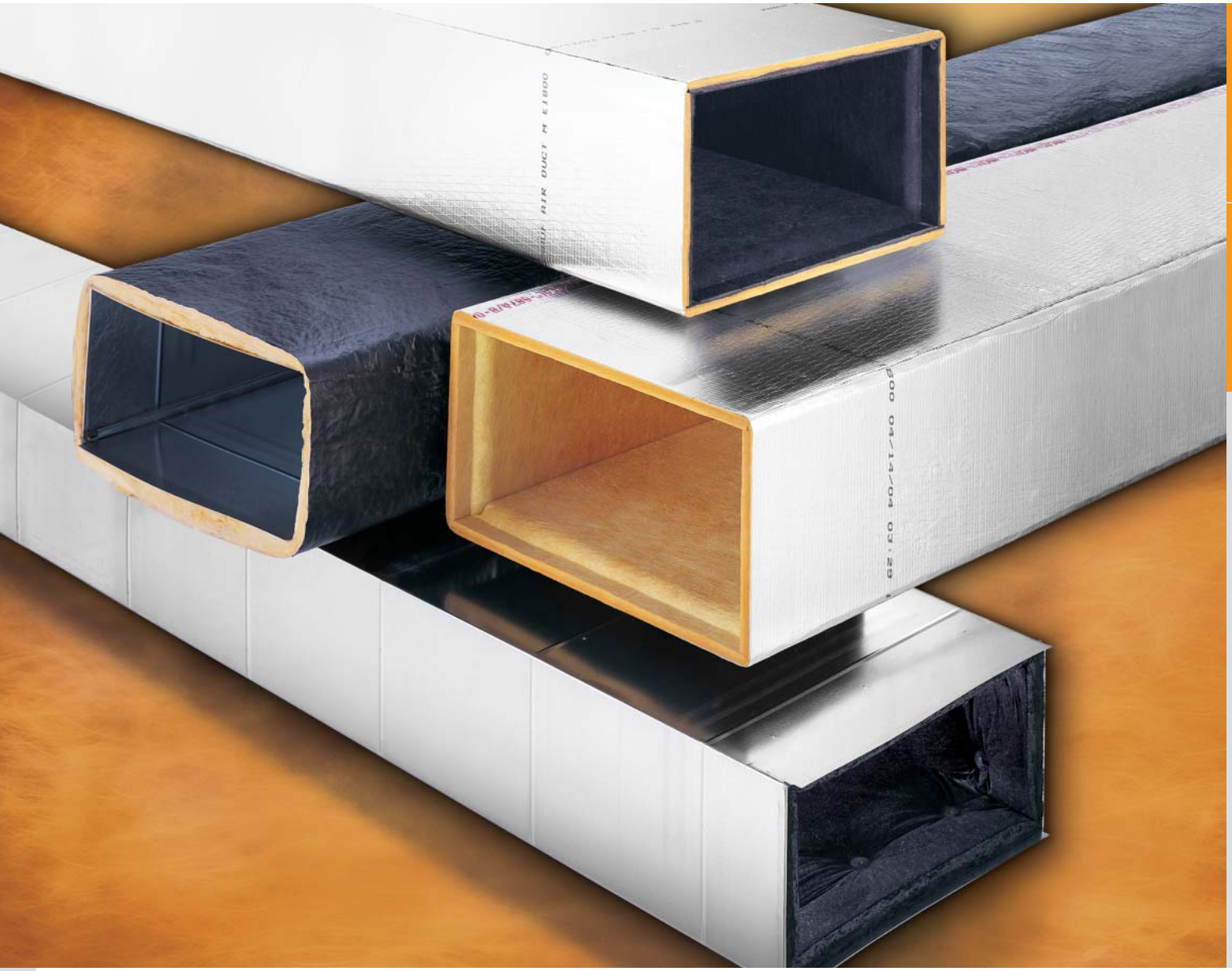
KNAUF INSULATION



AH-FL-11 05-07

Full Line Catalog

Air Handling Products

Air Duct Board-M and AGM, Duct Liner E•M, Textile Duct Liner, Rigid Plenum Liner and Duct Wrap

A Full Line of Air Handling Products

Delivering greater comfort, improved indoor air quality and more cost-effective energy savings.

Quiet, Efficient Air Delivery

For more than sixty years, fiber glass insulation has been used in the fabrication of air handling systems for residential, industrial and commercial structures. Fiber glass insulation provides quiet, efficient air delivery, cost-effective energy conservation and is the key to the quality of your indoor environment.

