

 American
Acoustical
Products

HUSHCLOTH®
ACOUSTICAL FOAMS



General Description

Hushcloth acoustical foams are designed to provide maximum absorption of airborne sound with minimum thickness and weight. These flexible polyurethane open cell foam products are manufactured to optimize pore size, air flow resistance, and density.

Sound energy, passing through the cell structure, is converted into minute quantities of low grade heat that is easily dissipated. Since the uniformity of the cells are carefully controlled the efficiency is constant and predictable from one installation to another.

Many applications require these products to be subjected to environments such as dirt, moisture, chemicals, and abrasion that could be hostile to an unprotected foam. American Acoustical Products has developed various surface treatments to protect the integrity of the foam from these elements. These facings will increase the absorption properties at certain frequencies as well as provide a cleanable, decorative and durable finish for a wide variety of applications.

Hushcloth Foams can be purchased in rolls or sheets, and can be die cut, or fabricated to customer specifications. They are easily cut with a knife, saw or scissors. The addition of pressure sensitive adhesive provides a convenient method of fastening to most substrates.

All **Hushcloth** products can be made in combination with **Whispermat™** barrier systems when both absorption and transmission loss is needed (see Whispermat brochure), or **VE™** damping systems, when enhanced vibration control is required. (see VE damping brochure).

Polyester Physical Properties

Color Charcoal Grey

Density 2lb/cft (32 kg/m³) ±10% or 4 lb/cft (64 kg/m³) ±10% per ASTM D3574-86 test A

Tear Strength 1.5 ppi(2.6 N/cm) per ASTM D3574-86 test F

Tensile Strength 20 psi(135 kPa) per ASTM D3574-86 test E

Elongation 120% per ASTM D3574-86 test E

Compression Set % 50% Deflection Max 10% ASTM D3574-86 test D

Heat Resistance retention of tensile strength after 22 hours dry heat aging at 140°C min. 70% ASTM D3574-86 test K

Humidity Resistance retention of tensile strength after 6 hours, steam autoclave at 105°C min. 70% ASTM D3574-86 test J

Chemical Resistance good for common fluids, water, petroleum, solvents, and alkalis. Swelling will occur, will return to almost 100% after drying.

Flammability MVSS 302, UL-94 HF1, and FAR 25.853(b)

Service Temperature -40°F(-40°C) to +225°F(107°C) continuous to 275°F(135°C) intermittent

Thermal Conductivity BTU-in/ft²h°F 0.25 (36W/m²K) per ASTM C 177

Standard Surface Treatments

Aluminized Polyester
Reinforced Aluminized Polyester
Urethane Films (matte or impervious)
Tedlar® (trademark E. I. Dupont Co.)
Perforated Vinyl
Convuluted
Embossed
Customized Facings Available

Pressure Sensitive Adhesive

Supported SBR (temps to 60°C/140°F)
Unsupported Acrylic (temps to 120°C/250°F)
Supported Acrylic (temps to 120°C/250°F)

Standard Sizes

Rolls 54" x 50ft (1370mm x 15m)
Sheets 54" x 72" or 36" or 24"(1370mm x 1800 or 900 or 600mm)
Fabricated or Die Cut
Thicknesses ¼" - 2"(6mm - 50mm)

Thickness	Frequency (Hz)						
	125	250	500	1 K	2K	4K	NRC
½"(12mm)	0	0.08	0.16	0.55	0.98	0.95	0.45
¾"(19mm)	0.01	0.11	0.38	0.92	0.93	0.86	0.6
1 "(25mm)	0.06	0.19	0.47	1	0.85	0.9	0.7
1½"(37mm)	0.1	0.3	0.77	1.04	0.99	1.11	0.8
ASTM C423-90a Absorption Coefficient							

Polyether Physical Properties

Color Charcoal Grey

Density 2lb/cft (32 kg/m³) ±10% or 4 lb/cft (64 kg/m³) ±10% per ASTM D3574-86 test A

Tear Strength 1.58 ppi(2.8 N/m) per ASTM D3574-86 test F

Tensile Strength 13 psi(90 kPa) per ASTM D3574-86 test E

Elongation 193% per ASTM D3574-86 test E

Compression Set % 50% Deflection - Max 10% ASTM D3574-86 test D

Heat Resistance retention of tensile strength after 22 hours dry heat aging at 140°C min. 70% ASTM D3574-86 test K

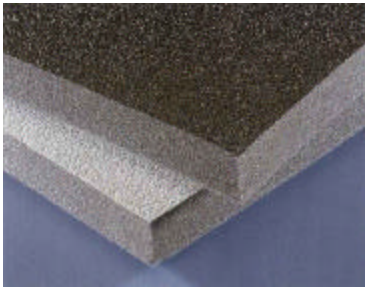
Humidity Resistance retention of tensile strength after 5 hours, steam autoclave at 120°C min. 70% ASTM D3574-86 test J

Chemical Resistance good for common fluids, water, petroleum, solvents, and alkalis. Swelling will occur, will return to almost 100% after drying.

