



# Performance+

Duct Wrap  
with ECOSE® Technology

Product Data Sheet

03/2025



## Description

Performance+® Duct Wrap is a thermal and acoustical insulation blanket made from highly resilient, inorganic fiberglass bonded by ECOSE Technology. It is available unfaced, with a foil-scrim-kraft (FSK) jacket and with a white 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.

## Application

- External insulation on commercial or residential heating or air conditioning ducts
- Suitable for the exterior of rectangular or round sheet metal ducts and spaces or surfaces where temperature and condensation must be controlled

## Certifications



Contractor: \_\_\_\_\_

Job: \_\_\_\_\_

Date: \_\_\_\_\_

## Specification Compliance

### U.S.

- ASTM C1290
  - Type I - unfaced
  - Type II, III - faced
- ASTM C553
  - Type I, Type II - 0.75 PCF (12 kg/m<sup>3</sup>)
  - Type I, Type II - 1.0 PCF (16 kg/m<sup>3</sup>)
  - Type I, II, III - 1.5 PCF (24 kg/m<sup>3</sup>)
- ASTM C1136; Type II
- NFPA 90A and 90B
- California Title 24 (installed at 25% compression)
- UL/ULC Classified

### Canada

- CAN/ULC S102

## Indoor Air Quality

- Asthma & Allergy Friendly®
- Verified Healthier Air™
- UL Environment
  - GREENGUARD Certified
  - GREENGUARD Gold Certified
  - Validated to be Formaldehyde-Free
- Does not contain polybrominated diphenyl ethers (PBDE) such as: Penta – BDE, Octa – BDE or Deca – BDE
- EUCB Certified

## Technical Data

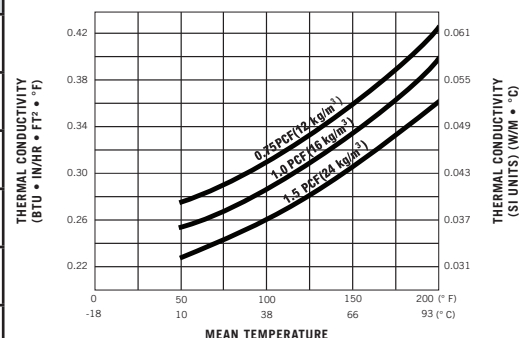
| Property (Unit)   | Test                           | Performance  |
|---|--------------------------------|--|
| Corrosiveness   | ASTM C665                      | Does not accelerate corrosion of steel               |
| Corrosion   | ASTM C1617                     | Pass   |
| Maximum Service Temperature                                       | ASTM C411                      | Faced: 250° F (121° C), Unfaced: 350° F (177° C)     |
| Water Vapor Permeance   | ASTM E96, Procedure A          | 0.02 perms or less (FSK and PSK facings)             |
| Water Vapor Sorption (by weight)                                  | ASTM C1104                     | Less than 5%   |
| Mold Growth   | ASTM C1338                     | Pass   |
| Surface Burning Characteristics<br>(flame spread/smoke developed) | ASTM E84, UL 723, CAN/ULC S102 | UL/ULC Classified FHC 25/50 (Unfaced and FSK facing) |
|   | ASTM E84                       | 25/50 (PSK facing)                                   |

## Forms Available

| Density                             | Thickness     | Width             | Length         | Facing                  | R-Value (K Value) @ 75°F<br>Mean Temperature |                                   |
|-------------------------------------|---------------|-------------------|----------------|-------------------------|--|-----------------------------------|
|                                     |               |                   |                |                         | Out-Of Package                               | Installed [at 25%<br>Compression] |
| 0.75 PCF<br>(12 kg/m <sup>3</sup> ) | 1½" (38 mm)   | 48"<br>(1,219 mm) | 100' (30.48 m) | FSK,<br>PSK,<br>Unfaced | R-5.1 (0.29)                                 | R-4.2 (0.27)                      |
|                                     | 2" (51 mm)    |                   | 75' (22.86 m)  |                         | R-6.8 (0.29)                                 | R-5.6 (0.27)                      |
|                                     | 2 ¾" (56 mm)  |                   | 75' (22.86 m)  |                         | R-7.4 (0.29)                                 | R-6.0 (0.27)                      |
|                                     | 3" (76 mm)    |                   | 50' (15.24 m)  |                         | R-10.2 (0.29)                                | R-8.4 (0.27)                      |
|                                     | 4 ⅝" (110 mm) |                   | 45' (13.71 m)  |                         | R-14.7 (0.29)                                | R-12 (0.27)                       |
| 1.0 PCF<br>(16 kg/m <sup>3</sup> )  | 1½" (38 mm)   |                   | 100' (30.48 m) |                         | R-5.6 (0.27)                                 | R-4.5 (0.25)                      |
|                                     | 2" (51 mm)    |                   | 75' (22.86 m)  |                         | R-7.4 (0.27)                                 | R-6.0 (0.25)                      |
| 1.5 PCF<br>(24 kg/m <sup>3</sup> )  | 1½" (38 mm)   |                   | 75' (22.86 m)  |                         | R-6.1 (0.24)                                 | R-4.8 (0.23)                      |
|                                     | 2" (51 mm)    |                   | 50' (15.24 m)  |                         | R-8.2 (0.24)                                 | R-6.4 (0.23)                      |

