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Matting & Crushing Versus Wear

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One of the most frequent complaints and misunderstood conditions with carpet is matting and crushing. Matting and crushing has been improperly labeled for a wide spectrum of maladies however, the most common misconception is that matting and crushing is a sign of excessive wear. Consumers tend to erroneously evaluate wear on carpet in the one dimensional concept that any change in the textural intensity or structural organization of the carpet's surface is excessive wear. Trying to differentiate these two conditions for the consumer can be quite exhaustive for a dealer or mill Claims Analyst.

One needs to look no further than the typical manufacturer's wear warranty to understand that textural discrimination of actual fiber wear is deemed as an abrasive loss of fiber (usually 10% or more), and that conditions such as "tears, pulls, cuts, pilling, shedding, and **matting and crushing**" are specifically excluded. While the language used in manufacturers' wear warranties may clarify our industry's definition of wear, this usually does not satisfy the consumer's complaint or change their perception of "wear" on their carpet.

When matting and crushing occurs fibers become bent and compressed by fatigue. Each fiber type and carpet construction will show varying degrees of departure from the carpet's normal profile. Strong departures however, are generally experienced when an improper pad is specified, or when improper maintenance and soil accumulation is present. In consequence, these conditions often cause the carpet fibers to become compacted and entangled beyond any hope of restoration of appearance or recovery of pile thickness.

Consumers should understand those changes in a carpet's appearance, including textural changes (uniformity of texture) takes place from the start of use, and continues to occur throughout the life cycle of the carpet. According to the Carpet and Rug Institute's life cycle analysis, the typical residential carpet is replaced every 11 years. However, replacements are made due to styling trends or from a loss of appearance, and not from wear. The most noticeable change in appearance occurs between the use areas such as in front of a chair or sofa, in the hallway, and in the pivotal areas, when compared to the non-use areas. These changes include staining, soiling, loss of tuft definition (untwisting of the yarn, de-crimping of the fibers), a decrease in spatial density, and a tendency toward randomness. Heterogeneous properties, such as those obtained by blended yarns may be altered and tufted patterns or features may become varied. Some or all of these conditions will eventually occur with every textile floor covering. Actual fiber "wear" on the other hand is normal, and will in almost all cases never occur with today's modern synthetic fibers. They simply suffer from a gradual loss of appearance due to the aforementioned conditions. Considering this, the more informed consuming public has begun to question the meaningfulness of wear warranties. In response, many manufacturers now provide consumers with a quantifiable measurement that pertains to appearance change in the scope of their performance assessment. Although this type of analysis is based on a "square profile" it provides an excellent means for evaluating textural changes on a carpet comparison basis. Several years ago one major yarn producer did a study on approximately 300 homes with the typical family of four. According to this study, the commonly used performance assessment floor traffic count used today equated to one year of residential hallway traffic and 2 ½ years of open space traffic. However, since each end-use has its own unique conditions, the rating a carpet receives cannot be accurately equated into a certain number of years of use in all cases, nor can it always be used as a benchmark to determine appearance based on number of occupants. As an example, a retired couple could conceivably put more traffic on a carpet in a shorter period of time than a home with two working adults and two teenagers.

Although matting and crushing will eventually occur with all fiber types and carpet constructions, carpet appearance can be prolonged and matting and crushing can be slowed by installing carpet over firm cushions. Without the support of a firm cushion the face fibers of the carpet must absorb the traffic shocks on their own. Matting and crushing can also be offset by adopting a routine soil management program, and by occasionally rearranging furniture to alter traffic lanes. Carpet construction is also critical. Low, tight gauge, densely constructed carpets will maintain

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their appearance over a longer period of time than a medium or low grade construction in the same end-use. If you know a carpet is going to get heavy or more frequent use the right carpet must be specified for the demands anticipated.

In the floor care arena, there is no question that the heat and/or moisture provided by steam cleaning can significantly help restore crushed fibers. What consumers should understand however, is that even with today's advancements in fiber technology we cannot totally offset the compressible nature of textile surfaces and the effects that constant foot traffic plays on floor coverings. If this wasn't true then every carpet made from a physically bolstered yarn system would obtain a negligible or no change rating (5.0) when subjected to floor traffic testing. Even then, matting and crushing would eventually occur sometime after the floor traffic test count had been exceeded by the end-user. Considering this, one must accept that various degrees of matting and crushing will remain a normal characteristic of carpet with use. However, virtually every claim for these conditions can be postponed and the appearance of the carpet maintained for a longer period of time when the right carpet and components are selected for end-use.