

# KINETICS™

## Pipe/Duct Lagging Material Model KNM-100ALQ

### Description

Kinetics KNM-100ALQ pipe/duct lag material meets Class 1 requirements for smoke development and flame spread when the aluminum foil covering faces the fire source per ASTM E84. The composite material is designed to reduce the sound transmission of piping, ductwork and equipment housings greater than achieved by adding mass alone. It combines a fire rated limp mass barrier with a decoupling quilted fiberglass lining.

The material is constructed of a rugged reinforced, aluminized-faced, mass loaded limp vinyl bonded to a scrim-faced, quilted fiberglass absorber/decoupler. The vinyl provides mass and flexibility, while the aluminum adds increased mechanical strength, attractive appearance and improved fire retardancy.

Rolls are manufactured with an additional 6" (152 mm) width of barrier on one side to provide an overlap of adjacent application and an improved acoustical seal. In some locations, codes may preclude the use of vinyl materials in this application.

### Application

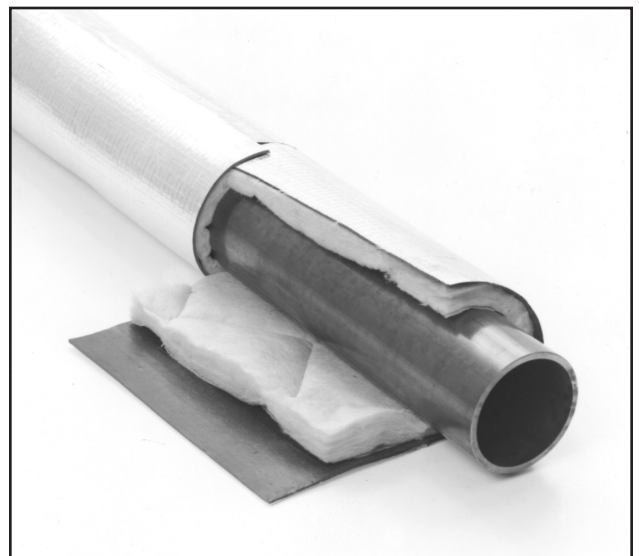
- Reduce pipeline noise from fluid or gas pulsation in chemical, petrochemical and waste water treatment plants.
- Limit noise from industrial processes and pressure reducing stations.
- Control HVAC duct and mixing boxes breakout noise.

To decouple the mass layer from the noise or vibration source, Kinetics Model KFA quilted absorber is used. The non-lead composition of the barrier material allows for safe handling and easy installation. When applied with Kinetics quilted absorber, Kinetics fire-resistant barrier material is simply cut to length, wrapped around the pipe or duct and fastened with adhesive, tape, mechanical fasteners or bands.

For exterior applications, the best design for optimal weather resistance should include watertight aluminum jacketing (by others) over the KNM-100ALQ.



- Fire Rated Material
- Barrier Overlap Tab for Fast, Noise-Tight Installation
- Tested for Breakout Noise Control on 20 ga Duct per ASTM E1222-90



## Sound Transmission Loss

Tested as a free hanging barrier (ASTM E-90-90)

