

Work Out or Relax with SunMate

With its variety in pressure qualities and its ability to absorb impact, SunMate makes an ideal cushioning device for exercise machines. One customer recently ordered SunMate for use on weight lifting machines and abduction machines. Plans for a lumbar support are in the works. SunMate sheets have also been used for workout and yoga mats. For those who don't have the time or money to work out, squeezing a Pudgee ball is a quick, easy, inexpensive, not to mention healthy way to relieve stress.

SunMate has proven itself in many high-impact, performance-demanding situations, but one of its greatest properties is shear comfort. When you need to relax, you need a comfortable environment. And there's probably nowhere on earth people need to relax more than at the dentist's office. Good news! At least one supplier of medical equipment is looking at SunMate for cushioning dental chairs to help make the experience a little more pleasant.

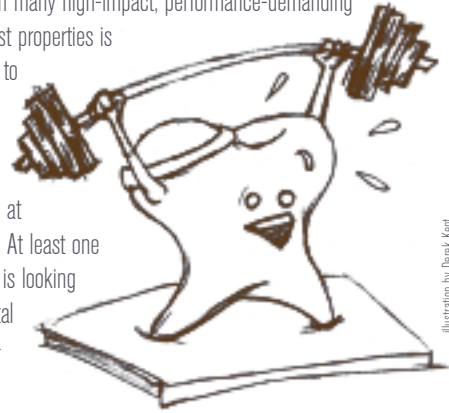


Illustration by Derek Kent

Impressions, Dynamic Systems' newsletter, is published twice a year and is available to customers free of charge. It presents useful information on new product development, company announcements, project updates, product applications, and study results from product tests performed in-house and by other institutions.

Holiday Closing

In every department, employees at DSI have been working hard for customers and have more than earned a long Christmas break. We would like to thank you, our customers for your loyalty, and ask that you plan your orders around the upcoming holidays so we can ship materials to you in a timely fashion. Have a safe and happy holiday season and a prosperous new year.

DSI Holiday Schedule

Dynamic Systems will observe the following schedule for the Christmas holiday:

Production	December 24-January 2	closed	
Office	December 24	open	8am-noon
	December 25-26	closed	
	December 29	open	8am-4pm
	December 30	open	8am-4pm
	December 31	open	8am-noon
	January 1	closed	
	January 2	open	8am-noon

Normal operating hours will resume Monday, January 5, 2004.

Impressions

A newsletter from Dynamic Systems, Inc.

SunMate & Pudgee
specialty cushion materials

Autumn/Winter 2003 Vol. 11, No. 2

FIPS Applications

The Gift of Mobility

Wayne Flowers is a young man from Angier, North Carolina. He has been disabled his whole life, born with physical deformities that prevent him from sitting or standing. When Wayne was younger, his older brother Gerald was able to carry him or transport him in a wood and canvas chair to go places. After Wayne grew too big to carry, his only trips out of the house were to doctor's appointments transported by the rescue squad. It has been almost 20 years since Wayne has been out just for fun.

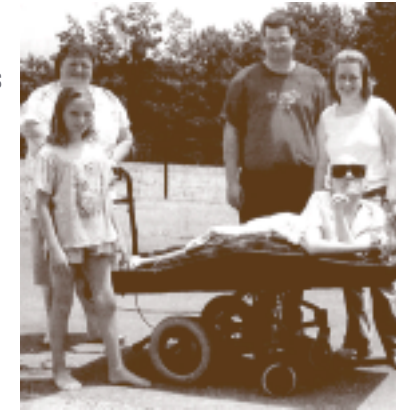
This year, for his 46th birthday, Wayne received the gift of mobility. Tim Williams, vice president of Rehab Solutions/Reliant Care in Fayetteville, North Carolina, presented Wayne with his own custom-built chair. It took four months to complete, but Rehab Solutions came through on its promise where other companies failed. Tim constructed the chair from a wooden box on a wheeled metal frame. He used the Foam-In-Place Seating (FIPS) system to mold the cushion surface on which Wayne lies. It took 2 FIPS units to custom-mold a full-length, soft cushion that provides maximum support for Wayne's body. The upholstered insert is slightly tilted to allow gravity to relieve pressure on the body.

