

## *Acoustical Functions*

*Absorbing · Dampening · Acoustical Transparency*

### **General Description**

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Foamex acoustical materials are designed to perform a number of specific and seemingly opposite acoustical functions...either reducing sound levels, or passing sound undistorted and undiminished...each determined by both the basic design of the foam and its method of application. Certain non-reticulated foams are ideal for sound absorption and attenuation. Reticulated foams can absorb sound very effectively or can be completely acoustically transparent. Noise absorption applications include: commercial aircraft ventilation ducts; headliners and back panels for tractor cabs and off-road vehicles; data-processing equipment; portable air compressors and power units; appliances; snowmobiles; as well as headliners and panels for automobiles.

Sound fidelity applications include: stereo speaker grilles, earphones, and microphone covers.

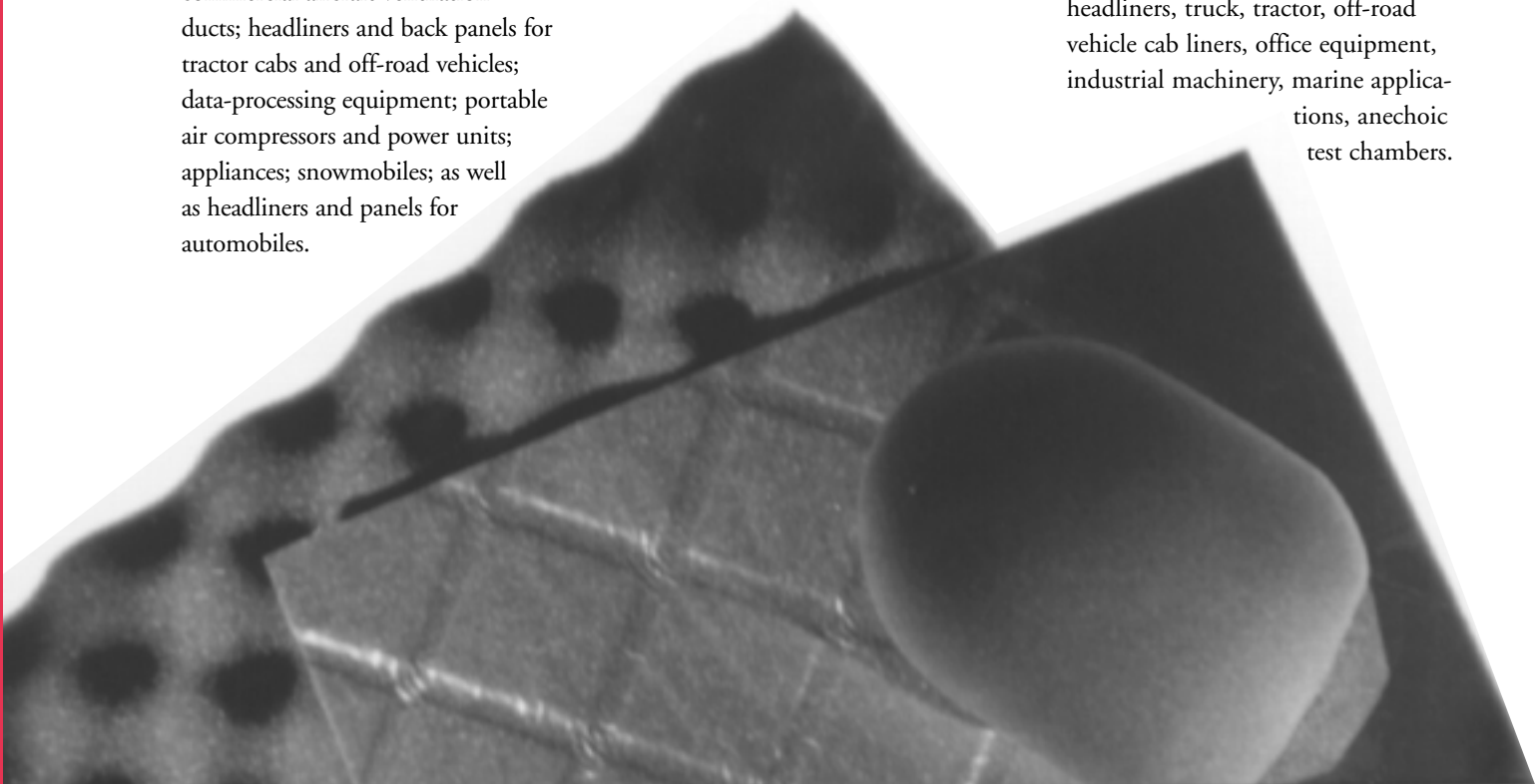
Benefits included are: predictable sound absorption in broad band (low, mid, high) frequency range from engineered foam grades; nearly "total perfection in sound transparency applications (polyurethane foam is 97% air) from other selected grades; fabrication design flexibility; functional/decorative laminate capabilities; installation ease; excellent shape retention, and resistance to wear and abrasion.