Fiber glass insulation is used in air handling systems for:

- Acoustical control—absorbs noise generated by central air handling equipment and air movement through the ducts.
- Temperature control—delivers heated or cooled air at optimal comfort levels.
- Energy conservation—controls heat loss or gain through air duct walls, reducing the HVAC operating costs.

Greenguard™ Certification

Knauf Insulation provides the best quality products for every air handling need, most with Greenguard certification. This means these products are low-emitting. In addition, Knauf Duct Wrap recently earned Greenguard For Children and Schools™ certification. Greenguard's Children and Schools standard sets even stricter indoor air quality requirements for applications like classroom and daycare facilities, addressing growing concerns over indoor pollution exposure among children.

Knauf Air Duct Boards—Air Duct Board-M and Air Duct Board-AGM

Insulating with Knauf Air Duct Boards provides duct construction and insulation in a single step. Air Duct Board-M with Hydroshield® Technology is faced with a tightly bonded non-woven black mat for greater airstream surface durability. Knauf Air Duct Board-AGM has a mat faced airstream surface and provides significant energy savings and acoustical benefits.

Knauf Air Duct Liners—Duct Liner E•M, Textile Duct Liner and Rigid Plenum Liner

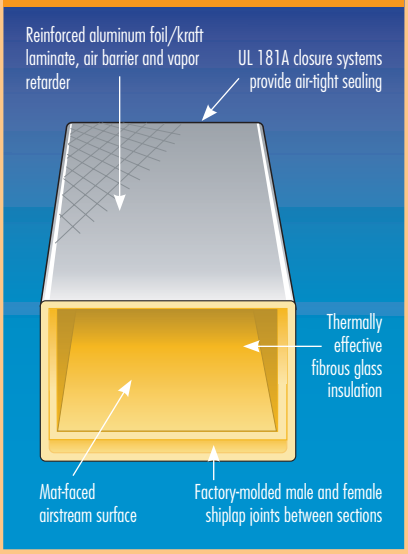
Fiber glass duct liners are adhered to sheet metal with adhesive and metal fasteners so the interior of the duct or plenum is completely insulated—with no interruptions or gaps. Knauf Duct Liner E•M combines durability with efficient sound absorption and low thermal conductivity. Knauf Textile Duct Liner with Hydroshield® Technology is available for those who prefer a textile product and Knauf Rigid Plenum Liner is specifically designed for plenums and sheet metal ducts to reduce duct-transmitted noise.

Knauf *Friendly Feel*® Duct Wrap with KwikStretch® Markings

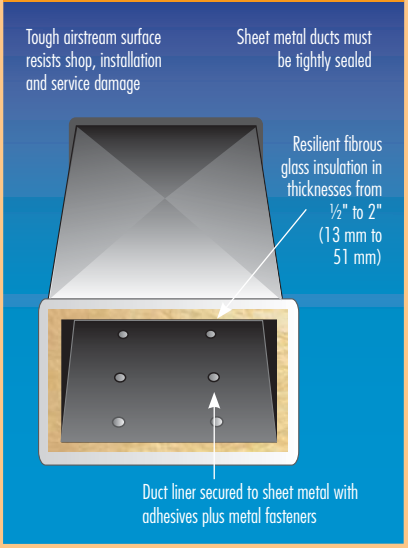
You can insulate the exterior of sheet metal ducts by wrapping the metal duct with duct wrap, a flexible blanket of fiber glass with a vapor retarder facing. Duct wrap reduces heat loss or gain, conserves energy and controls moisture condensation. Flexible and lightweight, Knauf *Friendly Feel*® Duct Wrap with KwikStretch® Markings is perfectly suited for use on commercial or residential air ducts.

Air Handling Products Help Deliver Optimal Comfort.

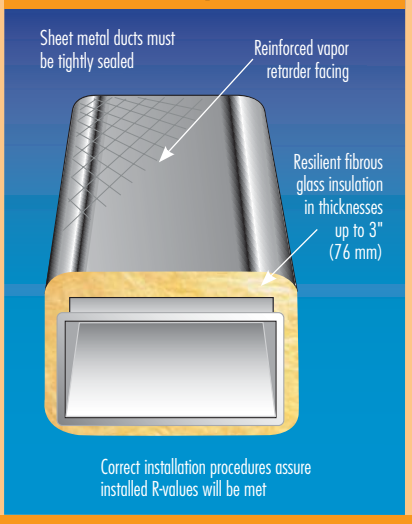
With Air Duct Board



With Duct Liner



With Duct Wrap



Knauf Air Duct Board-M with Hydroshield® Technology adds an extra layer of protection, reducing the opportunity for water to penetrate the board.

