

## DESCRIPTION

Spiracoustic Plus® duct liner, bonded with a thermosetting resin, is specifically engineered to provide very high acoustical and thermal performance in round air ducts of virtually any size. Based on high-density fiber glass board technology, Spiracoustic Plus duct liner has factory-made, evenly spaced kerfs to allow the material to conform to the inside diameter of round air ducts. The airstream surface and transverse edges are protected with JM's factory-applied proprietary black Permacote® acrylic coating.

Johns Manville provides the finishing touches to Spiracoustic Plus round duct insulation with SuperSeal® coating products. These unique acrylic coatings are air-drying versions of the factory-applied airstream coating designed for fabrication and repair use. SuperSeal products help retain all the performance characteristics engineered into Spiracoustic Plus duct liner.

## STORAGE

Spiracoustic Plus should be kept clean and dry during storage, transport, fabrication, installation and system operation.

## GENERAL PROPERTIES

Operating temperature (max.) – ASTM C411	250°F (121°C)
Nominal density	4.0 pcf (64 kgs/m <sup>3</sup> )
Air velocity (max.) – ASTM C1071	6000 fpm (30.5 m/sec.)
Fungi resistance – ASTM C1338	Does not breed or promote
Fungi resistance – ASTM G21	No growth
Water Repellancy – INDA IST 80.6	≥6

## STANDARD THICKNESSES AND PACKAGING\*

Spiracoustic Plus duct liner is available in cartons or on pallets in several size configurations. This packaging configuration applies to all product types: VSD (very small diameter), SD (small diameter) and LD (large diameter).

Description	Thickness		Sheet Size	
	in	mm	in	mm
VVSD, VSD, SD, LD	1	25	48 x 120 x 1	1219 x 3048 x 25
VSD, SD, LD	1½	38	48 x 120 x 1½	1219 x 3048 x 38
VSD, SD, LD	2	51	48 x 120 x 2	1219 x 3048 x 51

\*Reference packaging on back side.

## SURFACE BURNING CHARACTERISTICS

Spiracoustic Plus duct liner meets the Surface Burning Characteristics and Limited Combustibility of the following standards:

Standard/Test Method

• ASTM E84

• UL 723

• NFPA 255

• NFPA 90A and 90B

• NFPA 259

• Canada: CAN/ULC-S102

Maximum Flame Spread Index	25
Maximum Smoke Developed Index	50

UL labels supplied on packages when requested on order.

## SPECIFICATION COMPLIANCE

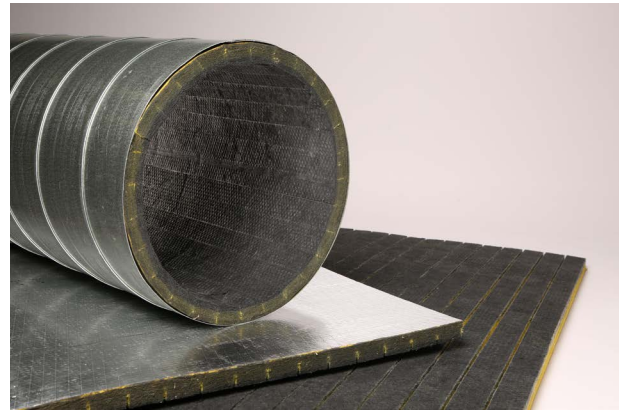
• ASTM C1071, Type II

• ASHRAE 62

• MEA# 237-86-M

• SMACNA Application Standards for Duct Liners

• NAIMA Fiber Glass Duct Liner Installation Standard



## ADVANTAGES

**Cost Effective.** Spiracoustic Plus duct liner eliminates the need for costly double-wall configuration in round air ducts.

**Improves Indoor Building Environment.** Improves indoor environmental quality by helping to control both temperature and sound.

