KNAUF INSULATION

Knauf Data Sheet | AH-DS-5 05-07

Friendly Feel® Duct Wrap
with KwikStretch® Markings

- For cooling, heating or dual temperature service.

- Friendly Feel® Duct Wrap—meets the most stringent IAQ tests—GREENGUARD For Children & Schools™ and California's Section 01350 standard.

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

- KwikStretch Markings allow for easier, faster measurement of stretch-out lengths.

- Black PSK facing is a desirable solution for exposed ductwork because of its appearance and resiliency.

Facts at a glance

- Fire-resistant facing
- Conforms to flat or irregular surfaces
- Excellent acoustical properties
- Tough and resilient

Friendly Feel® Duct Wrap with KwikStretch® Markings

Description

Knauf Friendly Feel® Duct Wrap with KwikStretch® Markings is a thermal and acoustical insulation blanket made from highly resilient, inorganic glass fibers bonded by a thermosetting resin. It is available unfaced, with a foil-scrim-kraft (FSK) jacket and with a white or black metalized polypropylene-scrim-kraft (PSK) jacket. Vapor retarders provide a 2" (51 mm) staple flange on one edge, and the factory-applied facing assures uniform quality. KwikStretch Markings on the staple flange allow for easy and accurate job site measurements.

Application

Knauf Friendly Feel® Duct Wrap is used as external insulation on commercial or residential heating or air conditioning ducts. It is suitable for the exterior of rectangular or round sheet metal ducts and spaces or surfaces where temperature and condensation must be controlled.

Features and Benefits

- Low “k” factor significantly reduces heat gain or loss when applied with proper compression.
- Flexible.
- Lightweight.
- KwikStretch Markings on the FSK and PSK staple flanges.
- Excellent acoustical properties.
- Tough and resilient.
- Energy conservation, which lowers operating costs.
- System efficiency increases; energy usage/costs decrease.
- Conforms easily to flat or irregular surfaces.
- Rolls allow for faster installation, lower labor costs.
- Easier, faster measurement of stretch-out lengths.
- Reduces sound transmission through the duct wall.
- Assured condensation control when used with FSK or PSK facings, proper installation and sealed joints, seams and penetrations.
- Resists damage in shipment and during and after installation.

Specification Compliance

In U.S.:

- ASTM C 553; Type I, II, III
- ASTM C 795
- ASTM C 1136; Type II
- ASTM C 1290
- GREENGUARD Environmental Institute™
- 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

In Canada:

- CAN/ULC S102-M88
- CAN/CGSB-51.5M; Type II (FSK facing)
- CAN/CGSB-51.11-92

Technical Data

Surface Burning Characteristics

- UL/ULC Classified (FSK).
- Unfaced or composite (insulation, facing and adhesive) does not exceed 25 Flame Spread, 50 Smoke Developed when tested in accordance with ASTM E 84 (PSK only), CAN/ULC S102-M88, NFPA 255 and UL 723.

Temperature Range (ASTM C 411)

- Faced, can be used on ducts operating up to 250°F (121°C).
- Unfaced, up to 350°F (177°C).

Water Vapor Permeance (ASTM E 96, Procedure A)

- 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.

Water Vapor Sorption (ASTM C 1104)

- Less than 5% by weight when tested for 96 hours at 120°F (49°C) and 95% relative humidity.

Corrosiveness (ASTM C 665)

- Will not accelerate corrosion of a steel panel compared to sterile cotton.

Mold Growth (ASTM C 1338)

- No growth.

Puncture Resistance (TAPPI Test T803) (Beach Unit)

- FSK and PSK: 25

Application & Specification Guidelines

Storage

- Protect stored insulation from water damage, construction damage and other abuse.
- If stored outside, proper protection from weather conditions should be provided.

Preparation

- Install Knauf Friendly Feel® Duct Wrap over clean, dry sheet metal ducts. All sheet metal joints and seams must be sealed to prevent air leakage from the duct.

Application

- Install Knauf Friendly Feel® Duct Wrap with facing to the outside to obtain specified R-value using a maximum of 25% compression.
- Butt all insulation joints firmly together. Longitudinal seam of the vapor retarder must be overlapped a minimum of 2" (51 mm). A 2" (51 mm) tab is provided for the circumferential seam and must be overlapped.

