



Insul-SHIELD® Thermal and Acoustical Flexible, Semi-Rigid and Rigid Board and Roll Products

FIBER GLASS INSULATION

PRODUCT DATA SHEET

PRODUCT DESCRIPTION

Insul-SHIELD is a series of flexible, semi-rigid or rigid thermal and acoustical fiber glass insulating boards for custom curtain wall applications. They vary in density and are made from inorganic glass fibers bonded with a thermosetting binder. Black-faced Insul-SHIELD is available in rolls.

APPLICATIONS

New and Retrofit Construction – Insul-SHIELD insulation provides thermal and acoustical insulating values for exterior curtain wall cavities, parking structures, mechanical rooms, theaters, casinos and other commercial construction applications.

Custom Curtain Wall Construction – Exterior curtain wall cavities – Insul-SHIELD is exceptionally well suited to curtain wall construction in terms of both installation and performance. When used in the exterior envelope of steel-framed buildings, it helps reduce heat loss in the winter and heat gain in the summer. The result is an attractive, efficient thermal enclosure that cuts long-term energy expenses and improves life-cycle costs.

Standard Metal Panel Construction – Insul-SHIELD offers a variety of sizes, densities and facings for on-the-job or in-the-shop insulation of metal panel buildings such as power plants, assembly buildings, sports arenas and other commercial facilities.

General Construction – A versatile insulation, Insul-SHIELD provides thermal protection for masonry or concrete structures such as shopping centers, banks and many other types of low-rise commercial or institutional buildings. It is also ideal for use in parking garage ceilings. In masonry applications, semi-rigid and rigid Insul-SHIELD boards faced with an FSK vapor retarder are installed between “Z” or hat channels applied directly to the masonry surface. Normally, gypsum board and/or architectural panels are then used as interior surfaces.

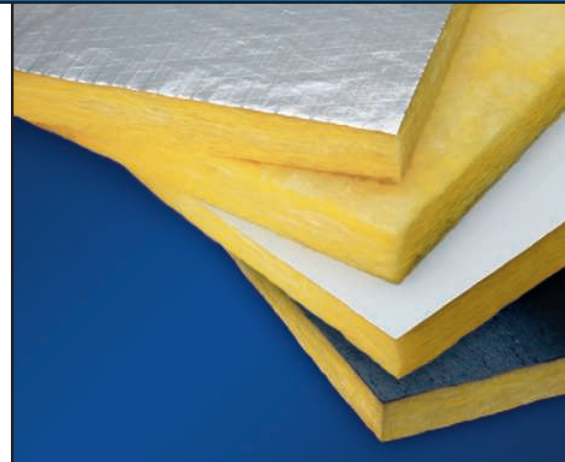
Theaters – With a state-of-the-art acrylic-coated surface, Insul-SHIELD Black-Faced Rolls are an ideal backdrop for theater screens. The opaque surface absorbs light, eliminating concern about back-scatter into the viewing arena.

INSTALLATION

Insul-SHIELD can be easily cut and friction-fit between vertical or Z-shaped framing or hat channels applied directly to a masonry surface. The insulation can also be installed with impaling pins or with suitable adhesives.

In standard metal panel construction applications, Insul-SHIELD is field-installed between an interior liner and the outer metal panel. Normally, gypsum board and/or architectural panels are then used as interior surfaces. Some trimming may be necessary if used in ceiling grids, as this product is a commercial-use board.

Note: In colder climate areas, vapor retarders (whether attached to the insulation or applied separately) are often placed toward the heated or conditioned side of the wall. This is done to reduce water vapor penetration into the wall from the building interior. Check your local building codes for vapor retarder requirements.



PERFORMANCE ADVANTAGES

Cost-effective: lightweight, and easy to handle and fabricate so installation is fast and total applied cost is low.

Thermally efficient: provides effective resistance to heat transfer.

