

# K-FLEX



## Acoustic Insulation



Solutions for Acoustic Comfort



**K-FLEX**

[www.kflex.com](http://www.kflex.com)



**K-FLEX**

IK GROUP



**K-FLEX**

**K-FLEX** is an Italian manufacturing company specialising in the production of thermal and acoustic flexible elastomeric insulation materials.

**K-FLEX** has production facilities and subsidiary networks around the globe supplying their products to a worldwide customer base. Its diversified range of products provides solutions for various market sectors, including building, transportation, petrochemical and renewable energy.

**K-FLEX** is a worldwide market leader focused on technological innovation and high quality products that play an essential role in energy consumption control and the reduction of greenhouse gas emissions.

**K-FLEX** is a successful Italian company that has established itself worldwide. The company is present in 60 countries with production facilities in all continents and more than 2,000 employees. In addition, the company has commercial branches located all over the world, for the efficient and effective global distribution process of its products.







The original manufacturing plant, located in Roncello (north of Milan), was founded in 1989 and **today it is the largest facility in the world producing elastomeric insulation.**

The company has UNI EN ISO 9001:2008 and ISO 14001 certification and offers a wide range of products that ensure quality, reliability and compliance with market standards.

**K-FLEX** products also play a very important role in conserving the environment by improving the relationship between energy consumption and pollutant emissions, controlling energy consumption and reducing the release of greenhouse gases into the atmosphere.

[www.kflex.com](http://www.kflex.com)

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K-FLEX ACOUSTIC  
SOLUTIONS

Keep the  
noise **OUT**



# K-FLEX

## K-FLEX ACOUSTIC SOLUTIONS

Whether at home, work or leisure, most of our time is spent inside buildings, so it is important that we feel comfortable. The optimum environment is created from a combination of the correct ambient temperature, humidity and lighting, access to necessary resources and suitable acoustic insulation. All these factors have to be taken into consideration when designing buildings, and will also have a direct bearing on the build cost and final project value.

K-FLEX offers good value high performance acoustic solutions to meet the demands of today's buildings (both new-build and renovation projects) with high quality, excellent durability and optimum design, complying with the required regulations.

K-FLEX products are manufactured to the highest specifications using high quality durable materials and finishes with excellent performance qualities.



# ACOUSTIC COMFORT FOR BUILDINGS

## K-FLEX QR CODE | INTERACT WITH OUR WEBSITE



### **EASY!**

You can **scan** the QR Codes at the beginning of each product section with free software on your smartphone (Android, Apple and Windows).

This allows you to access additional up-to-date certification or information.



# K-FLEX

## HOW SOUND IS PROPAGATED THROUGH BUILDINGS

When a sound wave passing through the air meets a partition, some of the energy is reflected and the rest is absorbed. Part of the absorbed energy will spread within the partition, and the rest crosses through the partition and is transmitted to the other side. When looking at transmission of sound between two adjacent rooms, it is possible to identify different routes: direct through the partition, and indirect through the structure itself. In addition to this any sound caused by impact - such as furniture being moved, or people walking about - can spread within the building with the same mechanism as airborne noise. The difference is that the structure will vibrate when impacted by a solid object.

## ACOUSTIC INSULATION AND SOUND ABSORPTION

Acoustic insulation is designed to minimize the transmission of sound between two areas, ensuring that the noise produced in one does not transmit to adjacent areas. In this way, a dividing wall between compartments and the surrounding facilities should ensure insulation against sound transmission. The other purpose of sound insulation is to reduce the reflection of sound from the structures of a room and reducing any acoustic reverberation. In all cases, materials for walls, ceilings and floors should be chosen for their sound absorbing performance and characteristics.

## EVALUATION INDEX

The parameters defining the acoustic properties of a partition are measured in frequency bands of one third of an octave from 100 to 3150Hz. A wall is characterized by different values of the sound reduction index according to the frequency chosen.

