UNIVERSAL
TEXTILE TECHNOLOGIES

The Ergonomic Benefits of Universal Textile Technologies' Products

BioCel™ Polyurethane Backing Systems

EnviroCEL™ POLYURETHANE BACKING SYSTEMS

Comfort Benefits

The average person spends most of the time indoors — with a large portion of that time in the workplace. Worker comfort impacts a range of critical issues, including morale, productivity, and healthcare costs. In retail interiors, it is widely accepted that occupant comfort is directly related to shopping time and profitability.

The Savings

A good rule of thumb is that one minute per day in the workplace has a value of approximately $100 per year, according to ergonomic consultant and author Dan MacLeod, CPE.[1] Given this estimate, it is easy to understand that even a few minutes per day of lost time due to fatigue — when multiplied across an entire workforce — can represent a significant cost to a company. The justification for the ergonomic upgrade to carpet cushion is made clear.

BioCel™ and EnviroCel™ polyurethane cushioned technology provides inherent ergonomic characteristics that directly impact worker and occupancy comfort levels, perhaps as great as any other interior product.

Reduces Muscle Fatigue

Tests conducted at the University of Pittsburgh show that, compared with a conventional directglue down broadloom installation, polyurethane carpet backing — in combination with a low pile commercial carpet — reduces response in the soleus muscle up to 24%.[2] Fatigue in the soleus muscle is considered to be a major source of standing and walking fatigue.

In this study, measurements of muscle activity were made as subjects walked over a variety of carpet and cushion combinations. In fact, each subject completed 10 replicated tests with a total of 13 carpet/cushion combinations, for a total of 130 tests per subject. The flooring surfaces tested included bare floor, carpet with no cushion, and carpet over cushions having a wide range of density and hardness. The carpets tested included both low and high pile products. Comparing all flooring combinations and all muscles tested, the low pile carpet with polyurethane carpet backing resulted in the lowest- and therefore, the best -responses.

Substantiating tests conducted by The Dow Chemical Company confirm that a human heelstrike on products with polyurethane cushioned carpet backings typically generates half of the impact force of conventional carpet products.[3]

Specification

As the marketplace continues to value the ergonomic impact on productivity and employee satisfaction, a decision to specify BioCel and EnviroCel polyurethane can be made with the confidence of a proven technology.

1. MacLeod, D. “How Business Can Increase Profits with Good Ergonomics.” www.ergoexpo.com/new/increase_profits.html. February 22, 2001. 2. Redfem, 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, April 3, 1994. 3. 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).

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