Acoustically efficient: reduces transmission of sound through roofs, ceilings, floors and walls.

Fire-resistant and noncombustible: all Insul-SHIELD products provide fire resistance. In addition, Insul-SHIELD Plain I/S 150, I/S 225, and I/S 300 are also rated non-combustible.

Moisture-resistant: vapor-retarder facings resist water vapor transmission.

Noncorrosive: does not accelerate corrosion of pipes, wiring or metal studs.

Durable: unaffected by oil, grease and most acids. It will not rot, mildew or otherwise deteriorate, preventing slumping and uninsulated voids.

Easy to handle: unlike some products that are friable, fiber glass maintains its physical integrity during handling.

Self-supporting: Insul-SHIELD boards are rigid enough to be self-supporting, and can be attached with minimal securement to a variety of surfaces.





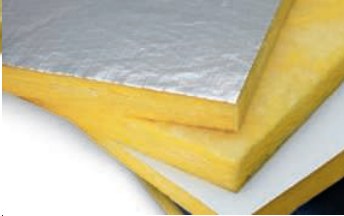
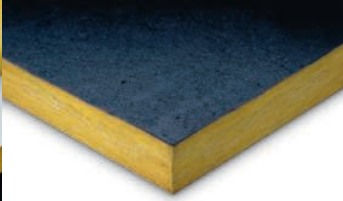

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AVAILABLE FORMS

Insul-SHIELD is available unfaced or with FSK or Black-Faced Rolls. PSK is available as a special order.

Unfaced Boards	FSK-Faced Boards	Black Mat Boards	Black-Faced Rolls
Standard board size – 24" x 48" (610 mm x 1219 mm) available for all I/S densities.	Standard board size – 24" x 48" (610 mm x 1219 mm) available for I/S 300.	Standard board size – 24" x 48" (610 mm x 1219 mm) available for I/S 300.	Roll form – I/S 150 available in 48" (1219 mm) width. Available in 1" (25 mm) and 2" (51 mm) thicknesses.
			
Insul-SHIELD boards are designed for custom curtain wall applications.	Faced Insul-SHIELD boards can be used where a vapor barrier is needed. FSK facing has the best fire performance characteristics and helps maximize lighting efficiency.	Insul-SHIELD Black provides a semirigid substrate beneath the fabric treatment used on theater side walls. The black, mat-faced insulation provides adequate shadowing behind any surface treatment.	Insul-SHIELD Black-Faced rolls are ideal for theater applications.

STANDARD DIMENSIONAL DATA AND FACINGS*

Type	"k"-Values Btu•in/(hr•ft ² •°F)	(w/m ² •K)	Thickness (in)	Thickness (mm)	Facing**
I/S 300	0.23	0.033	1, 1½, 2, 2½, 3	25, 38, 51, 64, 76	Unfaced, FSK, Black
I/S 600	0.22	0.032	1, 1½, 2	25, 38, 51	Unfaced, FSK, Black
I/S Black-Faced	0.25	0.036	1, 2	25, 51	Durable black-faced surface

*Product sizes vary by plant locations and minimum quantities may apply; consult your Johns Manville sales representative for other available sizes.

**Consult Product Availability Listing for most current and accurate sizing and availability of all Insul-SHIELD products.

SOUND ABSORPTION DATA*

Type	Density		Typical Coefficients by Frequency (Hz)							Thermal Data	
	pcf	kg/m ³	125	250	500	1000	2000	4000	NRC [†]	"R" (hr•ft ² •°F)/Btu	"RSI" m ² •K/w
1" (25 mm) Thickness Unfaced (Type "A" Mounting)**											
I/S 300	3.0	48.1	0.06	0.29	0.75	0.99	1.04	1.02	0.75	4.3	0.76
I/S 600	6.0	96.1	0.10	0.35	0.85	1.04	1.05	1.03	0.80	4.5	0.79
1½" (38 mm) Thickness Unfaced (Type "A" Mounting)**											
I/S 300	3.0	48.1	0.13	0.62	1.07	1.08	1.06	1.04	0.95	6.5	1.14
I/S 600	6.0	96.1	0.14	0.60	1.01	1.08	1.06	1.05	0.95	6.8	1.20
2" (51 mm) Thickness Unfaced (Type "A" Mounting)**											
I/S 300	3.0	48.1	0.24	1.00	1.11	1.08	1.06	1.05	1.05	8.7	1.53
I/S 600	6.0	96.1	0.38	0.93	1.10	1.07	1.07	1.07	1.05	9.1	1.60

