KNAUF INSULATION

1. Product Name

Eclipse™ Air Duct Board

2. Manufacturer

Knauf Insulation
One Knauf Dr.
Shelbyville, IN 46176
(800) 825-4434
(317) 398-4434
Fax: (317) 398-3675
www.KnaufInsulation.us

3. Product Description

BASIC USE

Manufactured of resin-bonded fiber glass, Knauf premium air handling insulation systems are designed to ensure superb air distribution while lowering operating costs, significantly reducing noise and controlling condensation. Available in EI-475 or EI-800 with butt edge or factory-molded shiplap edge, it offers excellent thermal and acoustical performance.

Knauf Eclipse Air Duct Board is designed for commercial and residential air handling installations for cooling, heating or dual-temperature service where good temperature control, noise absorption and abuse resistance are required.

BENEFITS

- Energy conservation - Low thermal conductivity; minimum heat loss or gain; superior temperature control
- Low cost installation - Easy one-product fabrication and installation; portability
- Noise reduction - Reduces air turbulence and mechanical noise; eliminates sheet metal duct contraction and expansion
- Durability - Superior to coated duct board products; provides extra protection during fabrication, installation and duct cleaning; highly resistant to bio-deterioration
- Porosity - Low leakage; 20% less porous than coated duct board products; less airborne dirt penetration into fibrous matrix; vapor retardant; resistant to fungi and bacteria

SIZES

Knauf Eclipse Air Duct Board is available with butt or factory-molded shiplap edges in 1", 1 1/2" and 2" (25.4, 38 and 51 mm) thicknesses. See Table 1 for additional size information.

TABLE 1 AVAILABLE FORMS

Thickness (inches, mm)	Size [1]	Edge	Pieces/Carton [2]
1 (25.4)	48 × 96 (1219 × 2438)	Butt, Shiplap	8
1 (25.4)	48 × 120 (1219 × 3048)	Butt, Shiplap	6
1.5 (38.1) [3]	48 × 120 (1219 × 3048)	Butt, Shiplap	4
2 (51) [3]	48 × 120 (1219 × 3048)	Butt, Shiplap	3

[1] Other lengths available on a made-to-order basis.

[2] Palletized packaging available upon request.

[3] EI-800 only.

LIMITATIONS

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. Air handling insulation used in the airstream must be discarded if exposed to water.

4. Technical Data

APPLICABLE STANDARDS

ASTM International

- ASTM C411 Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation
- ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM C1104/C1104M Standard Test Method for Determining the Water Vapor Sorption of Unfaced Mineral Fiber Insulation
- ASTM C1136 Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation
- ASTM D516 Standard Test Method for Sulfate Ion in Water
- ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials
- ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

National Fire Protection Association (NFPA)

- NFPA 90A Installation of Air Conditioning and Ventilating Systems
- NFPA 90B Installation of Warm Air Heating and Air Conditioning Systems
- NFPA 255 Standard Method of Test of Surface Burning Characteristics of Building Materials

Underwriters Laboratories, Inc. (UL)

- UL 181 Factory-Made Air Ducts and Air Connectors
- UL 723 Test for Surface Burning Characteristics of Building Materials

Underwriters' Laboratories of Canada (ULC) - CAN/ULC-S102-M Test for Surface Burning Characteristics of Building Materials

North American Insulation Manufacturers Association (NAIMA) - Fibrous Glass Duct Construction Standards - NAIMA FGDCS

APPROVALS

Knauf Air Duct Board-M with Hydroshield technology complies with the following:

- ASTM D516
- ASTM G21
- BOCA
- CABO
- California Title 24
- Corps of Engineers Guide Specifications
- Greenguard™ Certified
- ICBO
- International Mechanical Code
- NFPA 90A and 90B
- SBCCI
- State of Alaska IAQ Specifications
- State of Washington IAQ Specifications
- UL 181, Class 1
- CAN/ULC-S102-M88
- CAN/CGSB 51-GP-52M (facing)
- CAN/CGSB 51.10-92
- ULC Issue 869C, Class 1

PHYSICAL/CHEMICAL PROPERTIES

- Available in 2 stiffness values - EI-475 and EI-800; flexural rigidity (EI) is the product of Young's modulus of elasticity (E) and moment of inertia (I) as determined in accordance with NAIMA AHS-100
- Service temperature (ASTM C411) - Up to 250 degrees F (121 degrees C)
- Air velocity (UL 181) - Maximum 5000 fpm (1524 mpm); tested to 12,500 fpm (3810 mpm)