To facilitate the definition of the overall acoustic performance of a building component, with a single number, the evaluation index was introduced. This is calculated by using a procedure averaging the values to individual frequencies. (R = soundproofing capability by frequency,  $R_w$  = index of soundproofing capability,  $\Delta L$  = attenuation of sound pressure level from footsteps by frequency,  $\Delta L_w$  = index of attenuation).

The method for calculating this index is set out in UNI EN ISO 717-1 (airborne noise) and UNI EN ISO 717-2 (underfloor insulation).

### DOCUMENTATION ► PDF



**Brochure  
PDF format**



**Acoustic  
Website**



# ACOUSTIC COMFORT FOR BUILDINGS



**FLOOR  
INSULATION**



**STRUCTURE  
INSULATION**

**WALL  
INSULATION**



**HVAC**





# K-FLEX





# K-FLEX ACOUSTIC SOLUTIONS

## ENGINEERING SERVICES FOR ACOUSTIC INSULATION

K-FLEX offers a wide range of solutions for acoustic applications: products for acoustic insulation, sound absorption and to reduce the transmission of vibration. Many years of experience in research and the development of new materials means that K-FLEX can provide optimum solutions for different applications.

K-FLEX can provide the necessary technical support to address a large range of acoustic insulation requirements and always aims to offer the best possible solution for the application through the use of calculation, monitoring equipment and practical simulation.

For several years now K-FLEX has been working closely with some of the most important research institutes and universities with the aim of improving the acoustic performance of its products. Over the years these partnerships have enabled us to develop a number of innovative products while at the same time creating a range of design solutions to improve the service that the company offers to customers.





# K-FLEX

## FLOOR INSULATION

Acoustic insulation for footfall on floating floors



Floor Insulation



Structure Insulation

## STRUCTURE INSULATION

Acoustic insulation for buildings and to reduce vibration transmission

## WALL INSULATION

Acoustic insulation, reducing the airborne transmission, for both solid and lightweight walls.



Wall Insulation



HVAC/R Systems and noise

## HVAC

Acoustic insulation for technical installations, ventilation and drainage systems



K-FLEX





## FLOATING FLOOR

*Ceramic tiles,  
Wooden or Stone*

*Separating strips*

*Floating screed*

*K-FLEX ST*

*Concrete*

K-FLEX ► ST		
<b>Material:</b>	Flexible elastomeric foam	EN 14304
<b>Fire classification:</b>	B-s3,d0	EN 13501
<b>Dimensions:</b>	h 1000 mm - Rolls 30 m	
<b>Thickness:</b>	6 mm	
<b>Dynamic stiffness</b>	54 MN/m <sup>3</sup>	UNI EN 29052
<b>Surface:</b>	Smooth	
<b>Weight:</b>	0,3 Kg/m <sup>2</sup> (±10%)	
<b>Base colour:</b>	Black	
<b>Density:</b>	50 kg/m <sup>3</sup> (±10%)	
<b>Compressibility</b>	0,3±0,05 mm	UNI EN 12431

FLOATING FLOOR  
attenuation of the pressure level:  $\Delta L_w = 25$  dB  
Correction terms:  $C_{l,\Delta} = -14$  dB

Description of components	Thickness (mm)
<b>1</b> Ceramic Tiles	10
<b>2</b> Floating Screed	50
<b>3</b> K-FLEX ST	6
<b>4</b> Concrete	140



## FLOATING FLOOR

The floating floor is the most common technical solution for sound insulation in the building industry. To insulate a floor against the sound made by footsteps, a resilient material must be placed between the source of the noise and the building structure.

The use of an elastic material installed under the floating screed, with certified performance of low dynamic stiffness value and capable of supporting the load of the screed, can reduce the transmission of vibration, increasing the value of  $\Delta L_w$ .

