



Data Sheet

CI-EL-DS

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# Equipment Liner M

*with ECOSE® 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 6,000 ft./min. (1,829 m/min.).

## PRODUCT FEATURES

- 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 six 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
  - GREENGUARD GOLD certified
  - Validated to be formaldehyde-free
- Does not contain polybrominated diphenyl ethers (PBDE) such as: Penta-BDE, Octa-BDE or Deca-BDE
- Tested and certified to meet all requirements of EUCEB

## 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.

## Technical Data

Property (Unit)	Test	Performance
Corrosiveness	ASTM C665	Does not accelerate corrosion of steel
Corrosion	ASTM C1617	Pass
Air Velocity	ASTM C1071	Maximum 6,000 ft./min. (1,829 m/min.)
Water Vapor Sorption (by weight)	ASTM C1104	Less than 3%
Maximum Service Temperature	ASTM C411	250° F (121° C)
Mold Growth	ASTM C1338, ASTM G21	Pass. The airstream surface mat facing is treated with an EPA-registered anti-microbial agent to aid in the prevention of fungal and bacterial growth
Surface Burning Characteristics (flame spread/smoke developed)	ASTM E84, NFPA 90A and 90B UL 723, CAN S102	UL Classified FHC 25/50

## Sound Absorption Coefficients | ASTM C423, Type A Mounting

		Octave Band Center Frequency (cycles/sec)						
Type		125	250	500	1000	2000	4000	NRC
1.5 PCF (24 kg/m <sup>3</sup> )	1" (25 mm)	0.18	0.28	0.73	0.85	0.91	0.90	0.70
	1½" (38 mm)	0.23	0.50	0.87	0.92	0.93	0.93	0.80
	2" (51 mm)	0.37	0.76	1.02	1.00	0.98	0.92	0.95
2.0 PCF (32 kg/m <sup>3</sup> )	½" (13 mm)	0.10	0.17	0.43	0.59	0.73	0.75	0.50
	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" (914-1,219 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)		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 Certification Program

Equipment Liner M is certified to UL Environment GREENGUARD standards for low chemical emissions into indoor air during product usage.

#### UL Environment GREENGUARD Gold Certification Program

Knauf Insulation has achieved UL Environment GREENGUARD Gold Certification for Equipment Liner M.

#### UL Environment Validated Formaldehyde Free

Knauf Insulation has achieved UL Environment validation that Equipment Liner M 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.



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