



# *kaisound*<sup>®</sup>

The most flexible approach to soundproofing

- Sound insulation for refrigeration/ air conditioning/ ventilation systems
- Triple noise reduction effect: absorber/ reduction/ damper
- Broadband sound absorption
- Flexible and easy to handle
- Fibre free: For high hygiene requirements



**KAIMANN**  
SAINT-GOBAIN



## Insulation material with extraordinary design

Kaisound has extraordinary properties. It's a flexible insulation material whose originally closed-cell components are re-arranged by a specific manufacturing process and thus form an open-pore unit. The resulting network has an extremely versatile structure with unique physical properties. The various pore dimensions absorb the problematic frequencies

found in building acoustics. Together with the high flow resistance and the viscoelastic properties, excellent sound reduction and damping results are achieved.

Kaisound is largely made from recycled materials and thus helps to avoid wasting valuable resources.



**kaisound®**

Open porous, hydrophobic and flexible acoustic insulation material based on synthetic rubber

## Sound insulation for various requirements

In everyday life nowadays we are often stressed by a multitude of sounds which are unwanted and therefore more likely to be called “noise” (in colloquial terms). Clinical studies have shown that people, who are exposed to high levels of noise over a long period of time, have an increased risk of heart disease and a lower stress threshold. In many areas of engineering and building design the challenges to lower this noise are increasing. Possible sources may include components of technical building equipment such as ventilation and air conditioning systems.

Kaisound with its versatile, sound-reducing properties, already offers solutions in the planning phase to meet the high sound requirements of modern buildings. Kaisound reduces occurring air- and structure-borne noise right at the source of

its development. The excellent absorption values as well as the very high sound damping results (due to the viscoelastic properties) make a significant contribution to comfort and living quality.

Kaisound is particularly suitable for soundproofing

- media-containing installations (air, water, ammonia, cryogenic fluids), e.g.
  - Ducts
  - pipes and tanks
  - pumps and valves
- equipment and machinery, e.g.
  - switch boxes
  - compressors
  - engines

### Sound protection for switch boxes and units (pumps, compressors etc.)

Inside insulation

**kaisound**<sup>®</sup>



### Acoustic noise reduction for air ducts

Inside insulation

**kaisound**<sup>®</sup>



### Kaisound Technical Data

<b>Material</b>		Open porous, hydrophobic and flexible acoustic insulation material based on synthetic rubber	
<b>Cell structure</b>		Open cell, with broad variation of cavity geometries for multi-frequency absorption	
<b>Colour</b>		Black	
<b>Upper temperature limit</b>	Kaisound 240 Kaisound 140	+85 °C (+250 °C) +85 °C	See remark (1)
<b>Lower temperature limit</b>		-20 °C (-200 °C)	See remark (2)
<b>Thermal conductivity</b>	$\lambda_{10}$ at -10 °C at 0 °C at +10 °C	Kaisound 240: $0.056 + 8.0 \cdot 10^{-5} \vartheta + 7.0 \cdot 10^{-7} \vartheta^2$ Kaisound 140: $0.047 + 8.0 \cdot 10^{-5} \vartheta + 7.0 \cdot 10^{-7} \vartheta^2$  Kaisound 240: $\leq 0.055$ W/(m·K) Kaisound 140: $\leq 0.046$ W/(m·K)  Kaisound 240: $\leq 0.056$ W/(m·K) Kaisound 140: $\leq 0.047$ W/(m·K)  Kaisound 240: $\leq 0.057$ W/(m·K) Kaisound 140: $\leq 0.048$ W/(m·K)	In acc. with DIN EN 12667
<b>Euroclass °</b>	Kaisound 240 Kaisound 140	C-s3, d0 D-s3, d0	In acc. with EN 13823 EN ISO 11925-2 See remark (3)
<b>Practical fire behaviour</b>		Self-extinguishing, no drips, does not support flame spread	
<b>Density</b>	Kaisound 240 Kaisound 140	220 to 280 kg/m <sup>3</sup> (average: 240 kg/m <sup>3</sup> ) 100 to 180 kg/m <sup>3</sup> (average: 140 kg/m <sup>3</sup> )	In acc. with ISO 845 ASTM D1622
<b>Acoustic insertion loss</b>		Complies to ISO 15665 – Classes A to C – and Shell DEP 31.46.00.31-Gen – Class D when used as part of an insulation system	In acc. with ISO 3741 (equivalent method ASTM E1222) Classification acc. to ISO 15665
<b>Other certificates / approvals</b>	Kaisound 240	Satisfies classes 6, 7 and 8 of NORSOK R-004 when used as part of a "Kaimann Industrial Solutions" insulation system	In acc. with ISO 3741 Classification acc. to ISO 15665
<b>Tensile strength</b>		50 to 200 kPa	In acc. with ISO 1798
<b>Tear strength</b>		0.5 to 1.5 kN/m	In acc. with ISO 34-1
<b>Elongation at break</b>		50 to 90 %	In acc. with ISO 1798
<b>Health aspects</b>		Fibre free: For high hygiene requirements No bacterial or fungal growth	In acc. with ISO 846 ASTM G-21 ASTM G-22
<b>Water absorption</b>		<5 % by volume	In acc. with AGI Q 136 See remark (4)
<b>Application and handling conditions</b>	Ambient temperature Max. relative humidity	+5 °C to +35 °C 80 %	
<b>Shelf life</b>		Material has to be mounted within two years after supply and proper storage. Self-adhesive material within one year.	Store in a dry room away from UV and sunlight at a typical relative humidity (between 50 % and 70 %) and room temperature (between +5 °C and +35 °C)
<b>Outdoor applications</b>		Coverings – such as Protect (R) HD, metal cladding or GRP – must be applied when Kaisound would be directly exposed to the outdoor environment	See remark (5)

