



Data Sheet

CI-EL-DS 9-16

## **Equipment Liner M** *with ECOSE<sup>®</sup> Technology*



# Equipment Liner M with ECOSE® Technology

## Description

Knauf Insulation Equipment Liner M with ECOSE Technology is a natural brown flexible glass mineral wool blanket with a black mat facing adhered to the air stream side. The product provides thermal and acoustical insulation while providing a smooth, tough air stream surface which resists damage during installation and operation.

## 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

It is used to provide noise reduction and thermal insulation for equipment (air conditioning, heating) where air erosion resistance is required. The product is designed for systems operating at temperatures up to 250°F (121°C) and velocities up to 6000 fpm (1829 meters/min).

## Features and Benefits

- Low emitting for indoor air quality considerations

## 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

## Indoor Air Quality

- UL Environment GREENGUARD Certified
- UL Environment GREENGUARD GOLD Certified
- UL Environment Validated to be formaldehyde free

## Technical Data

### Fire Resistance

- Meets NFPA 90A and NFPA 90B Standards for fire safety

### Temperature Range (ASTM C411)

- Up to 250°F (121°C)

### Air Velocity (ASTM C1071)

- Maximum 6000 fpm (1829 meters/min)

### Corrosiveness (ASTM C665)

- Does not accelerate corrosion on steel, copper or aluminum

### Corrosion (ASTM C1617)

- Pass

### Water Vapor Sorption (ASTM C1104)

- Less than 3% by weight

## Surface Burning Characteristics

### (UL/ULC Classified)

- When tested in accordance with UL 723, ASTM E84, CAN 4-S102, and NFPA-255, Knauf Insulation Equipment Liner M does not exceed 25 Flame Spread, 50 Smoke Developed

### Microbial Growth (ASTM C1338, G21)

- The airstream surface mat facing is treated with an EPA-registered anti-microbial agent to aid in the prevention of fungal and bacterial growth.
- Does not promote or support the growth of mold, fungi or bacteria.

## 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 Equipment Liner M with ECOSE Technology represent typical average values determined in accordance with accepted test methods. The data is subject to normal 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 material under actual fire conditions.

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



### Sound Absorption Coefficients (ASTM C423) Type A Mounting

Type		Octave Band Center Frequency (cycles/sec)						
		125	250	500	1000	2000	4000	NRC
1.5 PCF (24 kg/m <sup>3</sup> )	1" (25 mm)	0.18	0.36	0.59	0.86	0.95	0.90	0.70
	1½" (38 mm)	0.35	0.51	0.83	0.93	0.97	0.96	0.80
	2" (51 mm)	0.34	0.64	0.96	1.03	1.00	1.03	0.90
2.0 PCF (32 kg/m <sup>3</sup> )	½" (13 mm)	0.09	0.14	0.40	0.60	0.73	0.82	0.45
	1" (25 mm)	0.25	0.35	0.69	0.89	0.96	1.01	0.70
	1½" (38 mm)	0.27	0.55	0.87	0.99	1.00	0.98	0.85

### Forms Available

Density	Thickness	Width	Length	Current Minimum (ft <sup>2</sup> )
1.5 PCF (24 kg/m <sup>3</sup> )	1" (25 mm)	16"-48", 60"-96" (914-1219 mm, 1829-2438 mm)	100' (30.48 m)	38,000
	1½" (38 mm)		50' (15.24 m)	27,000
	2" (51 mm)		50' (15.24 m)	20,000
2.0 PCF (32 kg/m <sup>3</sup> )	½" (13 mm)	16"-48", 60"-96" (914-1219 mm, 1829-2438 mm)	100' (30.48 m)	54,000
	1" (25 mm)		50' (15.24 m)	31,000
	1½" (38 mm)		50' (15.24 m)	20,000

### Thermal Resistance (ASTM C518) 75°F Mean Temperature

Density	Thickness	R-Value @ 75°F (24°C)
1.5 PCF (24 kg/m <sup>3</sup> )	1" (25 mm)	R-4.2
	1½" (38 mm)	R-6.0
	2" (51 mm)	R-8.0
2.0 PCF (32 kg/m <sup>3</sup> )	½" (13 mm)	R-2.1
	1" (25 mm)	R-4.2
	1½" (38 mm)	R-6.3

# KNAUF INSULATION



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#### UL Environment GREENGUARD Gold

Knauf Insulation achieved GREENGUARD GOLD Certification and is verified to be formaldehyde free.

#### UL Environment GREENGUARD Certification Program

Products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage.

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



#### 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



Versions of this product have surface burning characteristics that are classified by Underwriters Laboratories and therefore subject to auditing for fire performance compliance.



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