**Resistant to Dust and Dirt.** The tough, acrylic polymer Permacote coating helps guard against the incursion of dust or dirt into the substrate, minimizing the potential for biological growth.

**Will Not Support Microbial Growth.** Permacote coating is formulated with an immobilized, EPA-registered agent to protect the coating from potential growth of fungi and bacteria.

Note: As with any type of surface, microbial growth may occur in accumulated duct system dirt, given certain conditions. This risk is minimized with proper design, filtration, maintenance and operation of the HVAC system.

**Shipped With E<sup>3</sup> Pallet™ Technology:** The E<sup>3</sup> Pallet™ is designed to simplify repurposing our 4x8' and 4x10' pallets into more functional, 48x48" and 48x40" pallets (respectively).

See instructions on page 3.



## THERMAL PERFORMANCE

Thickness		R-value		Conductance	
in	mm	(hr·ft <sup>2</sup> ·°F)/Btu	m <sup>2</sup> ·°C/W	Btu/(hr·ft <sup>2</sup> ·°F)	W/m <sup>2</sup> ·°C
1	25	4.3	0.76	0.23	1.31
1½	38	6.4	1.13	0.16	0.91
2	51	8.4	1.48	0.12	0.68

R-value and conductance are calculated from the material thermal conductivity tested in accordance with ASTM C518 at 75°F (24°C) mean temperature.

## SOUND ABSORPTION COEFFICIENTS (TYPE "A" MOUNTING)

Thickness		Sound Absorption Coefficient at Frequency (Cycles per Second) of						
in	mm	125	250	500	1000	2000	4000	NRC
1	25	0.05	0.21	0.71	1.01	1.07	1.09	0.75
1½	38	0.10	0.39	1.02	1.08	1.04	1.00	0.85
2	51	0.17	0.63	1.10	1.05	1.09	1.06	0.95

Coefficients were tested in accordance with ASTM C423 and ASTM E795.

## RECYCLED CONTENT



**SELECTION TABLE BY DUCT DIAMETER**

**DATA SHEET**

**Thickness: 1" (25 mm)**

Product		Metal Duct ID		Finished ID	
Type	Description	in	mm	in	mm
VVSD***	Very, Very Small Diameter	6 (min) to 8	152 (min) to 203	4 (min) to 6	101 (min) to 152
VSD	Very Small Diameter*	10 (min) to 16	203 (min) to 406	8 (min) to 14	152 (min) to 356
SD	Small Diameter	18 (min) to 30	457 (min) to 762	16 (min) to 28	406 (min) to 711
LD	Large Diameter	32 (min) & up	813 (min) & up	30 (min) & up	762 (min) & up

**Thickness: 1½" (38 mm)**

Product		Metal Duct ID		Finished ID	
Type	Description	in	mm	in	mm
VSD	Very Small Diameter*	14 (min) to 20	355 (min) to 508	11 (min) to 17	279 (min) to 432
SD	Small Diameter	22 (min) to 38	559 (min) to 965	19 (min) to 35	483 (min) to 889
LD	Large Diameter	40 (min) & up	1016 (min) & up	37 (min) & up	940 (min) & up

**Thickness: 2" (51 mm)**

Product		Metal Duct ID		Finished ID	
Type	Description	in	mm	in	mm
VSD	Very Small Diameter*	18 (min) to 24	457 (min) to 610	14 (min) to 20	355 (min) to 508
SD	Small Diameter**	26 (min) to 58	660 (min) to 1473	22 (min) to 54	559 (min) to 1372
LD	Large Diameter	54 (min) & up	1372 (min) & up	50 (min) & up	1270 (min) & up

\*Fabrication Note: All Spiracoustic Plus duct liner VSD installations in metal duct must be sized for a "slip-fit" installation.

\*\*2" (51 mm) Spiracoustic Plus duct liner SD installations in metal ducts of IDs less than or equal to 30" (762 mm) must be sized for "slip-fit" installation.