Flammability MVSS 302, UL-94 HF1, and FAR 25.853(b)

Service Temperature -40°F(-40°C) to +225°F(107°C) continuous to 275°F(135°C) intermittent

Thermal Conductivity BTU-in/ft²h°F 0.25 (36W/m²K) per ASTM C 177



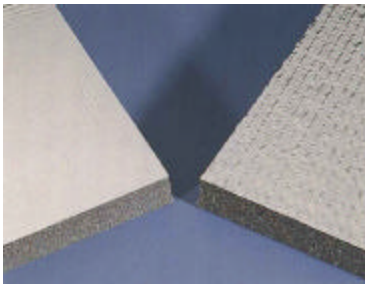
Hushcloth Urethane Faced Foams

provide a colorful, durable, abrasion and puncture resistant product. These urethane films are heat laminated to form a decorative textured surface and can be made impervious to most petroleum products, moisture, and dirt. Matte facing can be added to our embossed foam to give a more pronounced decorative rosette pattern. (Type Deco-Foam CF)

Standard colors are black or white with color matching available.

Damping layers or barriers can be added for enhanced performance.

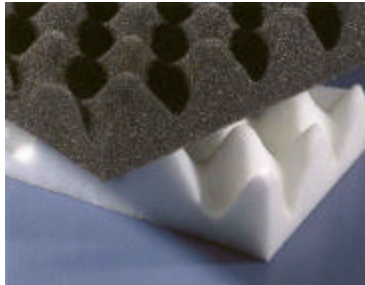
Thickness	Frequency (Hz)						
	125	250	500	1K	2K	4K	NRC
½" (12mm)	0.04	0.11	0.19	0.57	0.95	0.87	0.45
¾" (19mm)	0.06	0.15	0.43	0.98	0.88	0.87	0.6
1" (25mm)	0.01	0.24	0.47	0.87	0.9	0.99	0.6
1½" (37mm)	0.18	0.68	0.89	0.69	0.68	0.77	0.75
ASTM C423-90a Absorption Coefficient							



Hushcloth Aluminized Polyester Facings

are used in environments hostile to an unprotected foam. These polyester films, plain and reinforced, offer abrasion resistance and are unaffected by moisture, lubricants, fuels, dirt and a variety of solvents. The film is easily wiped clean and seams may be taped for a finished appearance.

Thickness	Frequency (Hz)						
	125	250	500	1K	2K	4K	NRC
½" (12mm)	0.08	0.15	0.53	0.53	0.15	0.28	0.35
¾" (19mm)	0.08	0.33	0.87	0.38	0.29	0.32	0.45
1" (25mm)	0.11	0.56	0.61	0.31	0.34	0.46	0.45
1½" (37mm)	0.2	0.74	0.49	0.37	0.31	0.49	0.5
ASTM C423-90a Absorption Coefficient							



Hushcloth Convoluted Foams

combine excellent absorptive performance, over a wide range of frequencies, with the aesthetics of a sculpted design. These unique egg crate pattern panels can be directly adhered to reflective surfaces or can be used as hanging baffles when it is impractical to cover large manufacturing areas or warehouses. Melamine foam should be used for applications that require high temperatures, lightweight or enhanced flammability properties (see Hushcloth Safe & Sound).

Colors: Polyurethane - Charcoal; Melamine – White

Thickness	Frequency (Hz)						
	125	250	500	1K	2K	4K	NRC
1" (25mm)	0.02	0.1	0.24	0.64	1	1	0.5
2" (50mm)	0.08	0.26	0.83	1	1.03	1.04	0.8
3" (75mm)	0.12	0.69	1.1	1.03	1.03	1.15	0.95
Melamine 2" (50mm)	0	0.28	0.76	0.91	1.02	1.1	0.75
ASTM C423-90a Absorption Coefficient							

Standard Sizes

1", 2", 3"	54" x 54" (1375 x 1375mm)
1", 2"	36" x 120" (915 x 3050mm)
Melamine 1", 2"	48" x 24" or 48" or 96" (1220mm x 610mm or 1220mm or 2440mm)



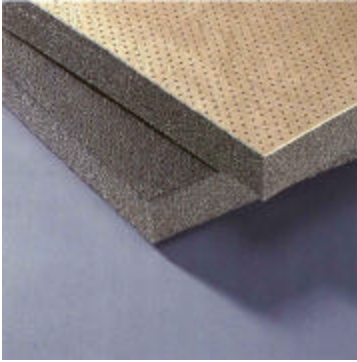
Hushcloth Densified Embossed

foams are manufactured by compression under high heat to form an attractive textured pattern. This increases the surface area, density and stiffness of the foam for maximum sound absorption. By densifying the surface a thin skin is formed to give greater abrasion and air velocity resistance. A decorative urethane facing can be applied (Type Deco-Foam CF) for enhanced appearance and durability, and to make the foam impervious to most liquids.

Hushcloth Embossed Foams are typically used in business equipment, appliances, HVAC units and vehicle headliners.