Lightweight and durable—allows for assembly and fabrication at the shop or the jobsite.

Knauf Air Duct Board-AGM has a mat-faced airstream surface and a Foil-Scrim-Kraft (FSK) facing on the outside.

Duct Construction and Insulation in One:
Knauf Air Duct Board-M and Air Duct Board-AGM

Ductwork fabricated from Knauf Air Duct Board is the ideal solution to avoid the excess noise ("booming" and "cracking" sounds), excess labor, material and labor costs associated with sheet metal ducts. Knauf Insulation offers two high quality boards—Air Duct Board-M with Hydroshield® Technology and Air Duct Board-AGM.

Knauf Air Duct Board-M

Knauf Air Duct Board-M with Hydroshield® Technology features a black mat that is 20% less porous to air than coated duct board products. Hydroshield® Technology enhances the water hold-out properties of the product by helping to keep water from penetrating the air-stream surface. The black mat facing provides added durability and gives a cleaner cut than standard products.

Knauf Air Duct Board-M is available in both EI-475 and EI-800 stiffness ratings with a factory molded shiplap edge or butt edge.

Knauf Air Duct Board-M

- Mat facing with Hydroshield® Technology adds an extra layer of superior protection, reducing the chance of moisture penetration.
- Low thermal conductivity of 0.23 at 75°F (24°C) mean temperature.
- Excellent acoustical characteristics.
- Significantly more resistant to abuse than standard duct board.

Knauf Air Duct Board-AGM

- AGM facing provides a smooth airstream surface.
- Lower installed cost than lined and wrapped sheet metal ducts.
- Quiet, efficient air delivery.

Knauf Air Duct Board-AGM

Known as the industry standard, Knauf Air Duct Board-AGM has a non-woven all-glass mat facing that ensures a smoother airstream surface. In addition, the outside is faced with a Foil-Scrim-Kraft (FSK) vapor retarder.

Knauf Air Duct Board-AGM is used to fabricate rectangular or Max[10] air duct systems for commercial and residential air handling where good temperature control and noise absorption are required. Knauf Air Duct Board-AGM is available in both EI-475 and EI-800 stiffness ratings with a factory molded shiplap edge or butt edge.

Knauf Insulation's rotary production process starts with fiber glass designed for insulation, turning out a consistent base blanket.

Knauf Rigid Plenum Liner offers an optimal combination of efficient sound absorption, thermal conductivity and minimal air surface friction.

Knauf Textile Duct Liner is flexible, yet durable with a tough mat facing and an encapsulant edge coating to eliminate flaring.

Line Metal Ducts with Thermal and Acoustical Protection:

Knauf Duct Liner E•M, Textile Duct Liner & Rigid Plenum Liner

Optimum thermal performance and acoustical absorption can be achieved when sheet metal ductwork is lined with a blanket of fiber glass insulation. Knauf Insulation offers a choice of three durable liners, specifically designed to meet the unique needs of the sheet metal market.

Knauf Duct Liner E•M

Lower density plus better performance equals a lower price tag and satisfied customers. That sums up Knauf Duct Liner E•M. E•M has a consistent base blanket and a tough mat surface to resist mechanical abuse. Its factory-applied encapsulant edge coating eliminates flaring and lessens the need for buttering, saving time and money. With an excellent NRC rating of .70, Knauf Duct Liner E•M keeps mechanical sound and crosstalk to a minimum. And it's durable, with no airstream erosion (tested to 15,000 fpm).

Knauf Textile Duct Liner

Knauf Textile Duct Liner with Hydroshield® Technology gives contractors a real choice. The base blanket is flexible, yet durable with a tough mat facing and an encapsulant edge coating to eliminate flaring. Hydroshield® Technology helps to keep moisture from penetrating the air-stream surface of the liner, reducing the chance for water to penetrate the blanket. It can withstand operating temperatures of 250°F (121°C) and air velocities of 6000 fpm (1829 mpm).

