



Data Sheet

CI-PT-DS

09-17

## Earthwool® Pipe & Tank Insulation

with ECOSE® Technology

Knauf Insulation Earthwool Pipe and Tank Insulation with ECOSE Technology is a semi-rigid glass mineral wool board in roll form faced with a factory applied FSK or ASJ+ vapor retarder or a glass mat facing. The glass mineral wool is adhered perpendicular to the jacketing, for flexibility, compression strength, and easy installation. It is typically used on tanks, vessels and large-diameter pipes. It can be used for any curved or irregular surfaces that require finished characteristics of rigid glass mineral wool insulation.

# Earthwool® Pipe & Tank Insulation with ECOSE® Technology

## 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.

## PRODUCT FEATURES

### Superior Handling

- Flexible, easy to handle and fabricate

### Energy Conservation

- Excellent thermal properties

### Inventory Savings

- No need to stock multiple sizes
- Various thicknesses are available to meet all your pipe and tank insulation needs

### Resists Damage

- Tough and durable, resists damage in shipment, during and after installation

### Healthy & Safety

- This product complies with Oregon Revised Statute 453.085 and contains less than 0.10% decabromdiphenyl ether (DecaBDE) by mass.
- Tested and certified to meet all requirements of EUCEB

## SUSTAINABILITY

Knauf Insulation’s products used for thermal insulating purposes recover the energy that it took to make them in just hours or 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 key ingredients:

- Recycled glass content, verified every 6 months by UL Environment
- Sand, one of the world’s most abundant resources
- Our green chemistry initiative ECOSE Technology, which is validated to be formaldehyde-free

## SPECIFICATION COMPLIANCE

- ASTM C1136
- ASJ+: Type I, II, III, IV, X; FSK: Type II, IV
- ASTM C1393, Category 1
- HH-B-100B (jackets)
- ASJ+: Type I and II, FSK: Type II
- HH-I-558C Form A, Class 3

• **ASTM C795**  
• **MIL-I-24244**  
• **NRC Reg. Guide 1.36.**  
(Certification to be specified at time of order)

## APPLICATION AND SPECIFICATION GUIDELINES

### Precautions

- ASJ+ and FSK jackets should not be used if outer-surface temperature exceeds 150° F (66° C).
- During initial heat-up to operating temperatures above 350° F (177° C), a slight odor and some smoke may be given off as a portion of the bonding material used in the insulation begins to undergo a controlled decomposition.
- If natural convection is not adequate in confined areas, forced ventilation should be provided in order to protect against any harmful fumes and vapors that might be generated.
- Care must also be taken when using sealants, solvents or flammable adhesive during installation.

### Storage

- Protect stored insulation from water damage or other abuse.
- Protect from welding sparks and open flame.
- Cartons are not designed for outside storage.

### Preparation

- Apply Knauf Insulation Earthwool Pipe and Tank Insulation on clean, dry surfaces.

## INSTALLATION GUIDELINES

For easy installation of Knauf Insulation Earthwool Pipe and Tank Insulation simply follow these guidelines.

- Refer to the Stretch-out Chart (right) to find the appropriate length to cut for the specific pipe size. Be sure to add an additional 2" (51 mm) to 4" (102 mm) for your staple flap.
- Cut your stretch-out length and wrap the material around the iron pipe to ensure the proper fit.

- Staple the lap on 3" (76 mm) centers with outward clinching staples.
- Butt edges shall be firmly secured, and butt strips matching the jacket shall be applied at each joint.

## CAUTION

Glass mineral wool may cause temporary skin irritation. Wear long-sleeved, loose-fitting clothing, head covering, gloves and eye protection when handling and applying material. Wash with soap and warm water after handling. Wash work clothes separately and rinse washer. A disposable mask designed for nuisance type dusts should be used where sensitivity to dust and airborne particles may cause irritation to the nose or throat.

## 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.

## NOTES

The chemical and physical properties of Knauf Insulation Earthwool® Pipe and Tank Insulation with ECOSE® Technology represent typical 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.