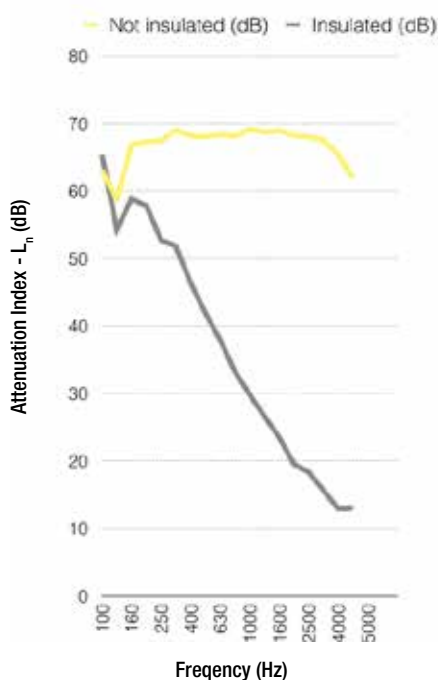
When laying down a floating screed it is important to avoid contact between the screed and the perimetral structure. For this reason the resilient material installed on the floor should also be turned up against the walls to 5cm more than the final level of the floor.



Detail of K-FLEX ST turned up against walls



## PERFORMANCE



Freq. (Hz)	Not insulated (dB)	Insulated (dB)	$\Delta L$ (dB)
100	63,0	65,4	-2,3
125	58,8	54,3	4,4
160	66,8	58,8	8,0
200	67,3	57,8	9,4
250	67,4	52,7	14,7
315	69,0	51,8	17,2
400	68,2	46,4	21,8
500	68,0	41,9	26,2
630	68,4	37,9	30,5
800	68,1	33,2	34,9
1000	69,1	29,8	39,3
1250	68,7	26,6	42,1
1600	68,9	23,5	45,5
2000	68,2	19,5	48,7
2500	68,0	18,3	49,7
3150	67,5	15,6	51,9
4000	65,4	12,9	52,6
5000	61,9	13,0	48,9

### ACOUSTIC PERFORMANCE

$L_{nr0,w}$	= 78 dB
$L_{nr,w}$	= 53 dB
$\Delta L_w$	= 25 dB
$C_{i,\Delta}$	= -14 dB

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## PLASTERBOARD ON SOLID WALL

*Solid wall*

*Plaster*

*K-FONIK ST GK 072  
or K-FONIK GK*

*Plasterboard*

*K-FONIK GK Strip*



### K-FONIK ST GK 072 ▶

<b>Material type:</b>	Flexible elastomeric foam high-density elastomeric material	
<b>Weight:</b>	4,4 Kg/m <sup>2</sup>	
<b>Fire classification:</b>	B - s3,d0	EN 13501
<b>Thermal conductivity:</b>	0.036 W/(m•k)	EN 12667 DIN 52612
<b>Dimensions:</b>	2000 x 1000 mm	
<b>Surface:</b>	Smooth	
<b>Base colour:</b>	Black	

PLASTERBOARD ON SOLID WALL  
Weighted sound reduction index  $R_w = 45$  dB  
Correction terms:  $C = -1$  dB;  $C_w = -6$  dB

Description of components	Thickness (mm)
<b>1</b> Solid wall	80
<b>2</b> Plaster	15
<b>3</b> K-FONIK ST GK 072	12
<b>4</b> Plasterboard	13





## PLASTERBOARD ON SOLID WALL

Good insulation from airborne sound between different units can be achieved by correct installation of the appropriate dividing partitions.

Sound insulation of solid or light walls is mainly determined by the mass per surface unit.

An increase of mass corresponds to an increase of sound insulation wall  $R_w$ .

Viscoelastic mass (K-FONIK ST GK 072 or K-FONIK GK) can be installed directly onto solid walls and single or double plasterboard installed on top.

To further reduce lateral transmission of noise where connected to the floor, perimeter walls or ceiling, strips of separating material (K-FONIK GK strip) should be installed.

## DOUBLE PLASTERBOARD ON SOLID WALL

The use of a double plasterboard configuration will improve performance.