Knauf Rigid Plenum Liner

This heavy-density fiber glass board is made from inorganic glass fibers bonded by a thermosetting resin. A black polymer overspray is applied to the airstream side for a smooth, tough finish. It offers an optimal combination of efficient sound absorption, low thermal conductivity and minimal air surface friction.

Knauf Duct Liner E•M

- Factory-applied encapsulant edge coating virtually eliminates the need for buttering.
- Rolled with the airstream surface to the inside for easier fabrication.
- Better acoustical performance with a lower density.
- Greenguard Certified for superior indoor air quality (IAQ) performance.

Knauf Textile Duct Liner

- Hydroshield Technology® helps keep moisture from penetrating the airstream surface.
- Fire-resistant, non-corrosive and durable.

Knauf Rigid Plenum Liner

- Interior insulation material reduces duct-transmitted noise.
- Fire-resistant and non-corrosive, with low thermal conductivity.
- Greenguard Certified for superior indoor air quality (IAQ) performance.

Knauf Friendly Feel Duct Wrap for cooling, heating or dual temperature service.

Knauf Duct Wrap with Black PSK facing is a desirable solution for exposed ductwork eliminates the need to paint.

Both white and black PSK facings offer exceptional durability and performance for exposed applications.

Wrap It Up with a *"Friendlier Feel"*:
Knauf *Friendly Feel*® Duct Wrap

Sheet metal ductwork requires thermal and acoustical insulation to control temperature and condensation. Knauf *Friendly Feel*® Duct Wrap with KwikStretch® Markings insulates the exterior of sheet metal with a highly resilient blanket in commercial and residential heating and cooling duct applications.

Knauf *Friendly Feel* Duct Wrap
Easy to work with. . . consistent quality. . . excellent recovery. . . all features associated with Knauf Duct Wrap. Add to that list—friendly feel. Knauf Duct Wrap is soft to the touch, making it easy and friendly to handle. It is made from highly resilient, inorganic glass fibers bonded by a thermosetting resin.

Knauf *Friendly Feel*® Duct Wrap

- KwikStretch® Markings for easier, faster measurement.
- Variety of facings for exceptional durability and performance in exposed applications.
- Low "k" factor for significantly reduced heat gain/loss when applied with proper compression.
- Flexible and lightweight.
- Knauf Duct Wrap with FSK and PSK facings assure condensation control when properly installed.
- Soft, comfortable texture for easier handling.
- Greenguard Certified for superior indoor air quality (IAQ) performance.
- Greenguard Certified For Children and Schools™—a stricter requirement for applications like classroom and daycare facilities, addressing growing concerns over indoor pollution exposure among children.

It is available unfaced, with a foil-scrim-kraft (FSK) jacket or a black or white metalized polypropylene-scrim-kraft (PSK) jacket vapor retarders. The faced duct wrap products have a 2" (51 mm) stapling flange on one edge. Knauf FSK and PSK faced Duct Wrap has KwikStretch® Markings which makes job site measurement easy and accurate.

Knauf Duct Wrap conforms easily to flat or irregular sheet metal ducts and surfaces where temperature and condensation must be controlled. Duct Wrap conserves energy and improves the HVAC system, lowering operating costs. It also reduces sound transmission through the duct wall.

