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Pooling

Pooling, also commonly referred to as shading and pile reversal, is a yet to be understood optical phenomenon that can occur in all pile fabrics, including upholstery, clothing and carpeting. Pooling should not be confused with the shade differences between carpets from the same dye or different dye lots when seamed, when one breadth of carpet is seamed in an opposite direction to the other, or when texture variation between two carpet breadths create an apparent shade variation when seamed. Depending on the direction from which a carpet that has experienced pooling is viewed, the irregular pattern of the pile yarns will either be lighter or darker than the adjacent yarns that have not been altered by this occurrence. Because the areas influenced by pooling tend to look wet, pooling has also been referred to as “watermarking”.

For many years pooling occurrences were the cause of considerable speculation and debate. Many consumers considered the “highlights” associated with pooling to be aesthetically pleasing and added to a carpet’s sense of elegance, all of which began to change around 1991 when our industry started touting “trackless carpet” and these carpets came into vogue. As a result of this, any changes in the shade or luster of a carpet, be it the result of foot traffic patterns, vacuum cleaner strokes, etc., caused angst among consumers and, as a result, pooling occurrences were looked upon with altogether different viewpoint than before. A condition that was once considered to be luxurious was now wrongfully being considered by some as a carpet defect.

Trigger forces ranging from changes in ambient temperature and humidity to the influence of random changes in our earth’s polarities or those caused by fields of static electricity have been hypothesized by academia involved in think tank discussions pertaining to pooling. One particular theory associated pooling occurrences with “earth rays”, a force that has been shown to exist using a pendulum or water diviner’s rod over running water. This study suggested that pooling incidents were more prone to occur where earth rays were more prevalent.

These and other possible causes of pooling have been researched in the U.S., Germany, the U.K., New Zealand, Australia and France. To date, the one universally agreed upon finding is that due to the random nature of pooling, the mechanism responsible for its occurrences cannot be established. Without knowing the cause, pooling occurrences cannot be predicted unless pooling was observed in a previously installed carpet at the same location. What is known is that pooling is not influenced by the quality of the materials used in a carpet’s construction, any process of manufacturing, or the quality of its workmanship. Otherwise, a guarantee that pooling will not occur again cannot be given unless an alternate hard floor covering system is used in place of carpet. What is also known is that there is no means available today to remedy pooling on installed carpet once it appears.

The physical cause for pooling is due to the random reorientation of a carpet’s pile (nap) direction. The result of this condition can be seen by the biased light reflection between the more vertically oriented pile yarns, which tend to produce less light reflection and appear darker in color, compared to the lighter appearing shade caused by more light reflection yielded by the greater surface area of the reoriented fiber sides. As a result, although pooling may be present in a carpet, on-location lighting conditions will tend to be influential in regard to how noticeable the pooling condition is. This is particularly true in relationship to the direction of the main light source.

Pooling also tends to be more readily seen and reported with smooth cut-pile carpets than pattern carpets and loop-pile carpets and may be more noticeable when it occurs in carpet with a higher yarn luster because of the influence of light. However, pooling can occur in all carpet constructions and with all fiber types.

Traffic loads do not influence pooling; it is not a condition consistent with traffic patterns, and where it occurs has no bearing on seam locations, seam directions, seam boundaries, carpet cushion type or construction, or carpet cleaning and maintenance methods used. In fact, studies on pooling have shown that when new carpet was installed to replace existing carpet that exhibited pooling, the new carpet often displayed similar pooling patterns that developed within similar period of time. In other studies, carpets that previously showed no evidence of pooling when initially installed, developed this condition when they were pulled up and reinstalled in areas where pooling had been observed in the previously installed carpet.

Today's carpet is made from very durable and long lasting, synthetic fibers. Because these are vertically oriented fibers they can be influenced by forces that result in appearance changes caused by pile reorientation, including those responsible for pooling. If a consumer is unaware that pooling can develop in their new carpet and don't anticipate this happening, if it does occur will likely produce some anxiety in the process. This is especially true when it is noticed, that the change in pile orientation is inconsistent with traffic patterns. However, this condition, which was also seen on centuries old, hand made oriental rugs and is still seen today in other pile fabrics such as clothing and upholstery, is not an indicator of a carpet defect or a justifiable reason to file a claim with the manufacturer.

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