Frequency, Hz	125	250	500	1000	2000	4000	STC
KNM-100ALQ	13	16	24	33	43	49	28

## Insertion Loss

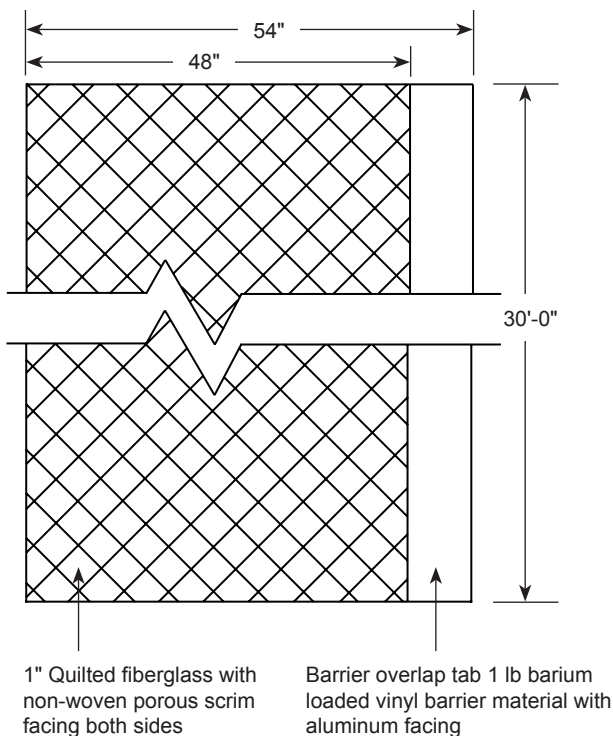
Tested as a duct wrap over 2" fiberglass board (ASTM E1222-90)

Frequency, Hz	63	125	250	500	1000	2000	4000
KNM-100ALQ	2	10	16	27	35	34	33

Tested as a duct wrap directly over duct (ASTM E1222-90)

Frequency, Hz	63	125	250	500	1000	2000	4000
KNM-100ALQ	3	6	7	18	24	27	28

**Note:** Heavier 2 psf barrier has been tested for breakout noise control over duct. See Model KNM-200AL.

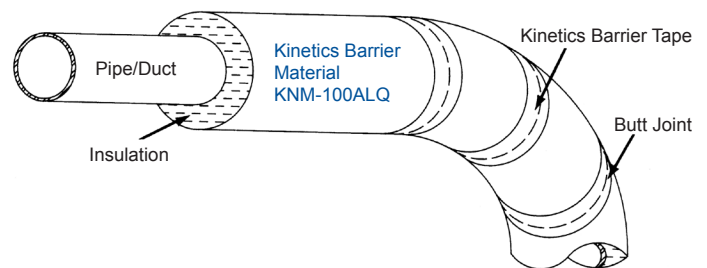


## Specifications

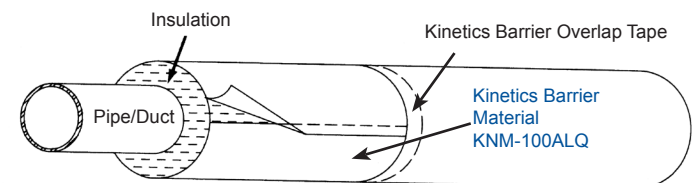
The barrier shall be constructed of a 0.10" (2 mm) thick mass loaded, limp vinyl sheet bonded to a thin layer of reinforced aluminum foil on one side. The barrier shall have a nominal density of 1.0 psf (4.8 kg/m<sup>3</sup>) and shall have a minimum STC 28 rating. The barrier shall exhibit minimum flammability ratings of 0.0 seconds for flame out and afterglow and 0.2" for char length when tested in accordance with Federal Test Std. No. 191-5903. The barrier shall have a minimum thermal conductivity K-factor of 0.29, a R-value of 4.27 and a rated service temperature range of -40°F (-40°C) to 220°F (105°C). When tested for Surface Burning Characteristics per ASTM E84, the barrier will have a Flame Spread Index of no more than 10 and a Smoke Development Index of no more than 40.

The decoupling layer shall be a combination of 1" (25mm) fiberglass batting, non woven porous scrim-coated glass cloth, quilted together in a matrix of 4" (100 mm) diamond stitch pattern which encapsulates the glass fibers. The barrier shall be model KNM and the decoupling layer shall be model KFA by Kinetics. The composite material shall be fabricated to include a nominal 6" (152 mm) wide barrier overlap tab extending beyond the quilted fiber glass to facilitate a leak-tight seal around field joints. Nominal barrier width 54" (1372 mm), nominal decoupler width 48" (1219 mm).

### Pipe/Duct Wrap Detail - Butt Joint Method



### Pipe/Duct Wrap Detail - Butt Joint Method



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