Knauf Air Duct Board Technical Information

		Size	Edge	Packaging	Thermal Conductivity k-Value (S.I.) (ASTM C 177)*	Thermal Resistance R-Value (S.I.) (ASTM C 177)*	Specification Compliance
Duct Board-M 	**1" (25 mm)**	48" x 96" (1219 mm x 2438 mm)	Butt, Shiplap	Cartons, Pallets	EI-475/ EI-800 .23 (.033)	4.3 (.76)	**U.S.** – ASTM C 1136, Type II (FSK facing); ASTM D 5116; ASTM G 21, 22; BOCA; CABO; California Title 24; Corps of Engineers Guide Specifications, ICBO; International Mechanical Code; NFPA 90A and 90B; SBCCI; State of Alaska IAQ Specificatations; State of Washington IAQ Specifications; UL 181, Class 1. **Canada** – CAN/ULC S102-M88; CAN/CGSB 51-GP-52M (facing); CAN/CGSB 51.10-92; ULC Issue 869C, Class 1.
		48" x 120" (1219 mm x 3048 mm)	Butt, Shiplap				
	1½"* (38 mm)	48" x 120" (1219 mm x 3048 mm)	Butt, Shiplap		EI-800 .23 (.033)	6.5 (1.14)	
	2" (51 mm)	48" x 120" (1219 mm x 3048 mm)	Butt, Shiplap			8.7 (1.53)	
		* Mean Temperature 75°F (24°C)					
Duct Board-AGM 	**1" (25 mm)**	48" x 96" (1219 mm x 2438 mm)	Butt, Shiplap	Cartons, Pallets	EI-475/ EI-800 .23 (.033)	4.3 (.76)	**U.S.** – ASTM C 1136, Type II (FSK facing); ASTM D 5116; ASTM G 21, 22; BOCA; CABO; California Title 24; Corps of Engineers Guide Specifications, ICBO; International Mechanical Code; NFPA 90A and 90B; SBCCI; State of Alaska IAQ Specificatations; State of Washington IAQ Specifications; UL 181, Class 1. **Canada** – CAN/ULC S102-M88; CAN/CGSB 51-GP-52M (facing); CAN/CGSB 51.10-92; ULC Issue 869C, Class 1.
		48" x 120" (1219 mm x 3048 mm)	Butt, Shiplap				
	1½"* (38 mm)	48" x 120" (1219 mm x 3048 mm)	Butt, Shiplap		EI-800 .23 (.033)	6.5 (1.14)	
	2" (51 mm)	48" x 120" (1219 mm x 3048 mm)	Butt			8.7 (1.53)	
		* Mean Temperature 75°F (24°C)					

Surface Burning Characteristics	Temperature Range (ASTM C 411)	Air Velocity (UL 181)	Internal Static Pressure (UL 181)	Water Vapor Sorption (ASTM C 1104)	Acoustical Performance
UL/ULC Listed; Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84, CAN/ULC S102-M88, NFPA 255 and UL 723.	Up to 250°F (121°C)	Maximum 5000 fpm (1524 mpm) Tested to 12,500 fpm (3810 mpm)	Maximum ± 2" water (498 pascals [Pa])	Less than 3% by weight.	

Acoustical Insertion Loss Testing (dB10LF) (ASTM E 477)

1/3 Octave Band Center Frequency (Hz)

Type	63	125	250	500	1000	2000	4000	8000
1" (25 mm) 12 x 12	1.7	13.5	13.8	27.3	38.3	41.3	24.7	19.1
1" (25 mm) 12 x 24	0.6	8.9	10.2	21.0	39.0	29.7	18.9	15.7
1½" (38 mm) 12 x 12	1.7	12.0	20.9	26.0	46.5	38.9	24.7	20.0
1½" (38 mm) 12 x 24	1.7	8.9	15.9	25.2	45.8	28.2	19.1	16.3

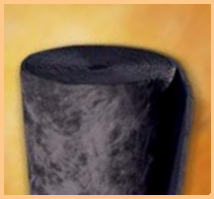
Surface Burning Characteristics	Temperature Range (ASTM C 411)	Air Velocity (UL 181)	Internal Static Pressure (UL 181)	Water Vapor Sorption (ASTM C 1104)	Acoustical Performance
UL/ULC Listed; Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84, CAN/ULC S102-M88, NFPA 255 and UL 723.	Up to 250°F (121°C)	Maximum 5000 fpm (1524 mpm) Tested to 12,500 fpm (3810 mpm)	Maximum ± 2" water (498 pascals [Pa])	Less than 5% by weight.	

Sound Absorption Coefficients (ASTM C 423, Type A Mounting)

1/3 Octave Band Center Frequency (Cycles/Sec.)

Type	125	250	500	1000	2000	4000	NRC
EI-475 1" (25 mm)	.03	.25	.62	.92	1.03	.97	.70
EI-800 1½" (38 mm)	.02	.44	.96	1.17	1.16	1.12	.95
EI-800 2" (51 mm)	.19	.64	1.08	1.13	1.06	1.06	1.00