### **Noise Absorption**

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Acoustical foam will absorb the activity of airborne or fluid-borne noise, causing a loss in energy by weakening reflected vibrations. The sound vibration pulses are literally "tired out" by their effort to force the foam strands to vibrate...and the noise reflected level is, therefore, immediately reduced. Acoustical foam for sound absorption provides the foam high efficiency, consistent throughout, and predictable from installation to installation.

**Applications Include:** Automobile headliners, truck, tractor, off-road vehicle cab liners, office equipment, industrial machinery, marine applications, anechoic test chambers.



## Acoustical Functions

Product	Function	Application
*SIF® (Fine and Coarse Pore)	Sound Absorber	Anechoic chambers and noise test facilities
*SIF® (Medium Pore)	Air Diffuser	Microphone wind screen covers, power brake units, mufflers
*SIF II® (Medium Pore)	Acoustically Transparent	Hi Fi speaker grilles
*SIF Felt®	Sound Absorber	Tuned for mid and high frequencies
*Aerofonic®	Sound Absorber	FAR 25.853 extended environmental use felt designed for aircraft
**Aresto II®	Sound Absorber	General use where flammability and economy are important
**Pyrell®	Sound Absorber	General use where maximum flammability protection is a concern
HyFonic®	Sound Absorber	An extended environmental foam where flammability is a concern
Fine-Pore Acoustical	Sound Absorber	General use where economics is the major concern
Custom Lamination	Sound Absorber Moisture Barrier	Where special barriers are needed and/or aesthetics are important

\*Engineered to be predictable from run to run based on close tolerances, for density permeability and pores per lineal inch (ppi)

\*\*Available in 4 lb/ft<sup>3</sup> density

## Typical Physical Properties of Foamex Acoustical Materials

	SIF® Industrial Foam	SIF Felt®	Aresto® II	Pyrell®	HyFonic® I	Aerofonic® Felt
Grade	90 ppi	3-900	70 ppi	70 ppi	65 ppi	4-700
Density (lb/cu. ft)	1.9	n/a	2.0	2.0	1.7	n/a
Tensile Strength (PSI)	35	n/a	20.0	22	14	n/a
Elongation (%)	415	n/a	190	220		n/a
Polyol	Polyester Polyurethane	Polyester Polyurethane	Polyester Polyurethane	Polyester Polyurethane	Polyether Polyurethane	Polyether Polyurethane

Tested in accordance with ASTM 3574. Physical properties not to be used as a specification.



**TECH LINE 1-800-767-4997 • FAX (610) 876-2341**

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**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 Foamex products are purchased, Foamex does not recommend specific applications or assume any responsibility for use results obtained or suitability for specific applications. Foamex warrants its products only to direct buyers. (See Foamex's Standard Terms of Sales for Foamex's warranty.) IN NO EVENT SHALL Foamex BE RESPONSIBLE FOR ANY CLAIM IN EXCESS OF Foamex's SALE PRICE OF THE PRODUCT TO WHICH THE CLAIM RELATES.

**TECHNICAL PRODUCTS GROUP • 1500 EAST SECOND STREET • EDDYSTONE PA 19022 • FAX (610) 876-2341**

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