\*\*\* VVSD available in 1" thickness only.

Note: Minimum diameters are established to prevent damage to the liner during installation and must be observed.

**PACKAGING BY THICKNESS**

**Thickness: 1" (25 mm)**

	Sheets	Square Feet	Square Meter
Cartons	6 sheets/carton	240	22.3
Pallets	48 sheets/pallet	1920	178

**Thickness: 1½" (38 mm)**

	Sheets	Square Feet	Square Meter
Cartons	4 sheets/carton	160	14.9
Pallets	32 sheets/pallet	1280	119

**Thickness: 2" (51 mm)**

	Sheets	Square Feet	Square Meter
Cartons	3 sheets/carton	120	11.1
Pallets	24 sheets/pallet	960	89

**SUSTAINABLE BUILDING ATTRIBUTES**

GREENGUARD® certification is not intended for residential environments. Instead, the certification is intended only for buildings meeting ASHRAE 62.1-2007 commercial building ventilation rates. This certification is proof that the product meets the GREENGUARD Environmental Institute's indoor air quality standards and product emission standards for VOCs.



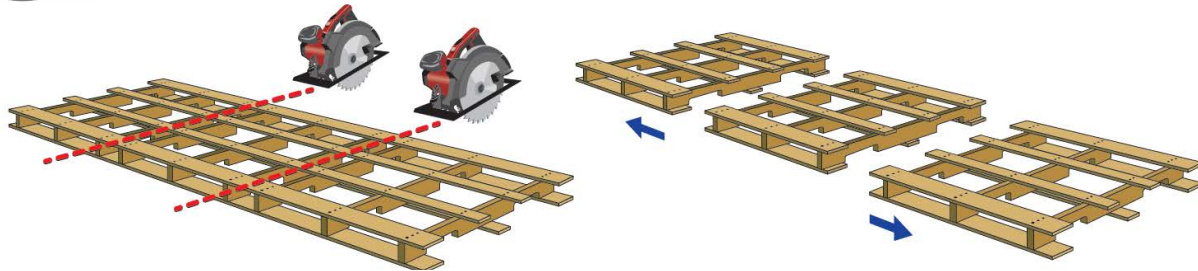
**ISO 9000 CERTIFICATION**


Johns Manville commercial and industrial insulation products are designed, manufactured and tested in our own facilities, which are certified and registered to stringent ISO 9000 (ANSI/ASQC 90) series quality standards. This certification, along with regular, independent third-party auditing for compliance, is your assurance that Johns Manville products deliver consistent high quality.



**4x10' E<sup>3</sup> PALLET™ CUT DOWN INSTRUCTIONS**

The 4x10' E<sup>3</sup> Pallet™ can be cut down into three 48x40" pallets. Simply use a circular saw to cut along the red dotted lines shown in the image below.



	48x40" Cut Down
Max Load Capacity (Evenly Distributed)	2,885 lbs*
Lateral Collapse Resistance 	0.70*

\*All pallets are subject to abuse, aging and normal wear and tear during use and storage. The data reported in this document represent initial performance of a new pallet after manufacture and do not take into account damage that may occur during handling and use of the pallets.



717 17th St.  
 Denver, CO 80202  
 800-654-3103  
 www.JM.com

**North American Sales Offices,  
 Insulation Systems**

**Eastern Region & Canada**  
 P.O. Box 158  
 Defiance, OH 43512  
 800-334-2399  
 Fax: 419-784-7866

**Western Region & Outside  
 North America**  
 P.O. Box 5108  
 Denver, CO 80217  
 800-368-4431  
 Fax: 303-978-4661

Technical specifications as shown in this literature are intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product. The physical and chemical properties of Spiracoustic Plus 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.

**All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions, which includes a Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions or for information on other Johns Manville thermal insulation and systems, visit [www.jm.com/terms-conditions](http://www.jm.com/terms-conditions) or call (800)654-3103.**