Thickness	Frequency (Hz)						
	125	250	500	1K	2K	4K	NRC
½" (12mm)	0	0.09	0.24	0.75	0.97	0.75	0.5
¾" (19mm)	0.07	0.13	0.29	0.82	0.86	0.89	0.55
1" (25mm)	0.07	0.18	0.53	0.98	0.88	1.01	0.65
1½" (37mm)	0.08	0.31	0.71	0.94	0.97	1.05	0.75
ASTM C423-90a Absorption Coefficient							

Phone: 937-438-1100
Fax: 937-438-2190



Perforated Vinyl Faced Foams

combine the absorption properties of Hushcloth foam with the toughness and durability of vinyl. The perforation pattern has been engineered to provide maximum absorption and resilience with 14% open area. The attractive leather like appearance makes it ideal for vehicle interiors, marine headliners, and enclosures.

Standard Sizes

Rolls: 54" x 150' (1370mm x 45m)

Sheets:

54" x 24" or 36" or 72" (1370mm x 600 or 900 or 1800mm)

Standard Thickness:

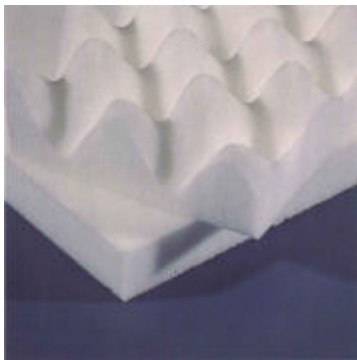
1/4", 1/2", 1"

Standard Colors:

Black, 383 Military Green, Sandpiper, White

Thickness	Frequency (Hz)						
	125	250	500	1 K	2K	4K	NRC
1/2" (12mm)	0.22	0.24	0.52	0.88	1	0.68	0.66
1" (25mm)	0.3	0.37	0.9	0.96	0.8	0.76	0.76
ASTM C384				Absorption Coefficient			

Meets MVSS 302 for Flammability



Melamine – Safe & Sound

is a lightweight, high temperature resistant, open cell foam manufactured from melamine resin. It combines excellent thermal properties with superior sound absorption capabilities to create a versatile fiber free product which can be applied in situations which may prohibit the use of urethane foams or fiberglass insulations. This fire retardant foam meets the flame spread, smoke density and fuel contribution requirements necessary to comply with Class-I building code regulations. The high performance thermal and acoustical characteristics of this flexible, low density foam make it an ideal product for in-plant and FDA approved applications. In addition to being the solution to aircraft and architectural noise problems, Hushcloth Melamine Foam is the material to use in OEM products requiring a combination of thermal and acoustical insulation capabilities. Optional facings can be applied for more durability and chemical resistance as well as pressure sensitive adhesive for ease of installation.

Standard Sizes

Sheets: 48" x 24" or 48" or 96" (1200mm x 600mm or 1200mm or 2400mm)

Standard Thickness: 1/4" to 18" (6mm to 450mm)

Melamine Physical Properties

Color: White

Density: 0.7 lb/ft³ (11Kg/m³) ASTM D3574-86 test A

Tear Strength: 0.5 ppi (0.87 N/cm) per ASTM D3574-86 test F

Tensile Strength: 18 psi (124 kPa) per ASTM D3574-86 test E

Elongation: 15% per ASTM D3574-86 test E

Flammability: UL 94V0, UL-94 HF-1, UL 94-5, and FAR 25.853(a)

ASTM E84 Flame: 2.5; Smoke: 16.9

ASTM E162 Pass

662 Pass

Boeing ATS 1000.001 Pass

Thermal Conductivity BTU-in/ft²h°F 0.25 (36W/m²K) per ASTM C 177

Service Temperature -45°F(-43°C) to 302°F(150°C) Continuous; to 400°F(205°C) Intermittent

Thickness	Frequency (Hz)						
	125	250	500	1 K	2K	4K	NRC
1/2" (6mm)	0.09	0.13	0.27	0.5	0.68	0.81	0.4
3/4" (19mm)	0.09	0.15	0.39	0.65	0.8	0.9	0.5
1" (25mm)	0.06	0.31	0.65	0.82	0.94	0.99	0.68
1 1/2" (37mm)	0.19	0.35	0.75	0.98	1.01	1.03	0.75
1" (25mm) Reinforced Facing	0.07	0.39	1.13	0.51	0.27	0.43	0.58
ASTM C384				Absorption Coefficient			

The material contained in this bulletin is for information purposes only. Technical data and tests are based on results obtained by American Acoustical Products and its suppliers and we believe to be accurate and reliable. The data expressed represents typical laboratory values and should not be considered product specifications. American Acoustical Products can assume no liability for results or damages incurred through the application of the data and tests presented.

The Federal Trade Commission considers that there are not existing test methods or standards regarding flammability that are accurate indicators of the performance of cellular plastic materials under actual fire conditions. Any results of existing test methods such as ASTM D-1692 and UL-94, are intended only as measurements of the performance of such materials under specific, controlled test conditions. The terminology associated with the above test or standards - such as "non-burning," "self extinguishing" or "non-combustible" - is not intended to reflect properties of such products under actual fire conditions. Consult local building codes

Represented by:

