

Quality People. Building Solutions.

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Date: 5/17/2024

Return Request: 5/27/2024

Project: CALS Main Library Renovations

Supplier: Coleman Industrial Construction

Manufacturer: Various

Submittal: Duct Insulation

Submittal Number: 23 07 13-01

Drawing # and Installation: Mechanical Drawings

ARCHITECT

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ENGINEER

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GENERAL CONTRACTOR

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MECHANICAL SUBCONTRACTOR

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Notes:

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23-8016

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April 30, 2024

Comfort Systems USA
9924 Landers Rd
North Little Rock, AR 72117

Mr. Daniel Pierce

Re: Mechanical Insulation Submittals for **CALS Main Reno**, Little Rock, Arkansas.

Specs on prints.

The following items will be insulated with 1 LB Johns Manville Duct Wrap with a foil scrim kraft vapor barrier jacket. All joints and seams will be sealed with 3" wide FSK tape.

Item #1 Round Supply/Return/OSA Duct ----- 2" Thick

Thank You,
Chad Bartlett

DESCRIPTION

Microlite® FSK Formaldehyde-free™ duct wrap insulation is a lightweight, highly resilient, blanket-type thermal insulation. The insulation blanket is manufactured from rotary-process fiberglass bonded with a formaldehyde-free resin.

AVAILABLE FORMS

Microlite Formaldehyde-free™ insulation is available in a variety of densities, thicknesses and roll lengths. It is supplied with an FSK (foil-scrim-kraft) vapor barrier facing to meet installed performance requirements, with a 2" (51 mm) stapling tab. Microlite FSK is 48" (1219mm) wide.

USES

Microlite insulation is recommended as thermal insulation for the exterior of HVAC systems or other spaces or surfaces where temperature control is required.

LIMITATION

Microlite FSK duct wrap is not recommended for use on duct systems in service at temperatures above 250°F (121°C). It should not be used in weather-exposed applications without proper protection.

STORAGE

Microlite FSK duct wrap should be kept clean and dry during storage, transport, installation, and system operation.

FACING INFORMATION

FSK Aluminum Foil

Reinforced with fiber glass scrim laminated to UL-rated kraft.

Permeance: 0.02 perms*

*Per ASTM E96, Procedure A for facing material prior to lamination. After lamination, permeance values may be higher.

GENERAL PROPERTIES

Temperature (max.) – ASTM C411	250°F (121°C)
Water vapor sorption – ASTM C1104	<5% by weight
Corrosivity with steel – ASTM C665	Does not accelerate
Fungi resistance – ASTM C1338	Does not breed or promote

STANDARD THICKNESSES AND PACKAGING

	100' Roll (31 m)	75' Roll (23 m)	50' Roll (15 m)	45' Roll (13.7 m)	35' Roll (10.6 m)	30' Roll (9.14 m)
Type	Thickness, in (mm)					
75	1 (24)*, 1 ½ (38)	2 (51), 2½ (56)	3 (76),	4 2/5 (112)	5 ¾ (146)	7 (178)
100	1 ½ (38)	2 (51)	–			
150	–	1 ½ (38)	2 (51)			

*1" for Canadian use only
Note: Additional thicknesses, widths and other lengths available on special order. Contact Regional Sales Office for availability.

RECYCLED CONTENT



SURFACE BURNING CHARACTERISTICS

Microlite insulation meets the Surface Burning Characteristics and Limited Combustibility of the following standards:

Standard/Test Method

- ASTM E84
- UL 723
- NFPA 90A and 90B
- UL Guide No. 40 U8.3. Card R3711
- CAN/ULC S102

Maximum Flame Spread Index	25
Maximum Smoke Developed Index	50

Note: Faced materials are tested as composite products (insulation, adhesive and facing).

SPECIFICATION COMPLIANCE

ASTM C1290	Type 75, 100, & 150
ASTM C553*	
Type I, Type II	Type 75 & 100
Type I, Type II, Type III	Type 150
<i>*For faced material: 250°F (121°C) maximum temperature.</i>	
ASTM C1136s†	
Type II	FSK Facing
<i>†Replaces HH-B-100B, Type II.</i>	
Canada: CGSB 51-GP-11M	
NYC MEA 40-75-M	

SUSTAINABLE BUILDING CERTIFICATIONS

GREENGUARD®	Certified
GREENGUARD® GOLD	Certified
FORMALDEHYDE FREE	Validated

GREENGUARD® Certified products have been screened for more than 10,000 volatile organic compounds (VOCs) and meet stringent standards for low chemical emissions based on established criteria from key public health agencies. This product is also a UL Validated Formaldehyde-Free product, meeting recommendations established by the California Air Resources Board and the EPA to use building materials and insulation made without formaldehyde.



MICROLITE® FSK
FSK-FACED FORMALDEHYDE-FREE™ FIBERGLASS DUCT WRAP

DATA SHEET

APPLICATION RECOMMENDATIONS

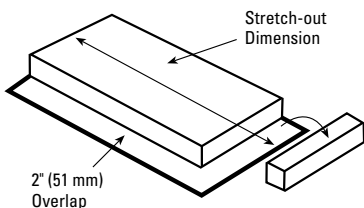
The R-value will vary depending upon how much the insulation is compressed during installation. To obtain the published installed R-values, the insulation stretch-out should be determined using the following table:

Duct Wrap Stretch-outs

Labeled Thick. (in)	Installed Compressed Thickness (in)	Stretch-out		
		Round	Square	Rectangular
1	0.75	P+ 7.0"	P+ 6.0"	P+ 5.0"
1½	1.125	P+ 9.5"	P+ 8.0"	P+ 7.0"
2	1.50	P+ 12.0"	P+ 10.0"	P+ 8.0"
2 ½	1.65	P+ 13.0"	P+ 11.0"	P+ 8.5"
3	2.25	P+ 17.0"	P+ 14.5"	P+ 11.5"
4 2/5	3.30	P+ 24.5"	P+ 21.0"	P+ 19.0"
5 ¾	4.31	P+ 30.0"	P+ 27.0"	P+ 25.0"
7	5.25	P+ 36.0"	P+ 33.0"	P+ 31.0"

Stretch-outs include 2" (51 mm) for overlap. P = perimeter of duct to be insulated.

Prepare overlap by removing approximately 2" (51 mm) of insulation from facing.



Before applying duct wrap, sheet metal duct shall be clean, dry and tightly sealed at all joints and seams.

Wrap insulation around duct with facing to the outside so the 2" (51 mm) flap completely overlaps facing and insulation at the other end of stretch-out. Insulation shall be snugly butted.

Secure seams with outward clinching staples placed approximately 6" (152mm) on center or tape tabs of 8" or longer. If required, seal seam with pressure-sensitive tape designed for use with duct insulation. Insulation on the underside of ducts spanning 24" (610 mm) or greater shall be secured with mechanical fasteners and speed clips spaced approximately 18" (457 mm) on center. Fasteners should be cut off flush after the speed clips are installed, and when required, sealed with the same tape as specified above.

Adjacent sections of duct wrap insulation shall be snugly butted with the circumferential 2" (51 mm) tape flap overlapping and secured as recommended for the longitudinal seam. When a vapor seal is required, two coats of vapor retarder mastic reinforced with one layer of 4" (102 mm) wide, open-weave glass fabric may be used in lieu of pressure-sensitive tape.

GUIDE SPECIFICATIONS

Insulation for Metal Ducts. All ducts shall be insulated on the outside with a Formaldehyde-free™, flexible glass fiber blanket. Microlite Formaldehyde-free™ fiber glass duct wrap insulation should have a minimum installed R-value* of _____, and a Type _____ facing. Insulation shall be furnished with a factory-applied facing with a composite UL FHC rating of 25/50.

*The minimum insulation installed R-value should be determined in accordance to the duct operating and ambient conditions.

