



Cushioning

Gasketing • Sealing • Case Liner • Packaging • Drainable Seating

General Description

FXI flexible cellular plastics are high technology polyurethane foams designed to perform a variety of specifically engineered cushioning functions when fabricated into parts, as well as other cushioning related functions including gasketing, sealing, positioning and spacing applications. For maximum utility, the foam capabilities can be extended by increasing density and/or the addition of functional characteristics through post-processing, including reticulation, coating, laminating, felting and other special techniques.

Applications

- Comfort cushioning for stereo earphones
- Speaker surrounds
- Goggles
- Orthopedic soft goods
- Cycle seats
- Automotive gaskets and seals
- Sealing and interior trim
- Carpet anti-skid cushioning
- Supermarket meat/produce display pads

Polyurethane foams can also be ideal for low-pressure gasketing and for dust, light, vapor or water seals in appliances, electronic equipment, automobiles, trucks and aircraft.

It is also used as “spring” media for pushbuttons, pressure pads for photographic film packs, copy machine components and friction rollers.

By varying density and/or Indentation Force Deflection (IFD), polyurethane foams can be a cost effective packaging material.

High-end outdoor furniture and boating manufacturers have found a reticulated, coarse pore polyether foam to offer unsurpassed drainability, durability and comfort in seating applications.

Benefits

- Low permeability for seals
- Controlled permeability for breathable gaskets
- Ease of fabrication
- Light weight
- Dielectrically Sealable (PVC coated only)
- Excellent shape retention
- Resistance to wear and abrasion
- Mil spec certified.

**information subject to change without notice*



Cushioning & Sealing Foams

SIF® Foam

SIF® is a reticulated flexible polyurethane foam, characterized by a three-dimensional skeletal structure of strands which provide 97 percent void space. With controlled pore sizes ranging from 3 pores-per-linear-inch (coarse and abrasive) to 110 pores per linear inch (soft and downy), it offers outstanding uniformity and predictability, in cushioning applications

Applications

- Stereo earphone cushions
- Motorcycle/ski goggles
- Limb splint padding
- Surgical head support
- Breathable seals
- EKG pads
- Prosthesis padding

Custom Foam

Custom Foam is a non-reticulated flexible polyester polyurethane foam also available in 3 to 110 pores per linear inch (ppi). It can be shaped and colored to meet a broad range of requirements.

Custom Foam has a k factor of $0.25 \left(\frac{\text{BTU} \cdot \text{in}}{\text{ft}^2 \cdot \text{°F} \cdot \text{hr}} \right)$ and can be used where thermal insulation must be flexible, resilient and lightweight.

Aesthetic Foam

Aesthetic Foam is a fine pore, hole free polyether polyurethane with an ester-like look and feel. Aesthetic Foam can be used when the environment demands an ether and appearance is critical.

Applications

- Case lining
- Protective packaging
- Low pressure light and dust seals
- Weather stripping
- Automotive gaskets
- Athletic equipment padding
- Electronic equipment shock mounts
- Pushbutton “spring” padding
- Film pack “pressure pads”
- Home permanent Elastic end wraps
- Appliance gasketing

UL Recognized Foams

Several grades of UL 94 HF-1 recognized foams are available in either polyester or polyether grades. Polyethers and Low Perm should be selected when a more hydrolytically stable product is desired. The advantages of polyester foams include stronger physical properties and in the case of Pyrell® Foam, an intumescent system to retard flammability. Samples of Pyrell® have retained their flammability classification even after aging under ambient room conditions for 10 years.

