Atmosphere™ Duct Wrap
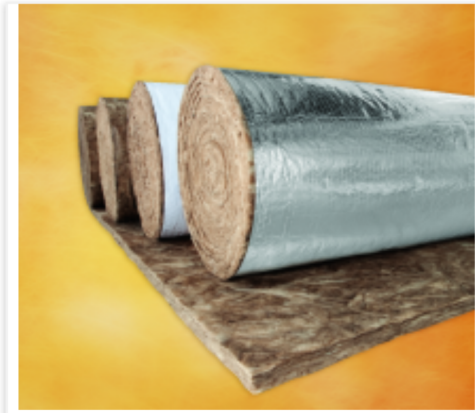

Description   Datasheets

Knauf Insulation Atmosphere™ Duct Wrap with ECOSE® Technology is a thermal and acoustical insulation blanket made from highly resilient, inorganic glass mineral wool 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.

ECOSE® Technology

ECOSE Technology is a revolutionary binder chemistry that enhances the sustainability of our products. The "binder" is the bond that holds our glass mineral wool product together and gives the product its shape and brown color. ECOSE Technology is a plant-based, sustainable chemistry that replaces the phenol/formaldehyde (PF) binder traditionally used in glass mineral wool products. Products using ECOSE technology are formaldehyde-free and have reduced global warming potential when compared to our products of the past.

Application

Knauf Insulation Atmosphere™ 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
- 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
- Reduces sound transmission through the duct wall
- Assured condensation control when installed at proper thickness using FSK or PSK facings, proper installation and sealed joints, seams and penetrations
- Resists damage in shipment and during and after installation
- Low emitting for indoor air quality considerations

Sustainability

- Carbon negative: Knauf Insulation products used for thermal insulating purposes recover the energy that it took to make them in just hours or a few days, depending on the application. Once installed, the product continues to save energy and reduce carbon generation as long as it is in place
- Glass mineral wool insulation with ECOSE Technology contains three primary ingredients:
  - Sand, one of the world's most abundant and renewable resources
  - A minimum of 50% recycled content and UL Environment verification every 6 months
  - ECOSE Technology which reduces binder embodied energy by up to 70%

Specification Compliance

In U.S.

- ASTM C 1139 - unfaced; Type I, Type 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

HH-I-558C; Form B, Type I, Class 7

NFPA 90A and 90B

California Title 24 (installed at 25% compression)

In Canada:

CAN/ULC S102-M88

CAN/CGSB-51.11-92

Indoor Air Quality

UL Environment GREENGUARD Air Quality Certified®

UL Environment GREENGUARD Gold CertifiedSM

UL Enivronment validated to be formaldehyde free

UL/ULC Classified FHC 25/50 (FSK, Unfaced)

Does not contain polybrominated diphenyl ethers (PBDE) such as: Penta – BDE, Octa – BDE or Deca – BDE

Tested and certified to meet all the requirements of EUCEB

Technical Data

Surface Burning Characteristics

Unfaced and FSK wrap have a Flame Spread 25 and Smoke Developed 50 when tested in accordance with UL 723, ASTM E 84, CAN/ULC S102-M88 and NFPA 255. PSK wrap has a Flame Spread 25 and Smoke Developed 50 when tested in accordance with ASTM E 84

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 PSK facings have maximum water vapor permeance of .02 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)

Does not accelerate corrosion on steel, copper or aluminum

Corrosion (ASTM C 1617)

Corrosion rate in mils/yr will not exceed that of the 5 ppm chloride solution

Mold Growth (ASTM C 1338)

No growth

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 Insulation Atmosphere™ 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 Insulation Atmosphere™ 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

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

It is neither necessary nor desiable to adhere duct wrap to duct surfaces with adhesive

Unfaced Duct Wrap should be overlapped 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 Application graphic to determine stretch-outs required for the nominal thickness of insulation to limit average compression of the insulation 25% or less.

Glass Mineral Wool and Mold

Glass mineral wool 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. Air handling insulation used in the air stream must be discarded if exposed to water.

Notes

The chemical and physical properties of Knauf Insulation Atmosphere™ 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.

GREENGUARD Certification

Knauf Insulation products with ECOSE Technology contain no phenol, formaldehyde, acrylics or artificial colors. These products are certified by UL Environment for indoor air quality (IAQ) as low emitting products and where noted, have achieved the more stringent GREENGUARD Gold certification and verified to be formaldehyde-free. For more information, visit: www.ul.com/ggGold certification and verified to be formaldehyde-free. For more information, visit: www.ul.com/gg