THERMAL CONDUCTIVITY (ASTM C518)

Type	k* Compressed Thickness		k Labeled Thickness	
	Btu•in/(hr•ft²•°F)	W/m²•°C	Btu•in/(hr•ft²•°F)	W/m²•°C
75	0.27	0.039	0.29	0.042
100	0.25	0.036	0.27	0.039
150	0.24	0.035	0.25	0.036

Conductivity at 75°F (24°C) mean temperature.

*Tested with material thickness compressed 25%.

INSTALLED R-VALUES

Type	Labeled Thickness		Installed "R"***		Out-of-Package "R"	
	in	mm	(hr•ft²•°F)/Btu	m²•°C/W	(hr•ft²•°F)/Btu	m²•°C/W
Type 75 - 0.75 pcf (12kg/m³)						
75	1	25	3.0	0.53	3.8	.67
	1½	38	4.2	0.74	5.2	0.92
	2	51	5.6	0.99	6.9	1.22
	2 ½	56	6.0	1.08	7.5	1.33
	3	76	8.3	1.46	10.3	1.81
	4 2/5	112	12.0	2.16	15.0	2.66
	5 ¾	146	16.0	2.82	20.0	3.52
	7	178	19.0	3.35	23.0	4.05
Type 100 - 1.00 pcf (16kg/m³)						
100	1½	38	4.5	0.79	5.6	0.99
	2	51	6.0	1.06	7.4	1.30
Type 150 - 1.5 pcf (24kg/m³)						
150	1½	38	4.7	0.83	6.0	1.06
	2	51	6.3	1.11	8.0	1.41

***Installed R-value calculated with a material thickness compressed to a maximum of 25% following recommended duct wrap stretch-outs.



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Eastern Region & Canada
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Defiance, OH 43512
800-334-2399
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Denver, CO 80217
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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 Microlite FSK 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 or call (800) 654-3103.



Technical Data Sheet

3M™ Venture Tape™ FSK Facing Tape
1525CW



[Product Details](#)



[Regulatory Info/SDS](#)

Product Description

3M™ Venture Tape™ FSK Facing Tape 1525CW is a foil/scrim/kraft (FSK) lamination coated with a cold weather solvent acrylic pressure sensitive adhesive. 3M™ Venture Tape™ 1528CW is a FSK 2.5" disc version of 1525CW.

Product Features

- Cold weather adhesive performs well over a wide temperature range
- Excellent performance in demanding heat and humidity conditions
- Conforms well to irregular surfaces

Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Typical Physical Properties

Attribute Name	Test Method	Value
Color		Natural Aluminum
Adhesive Type		Acrylic
Backing		FSK
Backing Thickness	ASTM D3652	0.1 mm (4 mil)
Total Tape Thickness	ASTM D3652	0.14 mm (5.5 mil)
Liner		Release Liner

Typical Performance Characteristics

Attribute Name	Test Method	Temperature	Value
180° Peel Adhesion	ASTM D3330	22 °C (72 °F)	7.2 N/cm (66 oz/in) ¹
Elongation at Break	ASTM D3759		2 %
Tensile Strength	ASTM D3759		68.3 N/cm (39 lb/in)

¹ 12 in/min (300 mm/min)

Attribute Name	Value
Long Term Temperature Resistance	116 °C (240 °F) ¹
Minimum Long Term Temperature Resistance	-40 °C (-40 °F) ¹

¹ Long Term (day, weeks)

Handling/Application Information

Application Examples

- Sealing applications for fibrous ductboard, FSK-faced duct wrap and sheet metal ducts.
- Vapor seal for reinforced aluminum faced fiberglass or mineral wool thermal insulation.

Certifications/Standards

Certifications

- UL723 Classified (10/10 Flame/Smoke Rating) [UL file #R10984]

- CAN/ULC S102 (10/10 Flame/Smoke Rating) [UL file #R10984]
- Facing meets ASTM C1136, type II and IV

Storage and Shelf Life

Store in a clean, dry place. Temperature of 40-80°F (4-26°C) and 40 to 50% relative humidity are recommended. To obtain best performance, use this product within 24 months from date of manufacture.

Available Sizes

Attribute Name	Value
Standard Roll Length	45.7 m (50 yd)

Information

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ISO Statement

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