Wayne is described by many to be an upbeat person who always has a positive attitude in spite of his situation. With this in mind, Tim made it his personal goal to have the chair finished by Wayne's birthday. When Wayne's family presented him with the new chair, he exclaimed, "Holy cow! You didn't say you were coming. You said next week...But I'm ready to go!"

The last time Wayne saw a movie at a drive-in was in 1988. On his list of immediate destinations are the video store, mall and bookstore. He said, "I've never been shopping. I've just seen it on TV...I want to do fun stuff...I'm ready to boogie!" The Flowers family is excited about Wayne being active in the community again. Gayle Flowers' next goal is to procure a van so they won't have to depend on others for transportation. Once they have a van, the family plans to take Wayne to Florida so he can see the ocean for the first time.

It took the combined effort and coordination of many caring people to improve Wayne's quality of life and give him the option of mobility. Among them are Mildred Riley, director of the Community Alternative Program for Disabled Adults; Lila Lanier and Judy Maida of Affinity Health Services, provider of Wayne's home health care; Tim Williams and Mark Buckley of Rehab Solutions; and the members of the Flowers family, who prefer to look after Wayne themselves, instead of putting him in a nursing home.

After the presentation of the chair, Wayne carefully settled in, put on his sunglasses and made a statement the Flowers family is sure to hear many times in the months ahead, "See you in a little bit, I'm going outside."



Wayne Flowers poses with his family and the new chair he received for his 46th birthday.

Independent photos/Nancy Manostitz



photo courtesy of Gayle Flowers

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Product Questions?

If you have an idea for using SunMate products, but are unsure of how to proceed; or if you have begun a project, and have reached a problem area, give the DSI technical staff a call. Our staff will help you determine the best material for your use.

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NASA Balance Floor

SunMate for Science

Astronauts who spend several months at a time in space flight have difficulty readjusting to a gravity environment upon returning to Earth. It typically takes them about 10 days to fully regain their balance and coordination. Researchers at NASA have devised a study to try to understand the effects of long-duration space flight on balance, mobility and eye coordination. In the study, astronauts take part in a series of experiments which includes navigation of an obstacle course set up on a floor of 4" SunMate.

It is a challenge for the astronauts to walk on the SunMate surface because the cushion material gives underneath the body's weight creating a sense of instability. The test is designed to push the human balance system by creating an environment where the astronauts must focus on coordination, exercising the mental and physical skills researchers need to measure. The soft, cushion surface also protects the astronauts from injury should they fall during the test.

Members of the Expedition 5 crew underwent this series of balance tests immediately after a 6 month long orbit aboard the International Space Station. When it became necessary to reroute the reentry of U.S. astronauts, the floor was airlifted via jumbo-jet from Kennedy Space Center to Russia. Since then, the crews of Expeditions 6 and 7 have also been tested. It is hopeful that the results of these and future studies will lead not only to helping astronauts recover more quickly from space travel, but also to devising a treatment for people who suffer from balance and coordination problems due to birth defects, illness or aging.



photo courtesy of NASA

Letter of Appreciation

Happy Customers!

Dynamic Systems, Inc. is a small family business which has been in operation for 35 years. Remarkably, in all that time, we have never had to do much marketing to promote our products. Our customers seem to be our sales reps. This is due in part to our dedication to providing quality performance products and commitment to meeting customer needs. Most new customers find DSI and SunMate by referral. Since the creation of the company website 5 years ago, it is more common for customers to find SunMate and Pudgee online.

