

## Spiracoustic Plus™

### Round Duct Liner System Guide Specifications

#### A. Work Included

Spiracoustic Plus internal lining system for round metal ductwork with inside diameters ranging from 8" (203 mm) to 72" (1829 mm)\* with a maximum air velocity of 6000 fpm (30.5 m/sec).

#### B. System Performance

The contractor shall furnish and install round metal duct lined with Spiracoustic Plus System insulations. Product selection shall be based on system thermal/acoustical requirements as specified.

Installation techniques for straight duct and common fittings are addressed in the Johns Manville "Spiracoustic Plus Round Duct Liner Installation Guide". To order this Guide, request publication no. AHS-306 for information.

#### ☐ For ductwork requiring 1" (25 mm) Spiracoustic Plus System Lining:

- a. The installed 1" (25 mm) Spiracoustic Plus System lining shall have a Thermal Resistance (R-Value) of 4.3 at 75°F (0.76 at 24°C) mean temperature, and Noise Reduction Coefficient (NRC) of 0.75 per ASTM C 423, Type "A" mounting.
- b. Metal duct with inside diameter range of 8" (203) - 16" (406 mm), shall be lined with 1" (25 mm) Spiracoustic Plus VSD Round Liner Board.
- c. Metal duct with inside diameter range of 18" (457 mm) - 30" (762 mm), shall be lined with 1" (25 mm) Spiracoustic Plus SD Round Liner Board.
- d. Metal duct with inside diameters  $\geq 32"$  ( $\geq 813$  mm), shall be lined with 1" (25 mm) Spiracoustic Plus LD Round Liner Board\*.

#### ☐ For ductwork requiring 1½" (38 mm) Spiracoustic Plus System Lining:

- a. The installed 1½" (38 mm) Spiracoustic Plus System lining shall have a Thermal Resistance (R-Value) of 6.4 at 75°F (1.13 at 24°C) mean temperature, and a Noise Reduction Coefficient (NRC) of 0.85 per ASTM C 423, Type "A" mounting.
- b. Metal duct with inside diameter range of 12" (305 mm) - 20" (508 mm), shall be lined with 1½" (38 mm) Spiracoustic Plus VSD Round Liner Board.
- c. Metal duct with inside diameter range of 22" (559 mm) - 38" (965 mm), shall be lined with 1½" (38 mm) Spiracoustic Plus SD Round Liner Board.
- d. Metal duct with inside diameters  $\geq 40"$  ( $\geq 1016$  mm), shall be lined with 1½" (38 mm) Spiracoustic Plus LD Round Liner Board\*.

#### ☐ For ductwork requiring 2" (51 mm) Spiracoustic Plus System Lining:

- a. The installed 2" (51 mm) Spiracoustic Plus System lining shall have a Thermal Resistance (R-Value) of 8.4 at 75°F (1.48 at 24°C) mean temperature, and a Noise Reduction Coefficient (NRC) of 0.95 per ASTM C 423, Type "A" mounting.
- b. Metal duct with inside diameter range of 14" (356 mm) - 22" (559 mm), shall be lined with 2" (51 mm) Spiracoustic Plus VSD Round Liner Board.
- c. Metal duct with inside diameter range of 24" (610 mm) - 58" (1473 mm), shall be lined with 2" (51 mm) Spiracoustic Plus SD Round Liner Board.
- d. Metal duct with inside diameters  $\geq 54"$  ( $\geq 1372$  mm), shall be lined with 2" (51 mm) Spiracoustic Plus LD Round Liner Board\*.

#### C. IEQ Provisions

Spiracoustic Plus System products shall be factory coated with a black acrylic polymer formulated with an immobilized, EPA-registered, protective agent to protect the coating from potential growth of fungus and bacteria, and shall meet the requirements of the following test procedures:

- a. No detectable fiber loss under electron microscope analysis of isokinetic air sampling at maximum rated velocity, using UL 181 test duct configuration.
- b. No observed microbial growth based on ASTM G 21 and G 22 tests for fungus and bacteria growth.
- c. Conformance to the requirements of NFPA 90A and 90B for FHC 25/50 and limited combustibility.
- d. Conformance to the requirements of the State of Washington Building Services Department requirements for emissions of total volatile organic compounds (TVOC) and formaldehyde (CHOH) in accordance with ASTM D 5116.

#### D. Restrictions

It is recommended that Spiracoustic Plus System products **not** be used in the following applications:

1. In air duct systems operating continuously in excess of 250°F (121°C).
2. Where velocities exceed 6000 fpm (30.5 m/sec).
3. In ducts used for conveying solids or particulates.
4. In kitchen or corrosive fume exhaust ducts.
5. In systems supplying hospital-sensitive areas such as surgical suites, maternity wards, intensive care units, and isolation areas where 90% effective (or greater) terminal filtration is not used (per US Department of Health, Education and Welfare).
6. Within 6' (1.83 m) of outside air intake grilles.
7. In air duct systems exposed to weather or buried below grade that are not sealed and protected against water incursion.
8. In contact with any HVAC equipment wet surface.

\* Johns Manville has tested to 72" (1829 mm) ID; please contact your Johns Manville representative for recommendations on larger air ducts.

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## Round Duct Liner System

### Guide Specifications

#### E. Installation

1. Spiracoustic Plus System lining shall be shop-installed in all fittings. Straight duct sections may have Spiracoustic Plus System products shop-installed, at the contractor's option, or lining may be installed in straight sections on site.
2. Installation of the round liner products into the metal duct-work shall be in accordance with the current Johns Manville "Spiracoustic Plus Round Duct Liner Installation Guide", publication AHS-306.
3. Each section or fitting shall be inspected for damage or insulation voids prior to installation, and repaired as follows:
  - a. Small voids or gaps ( $< \frac{1}{2}$ " [ $< 13$  mm]) shall be filled and/or buttered using Johns Manville SuperSeal® HV or SuperSeal® Duct Butter.
  - b. Large voids or gaps ( $> \frac{1}{2}$ " [ $> 13$  mm]) shall be repaired by cutting a suitable patch section. The patch shall be coated with SuperSeal HV on all edges prior to installation. After patch installation, the airstream surface shall be buttered with SuperSeal HV or SuperSeal Duct Butter.
  - c. Tears or abrasions of the airstream surface shall be sealed using SuperSeal HV, SuperSeal Duct Butter or SuperSeal Edge Treatment.
  - d. Tears or abrasions which result in a reduction of insulation thickness  $> \frac{1}{4}$ " ( $> 6$  mm) shall have a patch section inserted as detailed above.
  - e. Where the edges of the insulation show evidence of delamination, the damaged area should be secured with SuperSeal HV prior to the surface coating application.

#### F. Materials

1. All duct materials and accessories used in the fabrication and installation of the duct system shall meet the requirements of NFPA 90A and/or NFPA 90B.
2. All factory-applied coating repair and fabrication alteration shall be made using SuperSeal products to ensure performance and system integrity. Failure to use SuperSeal products will void product warranties.

#### ISO 9000 Certification

Johns Manville mechanical 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.



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The physical and chemical properties of the Spiracoustic Plus™ Round Duct Liner System 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. Numerical flame spread and smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Regional Sales Office nearest you to assure current information.

**All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions including Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions, Limited Warranty and Limitation of Remedy, and information on other Johns Manville thermal insulations and systems, call (800) 654-3103.**