



# Dow Delivers Long-Term Flooring Solutions

**Polyurethane Carpet Backing Technology  
Improves Assisted Living Facilities**

## **Dow Delivers Long-Term Flooring Solutions: Polyurethane Carpet Backing Technology Improves Assisted Living Facilities**

More than one million Americans live in an estimated 20,000 assisted living residences. And by the year 2020, approximately 12 million Americans will need long-term care, according to the American Association of Homes and Services for the Aging. With the rise in long-term care comes a demand for products and technologies to meet this market's specific needs. When it comes to flooring for assisted living facilities, The Dow Chemical Company has designed its polyurethane carpet backing technology to address the stringent demands of this industry.

When specifying the appropriate flooring for healthcare facilities, the issues to consider can be complex, especially when the occupants include an aging clientele. Aside from the aesthetic concerns of design and pattern, performance is a key consideration. For example, issues such as durability, maintenance and roller mobility must be addressed, as well as the flooring's effect on balance and motion.

By design, Dow's polyurethane technology offers an ideal solution to these specific flooring needs. Dow polyurethane technology for commercial carpet creates a unique molecular structure, forming a polymeric bond between the primary and secondary backing. The result is a unified composite material that improves the performance of carpet.

### **Durability and Appearance Retention**

Many of today's assisted living facilities are designed to provide residents a stylish, home-like atmosphere, in both public spaces and private rooms. Selecting a quality carpet and backing system contributes to the beauty and comfort of a space. With DOW™ ENHANCER™ Technology\* for cushioned backing or ENFORCER™ Technology for non-cushioned backing, carpet is more durable and provides improved appearance retention. Further, it is made to withstand even the toughest conditions and still offer style and comfort for years to come.

With a cushioned backing, polyurethane's unique molecular structure allows it to absorb the pounding motion of foot traffic and support the heavy weight of furniture, without bottoming out. ENHANCER™ Technology also reduces the carpet's crushing and matting over time, even in high traffic areas like hallways and lobbies. Plus, it recovers 90 percent or more of its thickness once heavy furniture is removed.

With both cushioned and non-cushioned backings, Dow polyurethane technology offers excellent adhesion to carpet yarn, maximizing bundle wrap around individual tufts. Dow technology also reduces the likelihood of delamination, which can be a major concern in intensive use situations like rolling traffic. Constant traffic can also cause carpet to pill and fuzz — a problem that is significantly reduced with DOW™ ENHANCER™ Technology or ENFORCER™ Technology. Due to its reaction bonding process, Dow technology enables the coating to penetrate and encapsulate the yarn bundle and lock in individual filaments and fibers.

To accurately measure the durability and performance of carpet backed with Dow polyurethane technology, certain tests have been conducted, including the Roller Caster Chair Test.<sup>1</sup> By simulating constant rolling action from a caster chair, the Roller Caster Chair Test assesses delamination and edge ravel, which can be the most demanding performance properties of any installation. At the end of the test, carpet samples backed with Dow polyurethane technology received high ratings, as they showed little or no signs of edge ravel or delamination. For assisted living facilities, this test is a key consideration for areas with excessive foot and rolling traffic including wheelchairs and walkers.

Evaluating the carpet's change in appearance after being subjected to performance testing is equally important. Using the Carpet and Rug Institute's Appearance Retention Rating System, carpet samples which have been subjected to high stress conditions from simulated rolling or walking action can be rated by comparing digital photography of trafficked carpet to the actual test samples to determine the level of change in carpet appearance. DOW™ ENHANCER™ Technology minimizes appearance change in carpet and performs well in high-traffic areas.

## **Spills and Odors**

To further extend the carpet's appearance, Dow polyurethane carpet backing technology includes a functional liquid barrier – a benefit for assisted living facilities where spills and odors are major concerns. The increased likelihood of spills, whether from food, drink or bodily fluids, requires certain characteristics in the carpet backing to avoid odor buildup. While proper maintenance is an essential component in dealing with prevention of odor, even best practices cannot compensate for deficiencies in flooring products. A functional liquid barrier is perhaps the most important carpet characteristic for odor prevention. When carpet is backed with Dow polyurethane technology, polymers containing hydrophobic segments impede liquid and dirt from penetrating the subfloor, thereby reducing the occurrence of wick back staining and odors. Plus it allows for aggressive maintenance programs including hot water extraction. The result is flooring that maintains the look and feel of a space even when subjected to constant spills, odors and cleaning.

## **Ergonomics and Mobility**

A carpet's backing system can also have an impact on the comfort and mobility of residents as well as employees. Compared with hard surfaces, cushioned carpet backed with DOW™ ENHANCER™ Technology may reduce the chance of slips and falls, which is a major concern in assisted living facilities. At the same time, it allows for wheeled mobility and reduces leg fatigue. In tests conducted in high-traffic lanes (up to 5,000 traffics per day), carpet backed with ENHANCER™ Technology provided greater comfort underfoot at the end of the test than the non-cushioned carpet did when new.<sup>2</sup> This finding parallels the results of studies conducted by Dr. Mark Redfern at the University of Pittsburgh, in which cushioned backing made with Dow polyurethane technology, applied to a low pile height commercial carpet, was found to be the best combination for minimizing leg fatigue.<sup>3</sup> In each case, the carpet with polyurethane precoat and a polyurethane cushion provided the best performance in the overall comfort and comfort retention ratings.

In assisted living residences, noise from neighboring rooms and hallways is a common complaint. Carpet backing made with ENHANCER™ Technology serves as an effective noise reducer, helping create a quiet environment for residents and staff. It minimizes the sound of foot traffic, absorbs airborne noise and reduces sound transmission to surrounding rooms.

From ergonomics and appearance to durability and longevity, Dow polyurethane carpet backing technology is the healthy solution for any assisted living facility. Backing made with Dow polyurethane technology is available upon request through all carpet manufacturers. For more information, visit Dow online at [www.dowcarpetbackings.com](http://www.dowcarpetbackings.com) or call 800-847-4212.

References:

1. Facility Care, Douglas Publications, Richmond, VA, 2000.
2. Fiest, J. R., Norton, M. A., and Orofino, T. A. "A Technical Approach to Characterizing Perceived Walking Comfort of Carpet." *Textile Research Journal*. (1995): 65(9).
3. Redfern, M. and Holbein, M. A. "The Effect of Flooring on Muscle Response During Locomotion." Research report, Human Movement Analysis Laboratory, University of Pittsburgh, Pittsburgh, PA, 4/3/1994.

\* To offer these benefits, ENHANCER™ Technology must be used together with a polyurethane pre-coat.

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Published October 2006