DSI received an e-mail from one such individual who happened upon the website after typing in the keyword "cushion". Dana Ashey's letter of appreciation rejuvenated our dedication to continue providing a product that can improve the quality of life for others. He writes:

"I bought your [SunMate] cushion over the net for my manual chair which I use for flying to Maine for vacation each year because my power chair is too much trouble. I used to have skin breakdown every year which would ruin my trips. I want to tell you that [SunMate] is so comfortable...it didn't even make a red mark on my bottom like people get after sitting for long periods of time. I will recommend this cushion to every wheelchair user I know - and I know plenty having been a quad for 24 years. I have had many expensive cushions throughout the years and none have compared with yours. If you ever advertise, I will gladly be a spokesman for you. Again, thank you for making such a wonderful product...I picked you because of price and I'm very happy. It was well worth it."

Foam-In-Place Prosthetics

SunMate for Medical

Steve Nicholls with Otto Bock Healthcare, England has been working with Liquid SunMate Foam-In-Place for use with prosthetic arms. His design is specifically for amputees missing an entire arm from the shoulder joint. First, he constructed a special plaster mold to form the foam shoulder attachment for the prosthetic. Then, he mixed Liquid SunMate and poured it into the mold. Once the foam cured, he trimmed and sculpted it to fit the client. A modular arm designed to fit over the foam cap is currently being manufactured.

SunMate was chosen to prevent friction between the skin and the prosthetic and to create a soft, comfortable, flesh-like interface. Nicholls discovered that spraying a flesh tone pigment directly on the material can create a natural look and feel. Other benefits to using Liquid SunMate include the open-cell structure of the cured foam which makes it breathable, preventing heat buildup. It is also versatile and easy to use. One unit makes several small molded parts. Using Liquid SunMate for this type of application is a creative, practical, and affordable solution.



photo courtesy of Steve Nicholls

Cushion Covering Service

FIPS Covering Service

A fabric cover on a Foam-In-Place insert creates a clean, finished look and increases the life of the cushion by protecting it from wear and tear. Waterproof coatings and fire-resistant (FR) surface treatments may be used to improve cushion durability and client safety. DSI offers the following covering options:

Do-it-Yourself Covering & Coating Accessories: DSI sells all the materials necessary for do-it-yourself fabric covering, waterproofing, and FR coating. DSI offers interlock knits, waterproof coatings, FR waterproof coatings and FR fabrics. Do-it-yourself fabric covering details are explained in the FIPS instructional video.

Finishing Services: Send your insert to DSI for fabric-finishing and/or waterproofing. The completed insert is usually returned via UPS within 5 business days after receipt.

Laminating Service: DSI will trim, grind, and laminate your FIPS insert with a 1/4" layer of SunMate. This creates a smooth, even surface for applying fabric or waterproofing and enhances seating comfort.

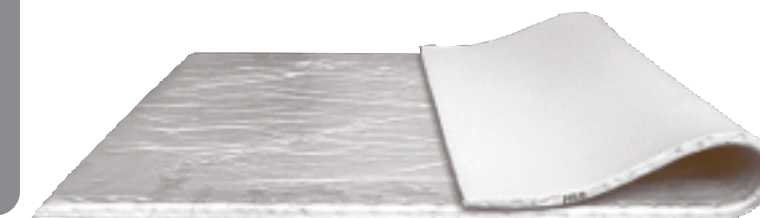
Fabric-Finishing & Waterproofing Service: DSI uses an interlock knit for fabric-finishing FIPS inserts. It comes in a variety of colors and is permanently attached to the insert contour using spray adhesive. DSI waterproofs FIPS inserts with a clear, latex-free sealant that is safe for skin contact and is resistant to odors. With a waterproof coating, the insert is easy to wash and may be sterilized using rubbing alcohol, steam, or hot air. Call for price details.

SunMate Premium Bottom Cuts at Reduced Prices!

Limited Quantity!