Knauf Duct Liner Technical Information

		Thickness	Width	Length	Thermal Conductance "C" (S.I.) (ASTM C 177)**	Thermal Resistance "R" (S.I.) (ASTM C 177)**
Duct Liner E•M 	**1.5 PCF (24 kg/m³)**	1" (25 mm)	35.5"*, 46.25", 47", 47.5", 48", 56", 56.25", 56.5", 59", 59.5", 60" (902, 1175, 1194, 1207, 1219, 1422, 1428, 1435, 1499, 1511, 1524 mm)	100' (30.48 m)	.24 (1.42)	4.2 (.74)
		1" (25 mm)	47" (1194 mm)	50' (15.24 m)	.24 (1.42)	4.2 (.74)
		1½" (38 mm)	47", 48" (1194, 1219 mm)	50' (15.24 m)	.17 (.97)	6.0 (1.06)
		2" (51 mm)	47", 48" (1194, 1219 mm)	50' (15.24 m)	.13 (.74)	8.0 (1.41)
	2.0 PCF (32 kg/m³)	½" (13 mm)	35.5"*, 47", 47.5", 48", 59", 59.5" (902, 1194, 1207, 1219, 1499, 1511 mm)	100' (30.48 m)	.48 (2.73)	2.1 (.37)
		1" (25 mm)	47.5", 48" (1207, 1219 mm)	50' (15.24 m)	.24 (1.36)	4.2 (.74)
		1½" (38 mm)	47", 48" (1194, 1219 mm)	50' (15.24 m)	.16 (.74)	6.3 (1.11)
Textile Duct Liner 	**1.5 PCF (24 kg/m³)**	1" (25 mm)	35.5"*, 46.25", 47", 47.5", 48", 56", 56.25", 56.5", 59", 59.5", 60" (902, 1175, 1194, 1207, 1219, 1422, 1428, 1435, 1499, 1511, 1524 mm)	100' (30.48 m)	.28 (1.59)	3.6 (.63)
		1" (25 mm)	47" (1194 mm)	50' (15.24 m)	.28 (1.59)	3.6 (.63)
		1½" (38 mm)	47", 48" (1194, 1219 mm)	50' (15.24 m)	.19 (1.06)	5.4 (.94)
		2" (51 mm)	47", 48" (1194, 1219 mm)	50' (15.24 m)	.14 (.80)	7.1 (1.26)
	2.0 PCF (32 kg/m³)	½" (13 mm)	35.5"*, 47", 47.5", 48", 59", 59.5" (902, 1194, 1207, 1219, 1499, 1511 mm)	100' (30.48 m)	.52 (2.96)	1.9 (.34)
		1" (25 mm)	47.5",48" (1207, 1219 mm)	50' (15.24 m)	.26 (1.48)	3.8 (.68)
	3.0 PCF (48 kg/m³)	½" (13 mm)	47", 58" (1194, 1473 mm)	50' (15.24 m)	.48 (2.73)	2.1 (.37)
		1" (25 mm)	47.5", 56.25", 58", 59.25", 59.5" (1207, 1428, 1473, 1504, 1511 mm)	50' (15.24 m)	.24 (1.36)	4.2 (.73)
Rigid Plenum Liner 	**3.0 PCF (48 kg/m³)**	1" (25 mm)	24", 48" (610, 1219 mm)	36", 48", 72", 96", 120", (914, 1219, 1829, 2438, 3048 mm)	.23 (1.31)	4.3 (.76)
		1½" (38 mm)			.15 (.85)	6.5 (1.15)
		2" (51 mm)			.11 (.62)	8.7 (1.53)

*Not available with edge coating.