Insertion Loss (Reduction of Sound Transmitted Through Duct Wall)

(Sound and Vibration Design and Analysis, National Environmental Balancing Bureau, 1994)

		Duct Wrap		Insertion Loss, dB/LF of Duct						
Duct Dimensions	Sheet Metal	Nominal Thickness	Nominal Density	63Hz	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz
12" x 12" (305 mm x 305 mm)	24 GA	1½" (38 mm)	.75 PCF (12 kg/m^3)	.6	.6	.6	.7	7.4	14.2	20.9
24" x 12" (610 mm x 305 mm)	24 GA	1½" (38 mm)	.75 PCF (12 kg/m^3)	.6	.6	.6	.7	7.4	14.2	20.9
48" x 12" (1219 mm x 305 mm)	22 GA	1½" (38 mm)	.75 PCF (12 kg/m^3)	.5	.5	.5	.6	7.4	14.1	20.9
24" x 24" (610 mm x 610 mm)	22 GA	1½" (38 mm)	.75 PCF (12 kg/m^3)	.5	.5	.5	.6	7.4	14.1	20.9
24" x 12" (610 mm x 305 mm)	26 GA	1½" (38 mm)	.75 PCF (12 kg/m^3)	.8	.8	.8	.8	7.5	14.2	21.0
24" x 8" (610 mm x 203 mm)	26 GA	2" (51 mm)	.75 PCF (12 kg/m^3)	1.0	1.0	1.0	3.6	10.4	17.1	23.9

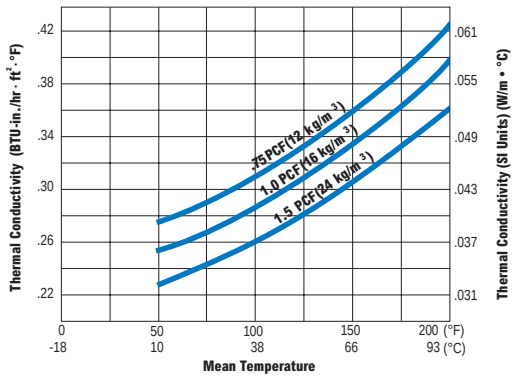
Condensation Control

Recommended minimum install R-Values for condensation control on flat surfaces. Surface emittance : 0.2 (aged aluminum foil or galvanized sheet metal).

	Operating Temperature															
RH	45°F (7°C) Ambient Temperature (°F)					55°F (13°C) Ambient Temperature (°F)					60°F (18°C) 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[2]	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]	—	—	—	—

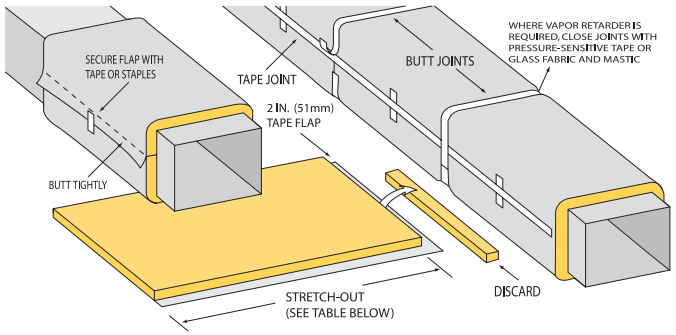
[1] All Duct Wrap products
[2] 0.75 PCF, 2" and greater; 1.0 PCF, 1½" and greater; 1.5 PCF, 1½" and greater
[3] 0.75 PCF, 2" and greater; 1.0 PCF, 2"; 1.5 PCF, 2"
[4] 0.75 PCF, 2½" and greater

Thermal Efficiency (ASTM C 177)



	0.75 PCF		1.0 PCF		1.5 PCF	
Mean Temperature	k	k (SI)	k	k (SI)	k	k (SI)
50°F (10°C)	.28	.040	.26	.037	.23	.033
75°F (24°C)	.29	.042	.27	.039	.24	.035
100°F ( )	.31	.045	.29	.042	.26	.037
125°F (52°C)	.33	.048	.31	.045	.28	.040
150°F (66°C)	.36	.052	.34	.049	.31	.042
175°F (80°C)	.39	.056	.37	.053	.33	.048
200°F (93°C)	.43	.063	.40	.058	.36	.052

