We Didn't Choose Brown, It Just Came Naturally.

Knauf Friendly Feel® Duct Wrap with ECOSE® Technology sets a new industry benchmark for sustainable, high-performance, cost-effective insulation solutions.

To create the next generation of sustainable insulation, we combined:

• Sand, one of the world's most abundant and renewable resources,

• Minimum 30% post-consumer recycled bottle glass and

- • ECOSE Technology

Revolutionary New ECOSE Technology

The natural brown color comes from ECOSE Technology, a revolutionary, more sustainable binder.

- Patented technology born from five years of intensive research and development.
- Based on rapidly renewable bio-based materials rather than non-renewable petroleum-based chemicals commonly used in our traditional fiber glass insulation products.
- Does not contain phenol, formaldehyde, acrylics or artificial colors.
- Reduces binder embodied energy by up to 70%, and global warming Potential (GWP) and total insulation
- embodied energy by an anticipated 4% to reduce our carbon footprint.
- Converts natural, rapidly renewable organic materials into a totally inert polymer for superior environmental sustainability.

Your Best Choice

Knauf Duct Wrap with ECOSE® Technology delivers:

Improved sustainability:

- Uses renewable and abundant resources.
- Contains an industry-leading percentage of post-consumer recycled glass.
- Replaces non-renewable resources with renewable ones.
- Based on rapidly renewable bio-based materials.
- Eliminates non-renewable petroleum-based chemicals, such as phenol and formaldehyde.
- Reduces binder embodied energy.
- Contains no artificial colors.

Unsurpassed performance:

- Cost-effective way to improve thermal and acoustical performance.
- Is interior-friendly—GREENGUARD certified for Children & Schools.
- Helps projects achieve LEED Green Building Certification.

Great Handling Characteristics

- New Friendly Feel Duct Wrap with ECOSE Technology boasts exceptional quality and handling characteristics that keep installers happy and more productive—great feel, low dust, quick recovery.
- Flexible, lightweight—conforms easily to flat or irregular surfaces.

- Tough and resilient—resists damage in shipment and during and after installation.
- Easier, faster measurement of stretch-out lengths with KwikStretch® Markings on the FSK and PSK staple flanges.
- Rolls allow for faster installation, lower labor costs.

Great Performance Benefits

New Friendly Feel® Duct Wrap with ECOSE Technology meets all the specifications and performance requirements for your projects.

Excellent Acoustical Barrier

- Reduces sound transmission through the duct wall of noise generated by air turbulence and mechanical equipment for quiet, efficient air delivery

Conserves Energy

- Low “k” factor significantly reduces heat gain or loss.
- Lowers operating costs—increases system efficiency and reduces energy usage.

Controls Condensation

- FSK or PSK facings assure condensation control with proper installation and sealed joints, seams and penetrations.

Great Appearance

- White and Black PSK facings are a desirable solution for exposed duct work because of their appearance and resiliency.

Applications:

- Knauf Friendly Feel® Duct Wrap with ECOSE Technology is a thermal and acoustical insulation blanket bonded with ECOSE Technology for use as an external insulation on commercial or residential heating or air conditioning ducts.
- Suitable for the exterior of rectangular or round sheet metal ducts and spaces and surfaces where temperature and condensation must be controlled.
- Ideal for cooling, heating or dual temperature service

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—up to 250˚F (1221˚C); Unfaced—up to 350˚F (177˚C).

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.

Water Vapor Permeance (ASTM E 96, Procedure A)

- FSK and white PSK facings—maximum .02 perms.
- Black PSK facing—maximum .09 perms.

Corrosiveness (ASTM C 665)

- Does not accelerate corrosion on steel, copper or aluminum.

Corrosion (ASTM C 1617)

- The corrosion rate in mils/yr will not exceed that of 1 ppm chloride solution.

Resistance to Microbial Growth (ASTM C 1338)

- No growth.