- Internal static pressure (UL 181) - Maximum ±2" (51 mm) water - 498 Pa
- Water vapor transmission rate (ASTM E96) - Less than 0.02 perms
- Water vapor absorption (ASTM C1104) - Less than 3% by weight
- Microbial growth (UL 181, ASTM G21) - Does not promote or support the growth of mold, fungi or bacteria; airstream surface mat facing is treated with an EPA-registered antimicrobial agent to aid in the prevention of fungal and bacterial growth

FIRE PERFORMANCE

- UL/ULC listed
- Does not exceed 25 flamespread, 50 smoke developed, when tested in accordance with ASTM E84, CAN/ULC-S102-M, NFPA 255 and UL 723

5. Installation

PREPARATORY WORK

Handle and store product according to Knauf recommendations.

Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

Verify that site conditions are acceptable for installation of insulation. Do not proceed with installation of insulation until unacceptable conditions are corrected.

Fabricate and install ducts in strict accordance with NAIMA FGDCS.

METHODS

Pressure Sensitive Tape

1. All longitudinal and circumferential joints must be stapled with outward flaring, 1/2" (12.7 mm) minimum length staples, 2" (51 mm) oc
2. If necessary, follow the recommendations of the tape manufacturer for cleaning the surface to be taped
3. Center tape over staple flap and rub tape firmly in place immediately after application using a plastic squeegee or similar tool until the scrim reinforcement of the duct board facing can be clearly seen through the tape
4. A heat-sealing iron must be used to ensure a good bond when installed below 50 degrees F (10 degrees C)
5. Tape should not be applied to surface of duct board when temperature is below 32 degrees F (0 degrees C) due to the possibility of entrapping ice crystals which, upon melting, will cause tape to loosen. Heat duct board facing surface first to drive off moisture

Heat Sealable Tape

1. All longitudinal and circumferential joints must be stapled with outward flaring, 1/2" (12.7 mm) minimum length staples, 2" (51 mm) oc
2. If necessary, follow the recommendations of the tape manufacturer for cleaning the surface to be taped
3. Center tape over staple flap and seal down tape end with 500 degree F (260 degree C) iron. Do not use heat gun, as heat and pressure are both required to effect a seal
4. Press down entire length of tape with iron using a smearing action to get good bond. Ensure edges are sealed
5. Omit staples when an automatic closure machine such as the Glassmaster Closemaster is used. In this case, iron temperature must be set at 650 degrees F (343 degrees C) minimum. Continuous production may require periodic pauses to allow sealing iron temperature to recover to the 650 degrees F (343 degrees C) minimum
6. Allow joint to cool before stressing

Mastic and Glass Fabric

1. All longitudinal and circumferential joints must be stapled with outward flaring, 1/2" (12.7 mm) minimum length staples, 2" (51 mm) oc. For fabricated joints without staple flaps, cross tabs of UL 181-A listed tape should be used prior to application of UL 181-A listed mastic system
2. Brush approved mastic onto joint and embed 3" (76 mm) wide glass fabric in mastic
3. Brush second coat of mastic over glass fabric until mesh is completely filled
4. Follow mastic manufacturer's instructions on curing the mastic prior to subjecting the joint to stress

Reinforcements

Support ductwork on straight runs and at all turns and at transitions to maintain proper alignment. Hangers and supports must conform strictly with Knauf Insulation and NAIMA standards.

PRECAUTIONS

Rubber-based adhesives are not approved. Use only UL 181-A listed and labeled products for closure systems. A listing of specific approved closure products is available from a local Knauf sales representative.

- Use only pressure sensitive tapes listed under and imprinted with designation UL 181 A-P and registered with UL
- Use only heat sealable tapes listed under and imprinted with the designation UL 181 A-H and registered with UL
- Use only those mastic systems listed and registered with UL and carrying the designation UL 181 A-M used in conjunction with a 3" (76 mm) wide glass fabric

BUILDING CODES

Current data on building code requirements and product compliance may be obtained from Knauf technical support specialists. Installation must comply with the requirements of all applicable local, state and national code jurisdictions.

6. Availability & Cost

AVAILABILITY

These products are available throughout the United States.

COST

Budget installed cost information may be obtained from the manufacturer.

7. Warranty

Knauf Insulation offers a 1 year limited warranty on manufacturing defects for fiber glass insulation.

8. Maintenance

No maintenance is required for properly installed insulation products.

9. Technical Services

Technical support for Knauf Insulation products is available by calling (800) 825-4434.

10. Filing Systems

- Reed First Source®
- MANU-SPEC®
- Sweet's Catalog Files
- Additional product information is available from the manufacturer upon request.