Application



Stretch-Outs

Labeled Thickness	Installed Compressed Thickness	Round	Square	Rectangular
1½" (38 mm)	1⅛" (29 mm)	P+9½" (241 mm)	P+8" (203 mm)	P+7" (178 mm)
2" (51 mm)	1½" (38 mm)	P+12" (305 mm)	P+10" (254 mm)	P+8" (203 mm)
2 3/16" (56 mm)	1⅝" (42 mm)	P+13" (330 mm)	P+11" (279 mm)	P+8½" (216 mm)
2½" (64 mm)	1⅞" (48 mm)	P+14½" (368 mm)	P+12½" (318 mm)	P+9½" (241 mm)
3" (76 mm)	2¼" (57 mm)	P+17" (432 mm)	P+14½" (368 mm)	P+11½" (292 mm)

P = Perimeter of duct to be installed.

Forms Available/R-Values@75°F Mean Temperature

Density	Thickness	Width	Length	Facing	Out-Of Package R-Value	Installed R-Value
.75 PCF	1½" (38 mm)	48"	100' (30.48 m)	FSK, PSK	5.1	4.2
(12 kg/m³)	2" (51 mm)	(1219 mm)	75' (22.86 m)	unfaced	6.8	5.6
	2 3/16" (56 mm)		75' (22.86 m)	FSK	7.4	6.0
	2½" (64 mm)		75' (22.86 m)	FSK	8.5	7.0
	3" (76 mm)		50' (15.24 m)	FSK, PSK	10.2	8.4
1.0 PCF	1½" (38 mm)	48"	100' (30.48 m)	FSK, PSK	5.6	4.5
(16 kg/m³)	2" (51 mm)	(1219 mm)	75' (22.86 m)	unfaced	7.4	6.0
1.5 PCF	1½" (38 mm)	48"	40' (12.19 m)	FSK, PSK	6.1	4.8
(24 kg/m³)	2" (51 mm)	(1219 mm)	40' (12.19 m)		8.2	6.4

- Where vapor retarder performance is necessary, all penetrations, joints, seams and damage to the facing should be sealed with an FSK, PSK or foil tape or glass fabric and mastic prior to system startup.
- Pressure sensitive tapes should be a minimum 3" (76 mm) wide and be applied with moving pressure using an appropriate sealing tool. Staples should be outward clinch and placed approximately 6" (152 mm) on center.
- Closure systems should have a 25/50 F.H.C. per UL 723.
- For rectangular ducts over 24" (610 mm) wide, secure the insulation to the bottom side of the duct with mechanical fasteners spaced on 18" (457 mm) centers to reduce sag. Care should be taken to avoid overcompressing the insulation with the retaining washer.
- Unfaced Duct Wrap should be over-lapped with a minimum of 2" (51 mm) and fastened with 4" (102 mm) to 6" (152 mm) nails or skewers placed 4" (102 mm) apart, or secured with a wire or banding system. Care must be taken to avoid damaging the duct wrap. Refer to diagram for staple stitching and butt-joint method.

Installation Procedures

- Use the table (left) to determine stretch-outs required for the nominal thickness of insulation to limit average compression of the insulation 25% or less. Use KwikStretch Markings on the FSK or PSK staple flanges to speed measurement of duct wrap.

KNAUF INSULATION

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Fiber Glass and Mold

Fiber glass insulation will not sustain mold growth. However, mold can grow on almost any material when it becomes wet and contaminated with organic materials. Carefully inspect any insulation that has been exposed to water. If it shows any sign of mold, it must be discarded. If the material is wet but shows no evidence of mold, it should be dried rapidly and thoroughly. If it shows signs of facing degradation from wetting, it should be replaced. Air handling insulation used in the air stream must be discarded if exposed to water.

Notes

The chemical and physical properties of Knauf Friendly Feel Duct Wrap represent typical average values determined in accordance with accepted test methods. The data is subject to normal manufacturing and testing variations. The data is supplied as a technical service 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 assure information is current.

U.S. GREEN BUILDING COUNCIL MEMBER

LEED Eligible Product

Use of this product may help building projects meet green building standards as set by the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.
Credit 4.1 - 4.2 Recycled Content
Credit 5.1 - 5.2 Regional Materials

Children & Schools GREENGUARD Indoor Air Quality Certified

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.