*PER ASTM C 423.

**Type "A" Mounting per ASTM E 795.

[†]Noise Reduction Coefficient



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SOUND ABSORPTION DATA*

Type	Density		Typical Coefficients by Frequency (Hz)							Thermal Data	
	pcf	kg/m ³	125	250	500	1000	2000	4000	NRC†	"R" (hr•ft ² •°F)/Btu	"RSI" m ² •°K/w
2" (51 mm) Thickness FSK Faced (Type "A" Mounting)**											
I/S 300	3.0	48.1	0.41	1.13	0.85	0.73	0.38	0.16	0.75	8.7	1.53
I/S 600	6.0	96.1	0.49	0.26	0.68	0.47	0.33	0.22	0.45	9.1	1.60

Thickness		Typical Coefficients by Frequency (Hz)							Thermal Data	
(in)	(mm)	125	250	500	1000	2000	4000	NRC†	"R" (hr•ft ² •°F)/Btu	"RSI" m ² •°K/w
I/S Black-Faced Rolls; 1.5 pcf (24.0 kg/m³) Density (Type "A" Mounting)**										
1	25	0.08	0.31	0.64	0.84	0.97	1.03	0.70	4.2	0.74
2	51	0.25	0.66	1.00	1.05	1.02	1.01	0.95	8.00	1.41

*Per ASTM C 423.

**Type "A" Mounting per ASTM E 795.

†Noise Reduction Coefficient.

RECOMMENDED STORAGE AND TRANSPORT

Store insulation indoors. Keep insulation clean and dry at all times. When transporting, cover completely with a waterproof tarpaulin as necessary.

SPECIFICATION COMPLIANCE*

Insul-SHIELD complies with applicable ASTM and federal specifications and the standards of IBC building code. It meets air erosion standards up to 1,800 fpm (9.14 m/s) per UL 181.

Type	I/S 300	I/S 600	I/S Black-Faced Roll
ASTM C 612, Type IA, Category 1**	X	X	X
ASTM C 612, Type IB, Category 1**	X	X	
ASTM C 612, Type IB, Category 2**	X	X	
ASTM C553, Types I, II, III			X
ASTM E 136 (Noncombustible)	X		
ASTM E 84 (Flame/Smoke 25/50 or less)	X	X	X

*When ordering material to comply with any government specification (or any other listed specification), a statement of that fact must appear on the purchase order.

**Exceptions to ASTM standards: Not tested for compression resistance. Not tested for use at elevated temperatures. Corrosiveness is tested in galvanized steel instead of plain low-carbon steel.

LIMITATIONS OF USE

Check applicable building codes.



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Properly insulating a structure using Johns Manville building insulation helps preserve our environment by reducing energy consumption for heating and cooling, reducing the pollution resulting from fuel burning, and reducing waste through the utilization of recycled materials.

Technical specifications as shown in this literature are intended to be used as general guidelines only. The physical and chemical properties of Insul-SHIELD thermal and acoustical fiber glass insulation listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Any references to numerical flame spread or smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the sales office nearest you for current information. All Johns Manville products are sold subject to Johns Manville's Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville Limited Warranty and Limitation of Remedy or for information on other Johns Manville thermal and acoustical insulation and systems, call or write to the 800 number or address listed above.