For industrial applications it is recommended to consult the Kaimann Industrial Systems Application Manual and other relevant Kaimann installation instructions and application manuals.

Remark (1) For temperatures above +85 °C please contact our Technical Support Team for advice.

Remark (2) For temperatures below -20 °C please contact our Technical Support Team for advice.

Remark (3) In-house production control.

Remark (4) Based on single test results which are not monitored in regular frequency. Can be used for information/reference only.

Remark (5) Please contact our Technical Support Team for advice.

° The Euroclass rating applies to metallic or solid mineral substrates.



## Kaisound 240 Technical Data

Frequency (Hz)	Practical sound absorption coefficients $\alpha_p$						Calculated acc. to ISO 10534-1:1996
	Thickness (mm)						
	6	10	15	20	25	50	
250.00	0.00	0.05	0.10	0.15	0.25	0.70	Test acc. to ISO 354:2003
500.00	0.05	0.15	0.30	0.50	0.70	0.85	
1000.00	0.15	0.40	0.70	0.95	1.00	0.85	
2000.00	0.45	0.85	1.00	1.00	0.90	0.95	
4000.00	0.90	1.00	1.00	1.00	1.00	1.00	

**Sound absorption (Typical values)**

Test acc. to ISO 354:2003

	Weighted sound absorption coefficients $\alpha_w$						Rated acc. to EN ISO 11654
	Thickness (mm)						
	6	10	15	20	25	50	
$\alpha_w$	0.15 (H)	0.25 (H)	0.35 (MH)	0.45 (MH)	0.55 (MH)	0.90	Class
Class	E $\alpha$	E	D	D	D	A	

	Noise reduction coefficients (NRC)						Calculated acc. to ASTM C423-01
	Thickness (mm)						
	6	10	15	20	25	50	
NRC	0.15	0.35	0.55	0.65	0.70	0.90	

## Kaisound 140 Technical Data

Frequency (Hz)	Practical sound absorption coefficients $\alpha_p$						Calculated acc. to ISO 10534-1:1996
	Thickness (mm)						
	6	10	15	20	25	50	
250.00	0.05	0.05	0.10	0.15	0.20	0.75	Test acc. to ISO 354:2003
500.00	0.05	0.15	0.25	0.40	0.65	1.00	
1000.00	0.15	0.35	0.60	0.85	1.00	0.90	
2000.00	0.40	0.75	1.00	1.00	0.90	0.95	
4000.00	0.80	1.00	0.95	0.95	1.00	1.00	

Sound absorption (Typical values)