Applications

- Seals
- Appliance gaskets
- Thermal insulation
- Protective packaging
- Electric outlet seals

Custom Felt

Custom Felt is manufactured by compressing 90 ppi Custom Foam under time, heat and pressure to impart a permanent compression set. It is easy to work with, and can be easily cut, glued or shaped into unusual or curved configurations, and offers a wide selection of either firm cushioning material or low-permeability gasketing product. Polyther foams can also be felted and offer the option of controlling resilience

Applications

- Copy machine gaskets
- Automotive air/heater systems
- Sanding block cushioning
- Automobile armrest padding
- Dust and light seals
- Shoe insole cushion

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Table 1: Typical Physical Properties

■ Typical Physical Properties ¹								
	Density (pcf)	Tensile Strength (psi)	Ultimate Elongation (%)	Tear Strength (pli)	50% Compression set (%)	Compression Force Deflection (psi)		Flammability
						25%	65%	
HYFONIC® Foam	1.9	17	190	2.2	3	0.55	0.90	UL 94 HF-1
ARESTO™ 2.0 Foam	1.9	25	260	3.2	5	0.55	0.90	UL 94 HF-1
ARESTO™ 4.0 Foam	3.7	24	340	3.1	3	0.60	1.20	UL 94 HF-1
ARESTO™ 6.0 Foam	5.8	37	480	4.5	4	1.05	2.40	UL 94 HF-1
DRI-FAST® Family	2.2	10-20	100-150	2.5-3.5	3-20	15-70 ²		MVS3302 and CALTB117 Available
UltraFine Family	2.0-6.0	25-34	325-400	2.5-3.5	3-5	0.45-0.95	0.80-2.50	
High Density Ethers	4.0-6.0	50-65	100-140	2.0-2.5	3	2.5-3.5	-	
High Density UL Ether	4.8	14	140	1.0	3	0.7	1.3	UL 94 HF-1

¹ Tested in accordance with ASTM D 3574. Not to be used as a specification
² Indentation Force Deflection

PVC Coated SIF®

PVC-Coated SIF® is a reticulated flexible polyurethane foam coated with polyvinyl chloride. The coating helps to preserve the open-pore foam structure without increasing resistance to airflow. By adding pigments to the vinyl coating, a wide range of intense color is possible. PVC-Coated SIF® is more resistant to chemical attack and has unusually high strength for a low-density foam material.

Applications

- Decorative packaging
- Supermarket packaged meat and produce displays
- Air filters

Packaging Applications

FXI offers a range of polyurethane foams for Mil PRF-26514G requirements. In addition, non-Mil spec packaging /cushioning foams are available. Dynamic cushioning curves can be provided upon request.

Sealing Foams

Low Perm foam has a low air and vapor permeability that can be ideal for many applications requiring low pressure gasketing and where higher priced materials are over-engineered. Applications include air duct damper gaskets and dust and vapor seals for appliances and data processing equipment. SuperSeal foam offers both resistance to water leakage and an open cell, low compression set foam.

FXI – Committed to Innovation, Service and Quality

For over 50 years FXI’s technology has been leading the way to new and innovative applications for polyurethane foam solutions. We have one of the largest R&D centers and hold more patents than most companies in our industry. Across an increasing range of markets and applications, our team is ready to help you solve your most complex problems. With manufacturing facilities across the country, FXI is there when you need us – ready to deliver the highest quality products to help your business grow.

IMPORTANT NOTICE REGARDING FLAMMABILITY— All polyurethane foams including combustion modified foams will burn and generate smoke and gases. Performance conditions and corresponding data refer to typical performance in specific tests, such as UL-94 and MVSS-302, and should not be construed to imply the behavior of this or any other product under other fire conditions. All data regarding these products were obtained using specific test methods under controlled laboratory conditions intended to measure performance against specifications. Due to the great number and variety of applications for which FXI products are purchased, FXI does not recommend specific applications or assume any responsibility for use results obtained or suitability for specific applications. FXI warrants its products only to direct buyers. (See FXI’s Standard Terms and Conditions of Sale for FXI’s warranty.) IN NO EVENT SHALL FXI BE RESPONSIBLE FOR ANY CLAIM IN EXCESS OF FXI’S SALE PRICE OF THE PRODUCT TO WHICH THE CLAIM RELATES.

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