A limited quantity of SunMate Premium Bottom Cuts is being offered at reduced prices until they're gone. DSI is making space for new inventory. The sheets cut from the bottom of the SunMate buns are of such high quality, the company would like to see them put to good use. This is an excellent solution for those operating on a budget. Bottom cuts have a light skin with slight wrinkling and some thin air pockets on one side. The opposite side is first-quality foam. (See photo.) Some suggested applications for this material are: FIPS base foam for seat and/or back cushions, padding for foot boxes, adduction, abduction, or arm troughs, camping mats, exercise mats, mattress overlays, and more. Bottom cuts are available in sheets or cushions in soft, medium-soft or medium support pressures. Please call customer service for pricing or check the website at www.sunmatecushions.com/special_offer.htm.

Available sheet sizes:
37" x 82" x 3/4" & 37" x 66" x 3/4"



Fire Barrier Stretch Fabric

New Product

DSI offers coating options designed to make SunMate and Pudgee resistant to flame in a fire. The coatings DSI offers are non-toxic and allow the cushions to meet stringent fire codes. The newest addition to DSI's fire-resistant coatings is the Fire Barrier Stretch Fabric. The Fire Barrier Stretch Fabric is a highly-flexible, rib-knit with four-way stretch. It is woven with modacrylic, fiberglass and polyester fibers that are inherently fire-retardant. Washing will not destroy the fabric's fire-retardant capability.

To create the most effective fire barrier, DSI recommends adhering the fabric to the cushion surface with a silicone RTV adhesive. This also provides a waterproof, durable, long-lasting adhesion. Finally, covering the cushion with a slipcover creates an aesthetic appearance.

Other options available for making SunMate and Pudgee fire-resistant include the SIL-FR coating, a waterproof fire-retardant coating, and the Nomex® fabric cover.

Benefits of the Fire Barrier Stretch Fabric:

- stretches to conform readily to body contours
- does not detract from cushion's support properties
- is heat and flame resistant
- does not melt
- decomposes between 700 and 800°F

Nomex® is a registered trademark of DuPont.

Winter Heating Tips for FIPS

EYE

As autumn progresses and the winter months approach, cold temperatures can affect the chemicals in the FIPS packs during shipping. Check the FIPS chemicals thoroughly the DAY BEFORE you plan to pour an insert. If the containers are cold, or the chemicals look thick, cloudy or crystallized, use the following heating instructions to bring the chemicals back to the appropriate state. This insures easier mixing, and the best cushion quality.

Crystallized Iso

As Iso gets colder, it begins to form tiny crystals which impede its ability to react. The damage is not permanent, so the Iso should not be discarded. Crystallization can be easily reversed by following these steps:

For Crystallized Bowl Pack Iso

- Loosen the lid** and place the bottle of Iso in a pot of water that has been heated to 120-150°F. Heating at this temperature dissolves the crystals, removing the cloudiness.
- Leave the bottle in the water for 10-20 minutes, until the Iso clears.
- Take the bottle out of the hot water bath. It must be allowed to **return to room temperature before using.**

For Crystallized Bag Pack Iso

Due to the foil packaging, you cannot see if the Iso in the Bag Pack has

crystallized. During the winter season, it is always a good idea to soak the Iso section of the Bag Pack in a hot water bath before use. This insures chemical consistency.

To heat the Iso in the Bag Pack, simply follow the instructions "For Crystallized Bowl Pack Iso," submerging the Iso section of the bag in the hot water bath. Remember, the heated section must **return to room temperature before using.**

Cold, Thick Polyol

The Polyol may also become cold and thick during shipping. By placing the Polyol container in a hot water bath, you can bring it back to a consistency which is easy to mix and will result in the best cushion quality. Just follow the instructions for heating the Bowl or Bag Pack Iso. Remember to let the heated chemical return to room temperature before using it.

REMINDERS:

- Never heat Iso, or any of the FIPS chemicals, in a microwave, over direct heat or over an open flame.**
- Always allow chemicals to return to room temperature before using.**
- Always inspect FIPS packs before pouring an insert.**