** Mean Temperature 75°F (24°C)

Specification Compliance	Surface Burning Characteristics	Temperature Range (ASTM C 411)	Air Velocity (UL 181)	Water Vapor Sorption (ASTM C 1104)	Sound Absorption Coefficients (ASTM C 423, Type A Mounting) 1/3 Octave Band Center Frequency (cycles/sec)						
					125	250	500	1000	2000	4000	NRC
U.S. – ASTM C 1071, Type I; ASTM D 5116; ASTM G 21, 22; California Title 24 (1.5 PCF, 1" and above); NFPA 90A and 90B; State of Alaska IAQ Specifications; State of Washington IAQ Specifications; GREENGUARD Environmental Institute™; SMACNA Application Standard for Duct Liners; NAIMA Fibrous Duct Liner Installation Standards. **Canada** – CAN/ULC S102-M88; CAN/CGSB 51. 11-92.	UL/ULC Classified; Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84, CAN/ULC S102-M88, NFPA 255 and UL 723.	Up to 250°F (121°C)	Maximum 6000 fpm (1829 mpm) Tested to 15,000 fpm (4572 mpm)	Less than 3% by weight.	.18	.36	.59	.86	.95	.90	.70
					.18	.36	.59	.86	.95	.90	.70
					.35	.51	.83	.93	.97	.96	.80
					.34	.64	.96	1.03	1.00	1.03	.90
					.09	.14	.40	.60	.73	.82	.45
					.25	.35	.69	.89	.96	1.01	.70
					.27	.55	.87	.99	1.00	.98	.85
U.S. – ASTM C 1071, Type I; ASTM G 21, 22; NFPA 90A and 90B; SMACNA Application Standard for Duct Liners; NAIMA Fibrous Glass Duct Liner Installation Standard.	UL Classified; Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84, NFPA 255 and UL 723.	Up to 250°F (121°C)	Maximum 6000 fpm (1829 mpm) Tested to 15,000 fpm (4572 mpm)	Less than 3% by weight.	.09	.31	.55	.72	.86	.93	.60
					.09	.31	.55	.72	.86	.93	.60
					.10	.38	.56	.79	.97	.80	.65
					.18	.58	.79	1.02	1.06	.99	.85
					.06	.14	.32	.55	.68	.86	.40
					.10	.26	.53	.76	.83	.84	.60
					.02	.13	.30	.56	.73	.84	.45
					.09	.28	.63	.86	.91	.92	.65
U.S. – ASTM C 1071, Type II; ASTM D 5116; ASTM G 21, 22; California Title 24 (1.5 PCF, 1" and above); NFPA 90A and 90B; State of Alaska IAQ Specifications; State of Washington IAQ Specifications; GREENGUARD Environmental Institute™. **Canada** – CAN/ULC S102-M88; CAN/CGSB 51.11-92.	UL/ULC Classified; Does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84, CAN/ULC S102-M88, NFPA 255 and UL 723.	Up to 250°F (121°C)	Maximum 5000 fpm (1524 mpm) Tested to 12,500 fpm (3810 mpm)	Less than 3% by weight.	.13	.24	.56	.83	.92	.98	.65
					.19	.41	.89	1.02	1.03	1.04	.85
					.33	.67	1.07	1.07	1.03	1.06	.95

Knauf *Friendly Feel*® Duct Wrap Technical Information

Friendly Feel Duct Wrap

	Thickness	Width	Length	Facing	Packaging	Puncture Resistance (TAPPI Test T803) (Beach Units)	Specification Compliance
.75 PCF (12 kg/m³)	1½" (38 mm)	48" (1219 mm)	100' (30.48 m)	Unfaced, FSK and PSK	Rolls	FSK and PSK: 25	**U.S.** – ASTM C 553, Type I, II, III; ASTM D 795; ASTM C 1136, Type II; ASTM C 1290; California Title 24 (installed at 25% compression); HH-I-558C, Form B, Type I, Class 7; MIL-I-24244C; NFPA 90A and 90B; NRC Reg. Guide 1.36; GREENGUARD Certification, GREENGUARD For Children and Schools™ Certification. **Canada** – CAN/ULC S102-M88; CAN/CGSB-51.5M; Type II (FSK facing); CAN/CGSB-51.11-92.
	2" (51 mm)		75' (22.86 m)				
	2 3/16" (56 mm)		75' (22.86 m)	FSK			
	2½" (64 mm)		75' (22.86 m)	FSK			
	3" (76 mm)		50' (15.24 m)	FSK and PSK			
1.0 PSF (16 kg/m³)	1½" (38 mm)	48" (1219 mm)	100' (30.48 m)	Unfaced, FSK and PSK			
	2" (51 mm)		75' (22.86 m)				
1.5 PCF (24 kg/m³)	1½" (38 mm)	48" (1219 mm)	40' (12.19 m)	FSK and PSK			
	2" (51 mm)		40' (12.19 m)				

Acoustical Performance

Rectangular Sheet Metal Duct with Knauf Duct Wrap

			Duct Wrap		Insertion Loss dB/LF of Duct						
LG DIM	SM DIM	GA	NOM THK	DENS (PCF)	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
12"	12"	24	1.5"	0.75	0.6	0.6	0.6	0.7	7.4	14.2	20.9
24"	12"	24	1.5"	0.75	0.6	0.6	0.6	0.7	7.4	14.2	20.9
48"	12"	22	1.5"	0.75	0.5	0.5	0.5	0.6	7.4	14.1	20.9
24"	24"	22	1.5"	0.75	0.5	0.5	0.5	0.6	7.4	14.1	20.9
24"	12"	26	1.5"	0.75	0.8	0.8	0.8	0.8	7.5	14.2	21.0
24"	8"	26	2.0"	0.75	1.0	1.0	1.0	3.6	10.4	17.1	23.9