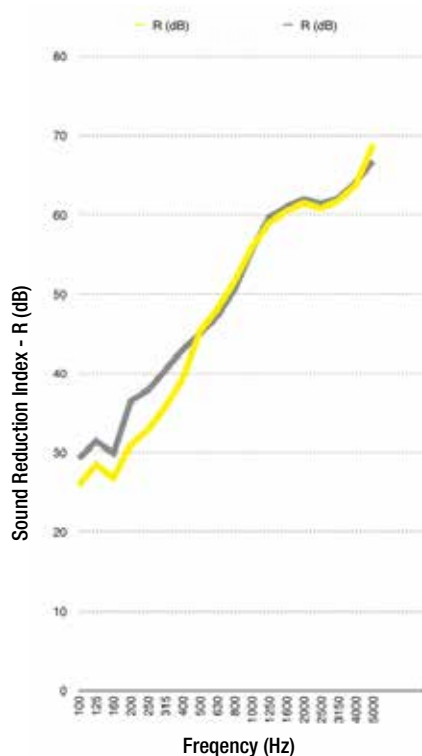


Double Plasterboard Configuration

**DOUBLE PLASTERBOARD ON SOLID WALL**  
Weighted sound reduction index  $R_w = 49$  dB  
Correction terms:  $C = -2$  dB;  $C_{tr} = -7$  dB

Description of components	Thickness (mm)
<b>1</b> Solid wall	80
<b>2</b> Plaster	15
<b>3</b> K-FONIK ST GK 072	12
<b>4</b> Plasterboard	13
<b>5</b> Plasterboard	13

## PERFORMANCE



Freq. (Hz)	Plasterboard R (dB)	Double Plasterboard R (dB)
100	25,9	29,2
125	28,5	31,5
160	26,8	29,9
200	31,0	36,5
250	32,9	37,9
315	35,8	40,4
400	39,3	43,0
500	45,3	45,0
630	48,1	47,2
800	51,6	50,6
1000	55,9	55,6
1250	59,0	59,7
1600	60,5	61,0
2000	61,5	62,0
2500	60,8	61,4
3150	61,8	62,1
4000	63,8	64,1
5000	68,8	66,8

### ACOUSTIC PERFORMANCE PLASTERBOARD

$$R_w (C; C_{tr}) = 45 (-1; -6) \text{ dB}$$

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### ACOUSTIC PERFORMANCE DOUBLE PLASTERBOARD

$$R_w (C; C_{tr}) = 49 (-2; -7) \text{ dB}$$

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## SOLID WALL WITH PLASTERBOARD ON METAL FRAME

*Solid wall*

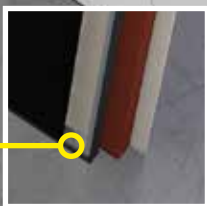
*Plaster*

*Metal Frame*

*K-FONIK ST GK 072  
or K-FONIK GK*

*Plasterboard*

*K-FONIK GK Strip*



### K-FONIK ST GK 072 ▶

<b>Material type:</b>	Flexible elastomeric foam high-density elastomeric material	
<b>Weight:</b>	4,4 Kg/m <sup>2</sup>	
<b>Fire classification:</b>	B - s3,d0	EN 13501
<b>Thermal conductivity:</b>	0.036 W/(m•k)	EN 12667 DIN 52612
<b>Dimensions:</b>	2000 x 1000 mm	
<b>Surface:</b>	Smooth	
<b>Base colour:</b>	Black	

### SOLID WALL WITH PLASTERBOARD ON METAL FRAME

Weighted sound reduction index  $R_w = 45$  dB

Correction terms:  $C = -1$  dB;  $C_{tr} = -6$  dB

Description of components	Thickness (mm)
<b>1</b> Solid Wall	80
<b>2</b> Plaster	15
<b>3</b> K-FONIK ST GK 072	12
<b>4</b> Metal Frame	50
<b>5</b> Plaster Board	13