Puncture Resistance (TAPPI Test T803) (Beach Units)

- FSK and PSK: 25

Specification Compliance

In U.S.:

- ASTM C 1139-unfaced, Type I, II
- Grade 1- 0.75 lb/ft³
- Grade 2- 1.0 lb/ft³
- Grade 3- 1.5 lb/ft³
- ASTM C 553; Type I, II, III
- ASTM C 1136; Type II
- ASTM C 1290
- GREENGUARD Indoor Air Quality Certified
- GREENGUARD for Children and Schools Certified
- California Title 24 (installed at 25% compression)
- HH-I-558C; Form B, Type I, Class 7
- NFPA 90A and 90B

In Canada:

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

Insertion Loss

	.75 PCF Duct Wrap	Insertion Loss, dB/LF of Duct						
Duct Dimensions	**Nominal Thickness**	**63Hz**	**125Hz**	**250Hz**	**500Hz**	**1000Hz**	**2000Hz**	**4000Hz**
12" x 12"	1½"	.6	.6	.6	.7	7.4	14.2	20.9

24" x 12"	1½"	.6	.6	.6	.7	7.4	14.2	20.9
48" x 12"	1½"	.5	.5	.5	.6	7.4	14.1	20.9
24" x 24"	1½"	.5	.5	.5	.6	7.4	14.1	20.9
24" x 12"	1½"	.8	.8	.8	.8	7.5	14.2	21.0
24" x 8"	2"	1.0	1.0	1.0	1.0	10.4	17.1	23.9

Sound and vibration design and analysis, National Environmental Balancing Bureau, 1994

R-Values (ASTM C 518) @ 75°F Mean Temperture

Density	Thickness	Out-of-Package R-Value	Installed R-Value (@ 25% Compression)
.75 PCF	$1^1/_2$"	5.1	4.2
.75 PCF	2"	6.8	5.6
.75 PCF	$2^3/_{16}$"	7.4	6.0
.75 PCF	$2^1/_2$"	8.5	7.0
.75 PCF	3"	10.2	8.4
1.0 PCF	$1^1/_2$"	5.6	4.5
1.0 PCF	2"	7.4	6.0
1.5 PCF	$1^1/_2$"	6.1	4.8
1.5 PCF	2"	8.2	6.4

Thermal Efficiency (ASTM C 177)

Mean Temperature	Mean Temperature (SI)	.75 PCF k	.75 PCF k (SI)	1.0 PCF k	1.0 PCF k (SI)	1.5 PCF k	1.5 PCF k (SI)
50°F	10°C	.28	.040	.26	.037	.23	.033
75°F	24°C	.29	.042	.27	.039	.24	.035
100°F	38°C	.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	.045
175°F	80°C	.39	.056	.37	.053	.33	.048
200°F	93°C	.43	.063	.40	.058	.36	.052

Forms Available

Density	Thickness	Width	Length	Facing
.75 PCF (12 kg/m3)	11/2“ (38 mm)	48“ (1219 mm)	100‘ (30.48 m)	FSK, Unfaced, PSK
	2“ (51 mm)		75‘ (22.86 m)	
	23/16“ (56 mm)		75‘ (22.86 m)	
	21/2“ (64 mm)		75‘ (22.86 m)	
	3“ (76 mm)		50‘ (15.24 m)	
1.0 PCF (16 kg/m3)	11/2“ (38 mm)	48“ (1219 mm)	100‘ (30.48 m)	

	2“ (51 mm)		75‘ (22.86 m)
1.5 PCF (24 kg/m3)	11/2“ (38 mm)	48“ (1219 mm)	75‘ (22.86 m)
	2“ (51 mm)		50‘ (15.24 m)

Stretch-Out

Labeled Thickness	Installed (25% Compression) Thickness	Round	Square	Rectangular
$1^1/_2$" (38 mm)	$1^1/_8$" (29 mm)	P+$9^1/_2$" (241 mm)	P+8" (203 mm)	P+7" (178 mm)
2" (51 mm)	$1^1/_2$" (38 mm)	P+12" (305 mm)	P+10" (254 mm)	P+8" (203 mm)
$2^3/_{16}$" (56 mm)	$1^5/_8$" (42 mm)	P+13" (330 mm)	P+11" (279 mm)	P+$8^1/_2$" (216 mm)
$2^1/_2$" (64 mm)	$1^7/_8$" (48 mm)	P+$14^1/_2$" (368 mm)	P+$12^1/_2$" (318 mm)	P+$9^1/_2$" (241 mm)
3" (76 mm)	$2^1/_4$" (57 mm)	P+17" (432 mm)	P+$14^1/_2$" (368 mm)	P+$11^1/_2$" (292 mm)

P=Duct Perimeter