Thermal Conductivity k-Value (S.I.) (ASTM C 177)							Thermal Resistance R-Value**		Surface Burning Characteristics	Temperature Range (ASTM C 411)	Water Vapor Permeance (ASTM E 96, Procedure A)	Water Vapor Sorption (ASTM C 1104)
50°F (10°C)	75°F (24°C)	100°F (38°C)	125°F (52°C)	150°F (66°C)	175°F (80°C)	200°F (93°C)	Out Of Package	Installed 25% Comp				
0.28 (.040)	0.29 (.042)	0.31 (.045)	0.33 (.048)	0.36 (.052)	0.39 (.056)	0.43 (.063)	5.1	4.2	UL/ULC Classified (except PSK: ASTM E 84 only); Unfaced or composite (insulation, facing and adhesive) does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84, CAN/ULC S102-M88, NFPA 255 and UL 723.	Faced, can be used on ducts operating up to 250°F (121°C) Unfaced, up to 350°F (177°C)	FSK and white PSK facings have maximum water vapor permeance of .02 perms. Black PSK facing has a maximum water vapor permeance of .09 perms.	Less than 5% by weight when tested for 96 hours at 120°F (49°C) and 95% relative humidity.
							6.8	5.6				
							7.4	6.0				
							8.5	7.0				
							10.2	8.4				
0.26 (.037)	0.27 (.039)	0.29 (.042)	0.31 (.045)	0.34 (.049)	0.37 (.053)	0.40 (.058)	5.6	4.5				
							7.4	6.0				
0.23 (.033)	0.24 (.035)	0.26 (.037)	0.28 (.040)	0.31 (.045)	0.33 (.048)	0.36 (.052)	6.1	4.8				
							8.2	6.4				

** ASTM C 518, Mean Temperature 75°F (24°C)

Condensation Control

(Recommended minimum installed R-values for Condensation Control on flat surfaces. Surface Emittance: 0.2 (Aged aluminum foil or galvanized sheet metal).

Operating Temperatures															
	45°F (7°C)					55°F (13°C)					60°F (18°C)				
RH	Ambient Temperature (°F)					Ambient Temperature (°F)					Ambient Temperature (°F)				
%	70	80	90	100	110	70	80	90	100	110	70	80	90	100	110
60	2.2[1]	3.3[1]	4.3[2]	4.3[1]	5.4[3]	1.1[1]	2.2[1]	3.3[1]	3.3[1]	4.3[2]	1.1[1]	1.1[1]	2.2[1]	3.3[1]	4.3[2]
70	3.3[1]	5.4[3]	6.5[4]	7.6[5]	—	1.1[1]	3.3[1]	4.3[2]	6.5[4]	6.5[4]	1.1[1]	1.1[1]	3.3[1]	5.4[3]	6.5[4]
80	7.0[4]	—	—	—	—	3.3[1]	6.5[4]	—	—	—	2.2[1]	3.3[1]	6.5[4]	—	—
90	—	—	—	—	—	—	—	—	—	—	6.5[4]	—	—	—	—

[1] All Duct Wrap products
[2] 0.75 PCF 2" and greater; 1.0 PCF, 1½" and greater
1.5 PCF, 1½" and greater
[3] 0.75 PCF, 2" and greater; 1.0 PCF, 2"; 1.5 PCF, 2"
[4] 0.75 PCF 2½" and greatergreater
[5] 0.75 PCF, 3"

KNAUF INSULATION

Knauf Insulation is registered to ISO 9001:2000 in the prevention, detection and correction of problems in production and service areas.

The descriptions of chemical and physical properties of Knauf Insulation products listed in this catalog represent typical average values determined in accordance with accepted test methods. The data is subject to normal manufacturing and testing variations, and is subject to change without notice.

References to numerical flame spread ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

Check with your Knauf Insulation sales representative to ensure that the information in this catalog is the most current available.

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World Wide Web	www.KnaufInsulation.com

Knauf Duct Wrap products are certified for indoor air quality as a low emitting product by The GREENGUARD Environmental Institute™ to both the GREENGUARD Certification Program℠ and the more stringent GREENGUARD For Children and Schools™ standard. www.greenguard.org.

Knauf Duct Liner E•M and Rigid Plenum Liner products are certified for indoor air quality by The GREENGUARD Environmental Institute™, a global, non-profit organization, providing the world's leading guide to certified low emitting interior products and building materials through independent, indoor air quality laboratory testing. www.greenguard.org.

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