Test acc. to ISO 354:2003

	Weighted sound absorption coefficients $\alpha_w$						Rated acc. to EN ISO 11654
	Thickness (mm)						
	6	10	15	20	25	50	
$\alpha_w$	0.15 (H)	0.25 (H)	0.30 (MH)	0.40 (MH)	0.50 (MH)	0.95	Class
Class	E	E	D	D	D	A	

NRC	Noise reduction coefficients (NRC)						Calculated acc. to ASTM C423-01
	Thickness (mm)						
	6	10	15	20	25	50	
NRC	0.15	0.35	0.50	0.60	0.70	0.95	

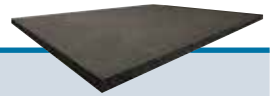
## Kaisound 240 Sheet · flat



Colour: Black								
Insulation thickness mm	Sheet · flat 1,20 x 0,84 m (= 1,00 m <sup>2</sup> )				Sheet · flat · self-adhesive 1,20 x 0,84 m (= 1,00 m <sup>2</sup> )			
	Reference	Order No.	pcs / carton	m <sup>2</sup> / carton	Reference	Order No.	pcs / carton	m <sup>2</sup> / carton
6	KS240-06-PL-M	4010596 *	16	16	KS240-06-PL-SK-M	4010608 *	16	16
10	KS240-10-PL-M	4010597 *	10	10	KS240-10-PL-SK-M	4010609 *	10	10
15	KS240-15-PL-M	4010598 *	6	6	KS240-15-PL-SK-M	4010610 *	6	6
20	KS240-20-PL-M	4010599 *	5	5	KS240-20-PL-SK-M	4010611 *	5	5
25	KS240-25-PL-M	4010600 *	4	4	KS240-25-PL-SK-M	4010612 *	4	4
50	KS240-50-PL-M	4010601 *	2	2	KS240-50-PL-SK-M	4010613 *	2	2

\* No stock item, delivery time on request.

## Kaisound 140 Sheet · flat





Colour: Black								
Insulation thickness mm	Sheet · flat 1,20 x 0,84 m (= 1,00 m <sup>2</sup> )				Sheet · flat · self-adhesive 1,20 x 0,84 m (= 1,00 m <sup>2</sup> )			
	Reference	Order No.	pcs / carton	m <sup>2</sup> / carton	Reference	Order No.	pcs / carton	m <sup>2</sup> / carton
6	KS140-06-PL-M	4010584 *	16	16	KS140-06-PL-SK-M	4010620 *	16	16
10	KS140-10-PL-M	4010585 *	10	10	KS140-10-PL-SK-M	4010375 *	10	10
15	KS140-15-PL-M	4010586 *	6	6	KS140-15-PL-SK-M	4010621 *	6	6
20	KS140-20-PL-M	4010587 *	5	5	KS140-20-PL-SK-M	4010376 *	5	5
25	KS140-25-PL-M	4010588 *	4	4	KS140-25-PL-SK-M	4010622 *	4	4
50	KS140-50-PL-M	4010589 *	2	2	KS140-50-PL-SK-M	4010623 *	2	2



\* No stock item, delivery time on request.

# ACCESSORIES


## Adhesive · Cleaner

	Description	Order No.	Can content	pcs./ carton
	<b>Adhesive</b>			
	Adhesive 414 · toluene free · can	4004706	220 g	24
	Adhesive 414 · toluene free	4004708	660 g	20
	Adhesive 414 · toluene free	4004710	2200 g	6
	<b>Cleaner</b>			
	Cleaner	4004732	1.0 l	12

## Tools

	Description	Order No.	content/ PU
	<b>Glue pump</b>		
	Glue pump · long spout · Brush 17 mm	4004718	1
	Glue pump · short spout · Brush 17 mm	4004715	1
	Brush 11 mm	4004716	1
	Brush 17 mm	4004717	1
	<b>Knives</b>		
	Ceramic knife · knife with ceramic blade (15 cm) and plastic handle (14 cm)	4004737	1
	Sheet knife	4004735	1
	Kaiflex set of knives · 3 knives, 1 whetstone	4004736	1

## Tape

	Description	Order No.	Width mm	Rolls/ carton
	<b>Tape · self-adhesive</b>			
	Protect BLACK Butyl-Tape · 25 m Length	4004685	50	1
		4004686	100	1