## Thermal Conductivity | ASTM C177

| Mean Temperature | 0.75 PCF (12 kg/m <sup>3</sup> ) |        | 1.0 PCF (16 kg/m <sup>3</sup> ) |        | 1.5 PCF (24 kg/m <sup>3</sup> ) |        |
|------------------|----------------------------------|--------|---------------------------------|--------|---------------------------------|--------|
|                  | k                                | k (SI) | k                               | k (SI) | k                               | k (SI) |
| 50° F (10° C)    | 0.28                             | 0.040  | 0.26                            | 0.037  | 0.23                            | 0.033  |
| 75° F (24° C)    | 0.29                             | 0.042  | 0.27                            | 0.039  | 0.24                            | 0.035  |
| 100° F (38° C)   | 0.31                             | 0.045  | 0.29                            | 0.042  | 0.26                            | 0.037  |
| 125° F (52° C)   | 0.33                             | 0.048  | 0.31                            | 0.045  | 0.28                            | 0.040  |
| 150° F (66° C)   | 0.36                             | 0.052  | 0.34                            | 0.049  | 0.31                            | 0.042  |
| 175° F (80° C)   | 0.39                             | 0.056  | 0.37                            | 0.053  | 0.33                            | 0.048  |
| 200° F (93° C)   | 0.43                             | 0.063  | 0.40                            | 0.058  | 0.36                            | 0.052  |



## Sound 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"<br>(305 mm x 305 mm)  | 24 GA       | 1½" (38 mm)       | 0.75 PCF<br>(12 kg/m <sup>3</sup> ) | 0.6                           | 0.6   | 0.6   | 0.7   | 7.4    | 14.2   | 20.9   |
| 24" x 12"<br>(610 mm x 305 mm)  | 24 GA       | 1½" (38 mm)       |                                     | 0.6                           | 0.6   | 0.6   | 0.7   | 7.4    | 14.2   | 20.9   |
| 48" x 12"<br>(1219 mm x 305 mm) | 22 GA       | 1½" (38 mm)       |                                     | 0.5                           | 0.5   | 0.5   | 0.6   | 7.4    | 14.1   | 20.9   |
| 24" x 24"<br>(610 mm x 610 mm)  | 22 GA       | 1½" (38 mm)       |                                     | 0.5                           | 0.5   | 0.5   | 0.6   | 7.4    | 14.1   | 20.9   |
| 24" x 12"<br>(610 mm x 305 mm)  | 26 GA       | 1½" (38 mm)       |                                     | 0.8                           | 0.8   | 0.8   | 0.8   | 7.5    | 14.2   | 21.0   |
| 24" x 8"<br>(610 mm x 203 mm)   | 26 GA       | 2" (51 mm)        |                                     | 1.0                           | 1.0   | 1.0   | 3.6   | 10.4   | 17.1   | 23.9   |

## 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)   |
| 2¾" (56 mm)       | 1⅝" (42 mm)                    | P+13" (330 mm)  | P+11" (279 mm)  | P+8½" (216 mm)  |
| 3" (76 mm)        | 2¼" (57 mm)                    | P+17" (432 mm)  | P+14½" (368 mm) | P+11½" (292 mm) |
| 4⅝" (110 mm)      | 3¼" (83 mm)                    | P+22½" (572 mm) | P+18" (457 mm)  | P+19" (483 mm)  |

P = Perimeter of duct to be installed.

## Application and 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 over clean, dry sheet metal ducts.
- All sheet metal joints and seams must be sealed to prevent air leakage from the duct.

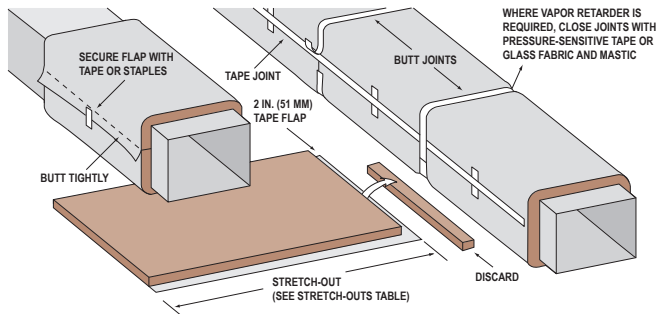
### Application

- Install 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.
- 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 nominal 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 over-compressing the insulation with the retaining washer.
- The use of bonding adhesive is not recommended for attaching duct wrap to the duct surface. The use of bonding adhesive may restrict duct wrap from expanding to full thickness. This loss of thickness will result in decreased thermal performance which may lead to condensation issues on below ambient ductwork. Use of bonding adhesive voids warranty and performance claims and potentially the UL rating of Knauf Insulation duct wrap.
- Unfaced Duct Wrap should be overlapped with a minimum of 2" (51 mm) and fastened with 4" (102 mm) to 6" (152 mm) insulation pins 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 Application graphic to determine stretch-outs required for the nominal thickness of insulation to limit average compression of the insulation 25% or less.

## Application



## Fiberglass and Mold

Fiberglass insulation will not sustain mold growth. However, mold can grow on almost any material when it becomes wet and contaminated. 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. Insulation used in direct contact with air streams that provide conditioning to occupied spaces must be discarded if exposed to water.

## Sustainability

Knauf Insulation products with ECOSE® Technology are made using our patented, bio-based binder – a smarter alternative to the phenol/formaldehyde (PF) binder traditionally used in fiberglass products. The bio-based binder holds our product together, gives the product its unique appearance and makes it formaldehyde-free. All of our products are made from sustainable resources, such as recycled glass and sand. And we're proud to be putting glass bottles back to work rather than into landfills. Our products are made with a minimum of 50% recycled glass—totaling an average of 26 million bottles.

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Check with your Knauf Insulation Territory Manager to ensure information is current.

The chemical and physical properties of this product represent average values determined in accordance with accepted test methods. The data is subject to normal manufacturing 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.

This product is covered by one or more U.S. and/or other patents.

See patent [www.knaufnorthamerica.com/patents](http://www.knaufnorthamerica.com/patents)

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