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

## Stretch-Outs

Nominal Iron Pipe Size	Iron Pipe Outside Diameter	Thickness			
		1" (25 mm)	1½" (38 mm)	2" (51 mm)	3" (76 mm)
10" (254 mm)	10¾" (273 mm)	40⅞" (1,019 mm)	43¼" (1,099 mm)	46⅜" (1,178 mm)	52⅝" (1,337 mm)
12" (305 mm)	12¾" (324 mm)	46⅜" (1,178 mm)	49½" (1,257 mm)	52¾" (1,340 mm)	59" (1,499 mm)
14" (356 mm)	14" (356 mm)	50⅝" (1,280 mm)	53½" (1,359 mm)	56⅝" (1,438 mm)	62⅞" (1,597 mm)
16" (406 mm)	16" (406 mm)	56⅝" (1,438 mm)	59¾" (1,518 mm)	62⅞" (1,597 mm)	69⅞" (1,756 mm)
18" (457 mm)	18" (457 mm)	62⅞" (1,597 mm)	66" (1,676 mm)	69⅞" (1,756 mm)	75½" (1,918 mm)
20" (508 mm)	20" (508 mm)	69⅞" (1,756 mm)	72⅞" (1,838 mm)	75½" (1,918 mm)	81¾" (2,076 mm)
22" (559 mm)	22" (559 mm)	75½" (1,918 mm)	78⅝" (1,997 mm)	81¾" (2,076 mm)	88" (2,235 mm)
24" (610 mm)	24" (610 mm)	81¾" (2,076 mm)	84⅞" (2,156 mm)	88" (2,235 mm)	94⅞" (2,397 mm)
26" (660 mm)	26" (660 mm)	88" (2,235 mm)	91⅞" (2,315 mm)	94⅞" (2,397 mm)	100⅞" (2,556 mm)
28" (711 mm)	28" (711 mm)	94⅞" (2,397 mm)	97½" (2,477 mm)	100⅞" (2,556 mm)	106⅞" (2,715 mm)
30" (762 mm)	30" (762 mm)	100⅞" (2,556 mm)	103¾" (2,635 mm)	106⅞" (2,715 mm)	113⅞" (2,873 mm)
32" (813 mm)	32" (813 mm)	106⅞" (2,715 mm)	110" (2,794 mm)	113⅞" (2,873 mm)	119½" (3,035 mm)
34" (864 mm)	34" (864 mm)	113⅞" (2,873 mm)	116¼" (2,953 mm)	119½" (3,035 mm)	125¾" (3,194 mm)
36" (914 mm)	36" (914 mm)	119½" (3,035 mm)	122⅝" (3,115 mm)	125¾" (3,194 mm)	132" (3,353 mm)
38" (965 mm)	38" (965 mm)	125¾" (3,194 mm)	128⅞" (3,273 mm)	132" (3,353 mm)	138¼" (3,512 mm)
40" (1,016 mm)	40" (1,016 mm)	132" (3,353 mm)	135⅞" (3,432 mm)	138¼" (3,512 mm)	144⅞" (3,673 mm)
42" (1,067 mm)	42" (1,067 mm)	138¼" (3,512 mm)	141½" (3,594 mm)	144⅞" (3,673 mm)	150⅞" (3,832 mm)

\*Additional 2" (51 mm) to 4" (102 mm) should be added for lap.

## Technical Data

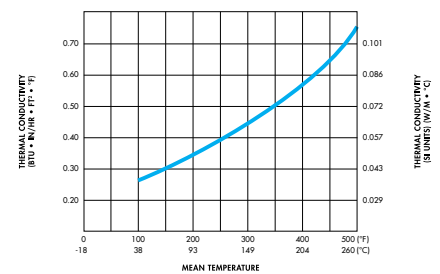
Property (Unit)	Test	Performance
Corrosiveness	ASTM C665	Does not accelerate corrosion of steel
Corrosion	ASTM C1617	Pass
Compressive Strength	ASTM C165	Not less than 120 PSF (5.75 kPa) at 10% deformation
Water Vapor Permeance	ASTM E96, Procedure A	FSK and ASJ+ facings: 0.02 perms
Maximum Service Temperature	ASTM C411	850° F (454° C)
Mold Growth	ASTM C1338	Pass
Linear Shrinkage	ASTM C356	Negligible
Puncture Resistance	TAPPI Test T803, Beach Units	FSK facing: 25, ASJ+ facing: 120
Surface Burning Characteristics (flame spread/smoke developed)	ASMT E84, CAN/ULC S102, NFPA 90A and 90B, NFPA 255, UL 723	25/50

## Forms Available

Thickness	Width	Length†
1" (25 mm)	36" (914 mm)	48' (14.63 m)
1½" (38 mm)		32' (9.75 m)
2" (51 mm)		24' (7.32 m)
3" (76 mm)		16' (4.88 m)

†Cut-to-length sizes also available.

## Thermal Efficiency | ASTM C177



Mean Temperature	k	k (Si)
100° F (38° C)	0.26	0.037
200° F (93° C)	0.35	0.050
300° F (149° C)	0.45	0.065
400° F (204° C)	0.57	0.082
500° F (260° C)	0.75	0.108

# KNAUF INSULATION



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#### UL Environment GREENGUARD Certification Program

Earthwool Pipe & Tank Insulation is certified to UL Environment GREENGUARD standards for low chemical emissions into indoor air during product usage.

#### UL Environment GREENGUARD Gold

Knauf Insulation has achieved UL Environment GREENGUARD Gold Certification for Earthwool Pipe & Tank Insulation.

#### UL Environment Validated Formaldehyde Free

Knauf Insulation has achieved UL Environment validation that Earthwool Pipe & Tank Insulation is formaldehyde free.

For more information, visit [ul.com/spot](http://ul.com/spot)

#### 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.

#### LEED v2009

MR Credit 4.1 - 4.2 Recycled Content  
MR Credit 5.1 - 5.2 Regional Materials

#### LEED v4

Knauf Insulation offers several products for both envelope and mechanical systems that have ingredient disclosure and transparency. Please contact [transparency@knaufinsulation.com](mailto:transparency@knaufinsulation.com) for products that currently contribute to MR credits.

This product has been tested and is certified to meet the EUCEB requirements.