CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2011
DateRun:	12/15/2011
Experimenters:	Jason Marshall, Timothy Weil, Mahima Tank
ClientType:	Cleaning Equipment Mfr
ProjectNumber:	Project #2
Substrates:	Textile
PartType:	Coupon
Contaminants:	Fibers
Cleaning Methods:	Mechanical Agitation
Analytical Methods:	Gravimetric, Visual, Timing
Purpose:	To evaluate the pet hair removal process of lint roller tool from large space
Experimental Procedure:	Uniform application process: Using the previously established soil loading rate, a 30” x 40” section of fleece was coated with approximately 0.2250 grams of Persian long hair cat. The bundles were evenly placed across the 1200 square inch surface. Following hair application, a plastic disposable shopping bag was then passed over the surface 10 to 15 times to better distribute the hair and impart static charge to the surface and hair. Basic hair removal process: Initial weight was made on a gravimetric balance (0.0001g) to establish the baseline weight of the tape roll. The tape roll was then attached to the holder/handle and passed across the soiled surface until no more hair was being removed from the surface. The roller was then weighed post cleaning to determine the amount of hair that was collected. The area cleaned also documented. The soiling and cleaning process was repeated. Agitator-hair removal process: Initial weight was made on a gravimetric balance (0.0001g) to establish the baseline weight of the roll. The agitator side of the unit was then passed across the surface using short strokes to complete the cleaning of the large area. Any hair that was removed from the surface area by the agitator was collected and weighed to determine removal rate. The soiling and cleaning process was repeated. In addition, the time to completely clean the surface with the agitator alone was recorded. Units Tested: Three types of lint roller tape were evaluated, two from oneCare and one from a comparative product. The oneCare rolls included the evercare Classic and the Ezpeel tab extra sticky products. The comparative product was a jumbo size lint roller from an industry leading company. In addition to the tape rolls, four devices were used. A conventional roller handle, two supplied agitator handles and a comparative pet hair removal device. Each roll of tape was normalized to provide the same size tape section for the various runs.
Results:	The three rolls were only able to clean a portion of the larger fabric. The Evercare Ezpeel extra sticky roll visually looked the best, resulting in almost five passes of hair removal. The Evercare Classic had a little more than 3 passes while the comparative tape roll was just fewer than three passes. However, when using the weights of collected hair, the comparative product picked up more hair than the other two products. When comparing the agitators, both the supplied models from oneCare resulted in higher collection efficiency than the comparative fur remover device. The comparative product at first appeared to require less time to clean the full surface area; however, to be reused, the collected hair had to be removed from the unit. Combining the two times together for the device resulted in a longer cleaning time than either of the two supplied agitators. In comparison, the two oneCare products did not need any cleaning in between runs (essential cleaning the large surface area three times without any loss in effectiveness). The Wave agitator had the highest of the three units and required the least amount of time to complete the cleaning. To completely clean the large surface area each unit completed 10 passes. This was at least three times as many passes as was possible using the tape alone. Further observations noted that the comparative product generated far more static issues than the wave and nub units. During the cleaning, hair was jumping off the fleece surface and onto the operator when the edge of the fabric was cleaned. Even though the hair was being removed from the fleece surface, it was not collected on the unit as part of the initial cleaning efficiency. Loose hair was removed from the secondary surface and applied to the total weight removed by the unit. Despite the addition, the comparative product still had lower removal effectiveness than the wave and nub.
Summary:	
Conclusion:	Mixed results were generated for the tape comparison with both the classic and extra sticky outperforming the comparative product when compared visually. Yet, the comparative product had higher hair removal rate than both of the oneCare tape products. The wave agitator model was the most effective at removing

cat hair from the fleece surface, removing 95% of the hair in under two minutes without the use of any tapes. Both oneCare products did not require any maintenance between trials and essentially cleaned the large surface area three times without loss of effectiveness.