



# Dow Lays Down the Law for High-Performance Carpet

**Polyurethane Carpet Backing Technology  
Improves Government Facilities**

## **Dow Lays Down the Law for High-Performance: Carpet Polyurethane Carpet Backing Technology Improves Government Facilities**

Whether it's at the local, state or federal level, carpet in government facilities must meet a strict set of requirements necessary to serve both employees and the public. Today's government buildings need carpet that offers durability and improved ergonomics. Plus, flooring must often meet this industry's very specific sustainability demands, including compliance with federal policy.

That's why the high performance of carpet backing made with polyurethane technology from The Dow Chemical Company is the natural choice for any government or public space. DOW™ ENHANCER™ Technology\* for cushioned carpet backing or ENFORCER™ Technology for non-cushioned carpet backing offers quality flooring solutions that are ideal for government facilities. 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. Backing made with Dow polyurethane technology is available upon request through all carpet manufacturers.

### **Durability and Budget**

Carpet in government spaces and public buildings, such as airports, must withstand issues like high foot and rolling traffic, spills and heavy loads – all while retaining its appearance for years. Dow polyurethane backing technology is designed to create a more durable, longer lasting carpet. Polyurethane's strong adhesion to carpet yarn maximizes tuft bind performance for the life of the carpet. This helps minimize edge ravel and disfiguring snags and pulls, even in a government building's most intensive use situations. Plus, it enables carpet to withstand heavy foot traffic and reduces the likelihood of delamination (a common problem in settings with rolling traffic).

By extending the carpet's life, Dow polyurethane technology can also extend government budgets, as demonstrated by research conducted by Brigham Young University. In this independent study, carpet backed with ENHANCER™ Technology resulted in significant savings through extended life cycle, decreased maintenance costs and minimized business interruption from replacing carpet.<sup>1</sup> According to the research, it was estimated that BYU's 2.4 million square feet of carpet backed with Dow polyurethane technology saves the university nearly \$365,000 annually.

### **Appearance Retention**

Due to budget constraints and life cycle costs, carpet in government buildings may need to retain its appearance for years on end before being replaced. Backing made with Dow polyurethane technology is designed to help carpet continue to look great even in heavy use conditions. 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 pile crushing and matting over time, which is especially effective in high-traffic areas like hallways and

public spaces. In addition, constant traffic can 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 further extend the life and appearance of carpet, Dow polyurethane technology includes a functional liquid barrier. 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, such as hot water extraction.

## **Ergonomics**

Government facilities must take the lead in meeting the highest standards of ergonomic design. Part of that ergonomic design is ensuring that employees and visitors are comfortable. Carpet with improved ergonomics offers the potential for increased employee productivity and satisfaction. Made of high-density polyurethane, ENHANCER™ Technology adds comfort underfoot. It reduces heel-strike force and leg muscle response, two prime causes of standing and walking 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>

ENHANCER™ Technology also affects employee comfort and efficiency by helping reduce noise levels. Carpet backing made with ENHANCER™ Technology minimizes the sound of foot traffic, absorbs airborne sound and reduces sound transmission to nearby rooms.

## **Sustainability**

Selecting sustainable flooring products is an important factor for government agencies, since they are encouraged to select bio-based products whenever possible, according to provisions of Executive Orders 13101 and 13134 and the 2002 Farm Bill. Universal Textile Technologies developed and manufactures BioCel™ Polyurethane Backing Systems which utilize DOW™ ENHANCER™ Technology and ENFORCER™ Technology. BioCel backing is made with recycled content and a renewable resource (soybean oil), which helps with meeting the federal government's environmentally preferred product purchasing programs. BioCel backing can also contribute toward meeting many state and local environmental objectives including the California Gold Carpet Standard. The end result is polyurethane backing technology that not only offers high-performance features, but also helps comply with government environmental objectives.

From sustainability and ergonomics to durability and performance, the rule of thumb for government facility flooring is carpet backing made with Dow polyurethane technology. For more information, visit Dow online at [www.dowcarpetbackings.com](http://www.dowcarpetbackings.com) or call 800-847-4212.

References:

1. Campbell, Jeffrey (2000). BYU's CNA Center Extends Life of its Campus. Facilities Management Journal, May/June., 53.
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



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