ice are involved, walk-off mats that are changed frequently and that are capable of containing moisture and ice melt material residues would be in order. Whatever is used has to fit the need for protection of the flooring



in the facility and be safe enough to remove the detrimental elements without harming patrons entering the space. An important consideration with mat systems, especially those that are loose laid, is the ability of them to stay in place and lay flat. You don't want to protect the flooring while jeopardizing the safety of patrons coming in and out of a building; trip and fall lawsuits should be avoided like the plague. So be very conscious of the type of walk off mats and system you are using. This is a good case for a more permanent system that is easy to maintain and works effectively.

Speaking of the detrimental elements, what are they and how do they cause harm? The obvious weather related infiltrators are snow and water from melting snow or rain. The foreign infiltrators, those materials put in place by humans, are salt, sand and ice melt pellets. Sand makes a mess and the abrasion from the tracked in residue can damage hard and soft surface flooring materials. Carpet can be cut from the bottom by sand residue and hard surface flooring abraded, scratched and dulled; not to mention the cleanup required to remove sand. Salt is an effective material for melting ice and snow but using it will damage concrete; actually spalling the surface of the concrete or breaking it up. Ice melt pellets, calcium chloride, are far more effective at melting ice and snow especially at lower temperatures and this material will not damage concrete. That would seem the product to use as it eliminates ice and snow and won't damage outside surfaces such as concrete walkways. It will however wreak havoc on interior flooring and leave a very dangerous residue on hard surface floors. Calcium chloride pellets, when dissolved, leave a residue that feels like 3 in 1 oil – very slick and slippery. Not something you want on hard surface flooring. This chemical can also be tracked far into a building, not just at entry areas, but into elevators and up into the high regions of a building. It is carried on pedestrians' feet to its final resting place anywhere in the building. It may not damage concrete but it will do a number on carpet.



Because calcium chloride is hygroscopic, which essentially means it pulls moisture from the air, at its final resting place it will create a harbor for attracting soil. Dark spots will form from the attraction of soil and unless this chemical is flushed from the carpet it will continue to create heavy soiling conditions. If it exists in sufficient volume it can actually compromise the structural integrity of carpet, even weakening the laminate strength of carpet resulting in buckles and wrinkles. Not that this will occur overnight or with one contamination but left ignored it will cause damage. Realize too that calcium chloride is highly alkaline and it could cause damage to color in



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carpet as well. This material can also yellow vinyl flooring materials permanently. All this being said it is important to keep calcium chloride out of the interior of buildings or up the maintenance schedule to keep it under control. Just to give you an example of how hygroscopic calcium chloride is, it is used in canisters in closets in tropical regions, such as Florida, to prevent moisture from affecting clothing. It is spread on dirt in construction sites to keep dust down instead of water and it is the component used in the calcium chloride test to determine the moisture vapor emission rate of concrete. A very effective chemical to be sure but not something you want sitting as a residue on flooring material and, in addition, too much will also affect the vegetation outside the building as well.

The only way to effectively remove calcium chloride, ice melt pellets, from carpet is by hot water extraction. The cleaning solution used should be neutral pH and the most important consideration is to make sure the residue is flushed from the carpet which may require more than one servicing. Rock salt residue can be vacuumed up and also flushed from the carpet with hot water extraction cleaning. The dry cleaning methods which normally work well to maintain commercial carpet are essentially ineffective for removing ice melt pellet residue and the soiling it creates.

## TEMPERATURE - HUMIDITY

Cold air in the winter will cause flooring material to contract so if you see cracks where there weren't any before, seams shrinking in carpet or stiff rugs it's because they are reacting to the cold air. Couple the cold with low humidity and you can cause wood to shrink or check and if the humidity is low enough and the carpet is not effectively treated with a static protection you may feel the jolt of up to 50,000 volts of electricity passing through you when you touch a metal surface. Not only will static build up in carpet but it can also create static discharge in office furniture when occupants slide in and out of a chair. This was a problem we worked on in a communications center many years ago that affected the occupants and the equipment they were using. We've already been getting calls on this condition this year. Most carpet has dissipative

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conductors built into the yarn or backing but some don't. To keep static electricity under control the humidity levels in buildings in the winter should be kept at 55% or higher; not always easy to do. A topical application can be put on carpet but most attract soil and wear off. Not so much of a problem on dark carpets but certainly on light colors. The most effective means is simply to raise the humidity in the affected space and this may mean adding humidification into the air handling system.

## COLOR ISSUES

Something else you'll want to consider with flooring used in geographic regions subject to inclement winter weather and the detrimental conditions and elements it is subjected to is the color. If the colors used are not conducive to hiding the effects of winter soiling maintaining the flooring will be a constant battle. Everyone wants to keep their space looking clean; no one wants to be a slave to it. Consider the costs of maintaining the flooring and colors being used. Light colors may create great aesthetics initially but they can lead to very high maintenance costs and even premature replacement of the material when affected by ice melt. That's not being green or fiscally responsible.

## THINK INSIDE AND OUTSIDE

When using flooring material in areas affected by harsh winters don't just think of the inside but be conscious of the effects the outside will have on the flooring you're specifying, recommending and suggesting. Flooring products will always do what you ask of them provided your requests do not exceed the products capabilities. There is a correct product for every application you just have to know what works where and why. And in this case, be super conscious of the maintenance program you are using so you can keep the place looking clean and safe. As always, if you have questions or need help on a flooring or substrate issue, contact us, we can help you.

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