

“Tek” Newsletter

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Quarterly Newsletter

Delamination: “The Enemy Below”

Delamination is a term used in the textile industry to describe the separation of a laminated secondary backing from its primary counterpart. This problem can occur from a myriad of reasons; such as cohesive failure of the adherent (the laminate, styrene butadiene rubber) used in the coating phase of manufacturing, excessive wettings, resulting from improper cleaning, flood damage, and vapor emissions from slabs with unacceptable moisture conditions (all of which can solubilize this same SB compound; a water emulsion of rubber). Other catalysts could be improper site acclimation prior to, during, and after installation (resulting in the same wrinkle/buckle scenario), excessive vertical flex from installing over high profile cushion and/or cushion with inadequate density (improper specification), or from weak links created by improper storage and handling (such as folding carpet for long periods of time or causing wrinkles from over-hang of carpet stored in inadequately sized bins).

According to today’s historically followed standards, which were previously defined in the original HUD Building Products Standards and Certification Program for Carpet, UM44 (circa 1975), the minimum requirement for textile floor-coverings having a woven laminated secondary backing is an average 2.5 lbs/inch. Although this secular figure, (which was arbitrarily agreed upon based on industry averages at the time), is not necessarily a mantra for a carpet’s performance, it is still recognized as the benchmark by which most manufacturer’s use as a point of reference for manufacturing and claims assessment purposes.

Carpets that display laminate strengths less than an average of 2.5 lbs per inch width are often considered to be of deficient quality and are generally categorized as “seconds”.

When delamination is encountered it is most commonly witnessed in installed carpet; however, it can also be seen to a small extent in recently shipped, uninstalled goods. When this condition is discovered some individuals may view it as the choke point of their installation. The epicycle here involves contacting the mill, filing a claim, and making arrangements for the return of what is deemed to be carpet of dubious construction. Although contacting the mill to duly note such a condition is advisable (otherwise you could conceivably exonerate the mill of responsibility once these goods are installed), tossing in the towel on a particular shipment may not always be the only solution. When appropriate the more astute installer will apply a stratagem to circumvent unnecessary returns, prevent inconvenienced customers, and avoid costly claims. In this regard we have looked at a possible way to avoid these hassles by reintegrating goods that show signs of minor delamination. To do this we turned to a non-flammable, pure solvent-based aerosol spray adhesive (AAT 101), which we obtained from Advanced Adhesive Technology. Much maligned, solvent based adhesives do have a certain stigma, and the manufacturer of this product, as well as the manufactures of other solvent based products recommend precautionary measures such as providing adequate cross ventilation during application (in fact, we all should be more

cognizant of similar “Warning” and “Health Hazard” labels on the many more common household products we tend to use almost flippantly on a daily basis).

The advantages of using a product like AAT’s 101 for fast and easy repairs are many. Unlike SB compounds solvent-based adhesives are short legged (they don’t elongate), they are not “gummy” (although they retain a tack), and they are extremely water-resistant. Additionally, surfactant inverted SB latex adhesives have a much slower set time and provide a less tenacious bond than their solvent-based counterpart.

For the purpose of evaluating the feasibility of field repair for delamination we randomly selected one of our Beaulieu products from our existing inventory. We then marked off and forcefully separated the secondary backing in sections to provide us with a simulated delamination scenario. The separated secondary backing was subsequently re-adhered to this carpet specimen shortly after we applied a modest coat of the aforementioned spray adhesive to the primary backing. After allowing for a 2 hour set-up, we then submitted our sample to a local NVLAP accredited, ISO compliant textile testing laboratory for analysis, requesting the ASTM D 3936 Delamination of Secondary Backing of Pile Floor Coverings test method.

We’re proud to report that the un-tampered section of our carpet provided a laminate strength of 4.4 lbs/inch, far in excess of what is recognized as our industry’s minimum requirement for same. Equally important for the purpose of this study; however, was the average laminate strength obtained on the sections we repaired, a very impressive 6.95 lbs/inch! At a cost typically less than \$6.00 per 12 ounce can, and a coverage rate of approximately 28 yards per can, products such as spray adhesives offer an effective and affordable weapon that should be part of every installer’s arsenal.

Suffice to say that what we’ve offered here has its limitations. Because solvent-based adhesives do not extend they would not lend themselves to repair of carpet to be used in tackless installations. Furthermore, these products and these procedures will not abate rampant delamination. What they do offer is a practical and effectual means to deal with isolated areas of delamination for intended direct-glue down installations where time restraints are a consideration, the problems are minimal, and the need to feel secure about the integrity and longevity of your repairs is of utmost importance. Products as such may also be used to address incipient delamination and prolong the life of a carpet in an out of warranty installation.

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