## SOLID WALL WITH PLASTERBOARD ON METAL FRAME

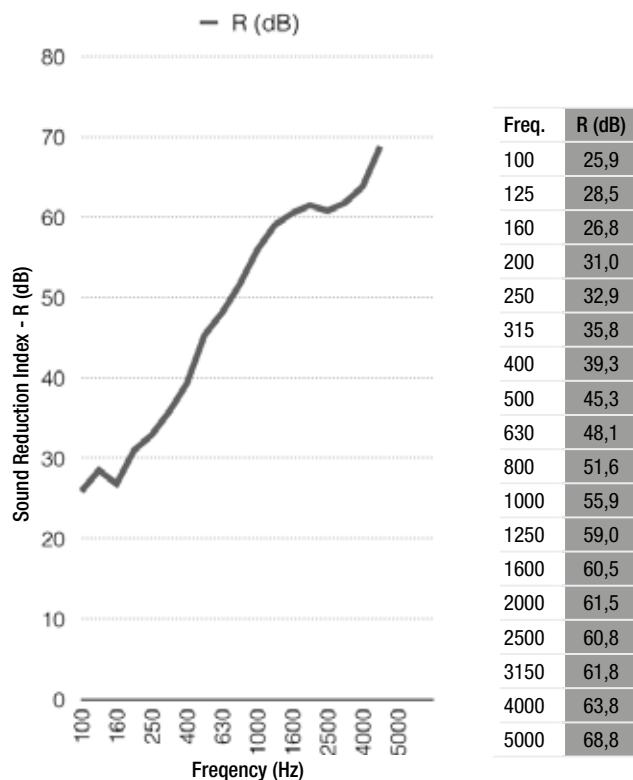
An alternative solution is to install plasterboard onto metal framework fixed to the existing solid wall. A layer of K-FONIK ST GK 072 or K-FONIK GK viscoelastic insulation material is applied to the existing solid wall. Plasterboard is applied to the metal framework.

The metal framework is separated from the wall by the use of strips of K-FONIK GK product.

Performance can be improved by filling the cavity inside the metal structure with sound absorbing material, like K-FONIK Open Cell 160 or 240.



### PERFORMANCE



To reduce lateral transmission of noise at the connection between the floor and the perimeter walls or ceiling, strips of separating material should be installed underneath the metal frame.

### ACOUSTIC PERFORMANCE

$$R_w (C; C_{tr}) = 45 (-1; -6) \text{ dB}$$

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# LIGHTWEIGHT PLASTERBOARD WALLS

*Plasterboard*

*K-FONIK GK*

*Metal Frame*

*K-FONIK GK*

*Plasterboard*

*K-FONIK GK Strip*



## K-FONIK GK ►

<b>Material type:</b>	High density elastomeric material	
<b>Weight:</b>	From 4 to 8 Kg/m <sup>2</sup>	
<b>Fire classification:</b>	B - s3,d0	EN 13501
<b>Dimensions:</b>	1000 x 2000 mm; 1200 x 2000 mm; 1500 x 2000 mm - Rolls 25 or 50 m	
<b>Surface:</b>	Smooth	
<b>Base colour:</b>	Black	
<b>Density:</b>	2000 kg/m <sup>3</sup> (±10%)	

LIGHTWEIGHT PLASTERBOARD WALLS  
Weighted sound reduction index : Rw= 42 dB  
Correction terms: C= -2dB; Ctr= -7dB

Description of components	Thickness (mm)
<b>1</b> Plasterboard	13
<b>2</b> K-FONIK GK	2
<b>3</b> Metal Frame	75
<b>4</b> K-FONIK GK	2
<b>5</b> Plasterboard	13



## LIGHTWEIGHT PLASTERBOARD WALLS

A typical installation of partition walls between rooms in residential, commercial or office buildings involves the construction of lightweight walls with plasterboard on a metal framework.

A layer of soundproofing material is applied to the plasterboard.

The boards are then fixed to the metal structure. Performance can be improved by filling the cavity inside the metal structure with sound absorbing material.

## LIGHTWEIGHT DOUBLE PLASTERBOARD WALLS

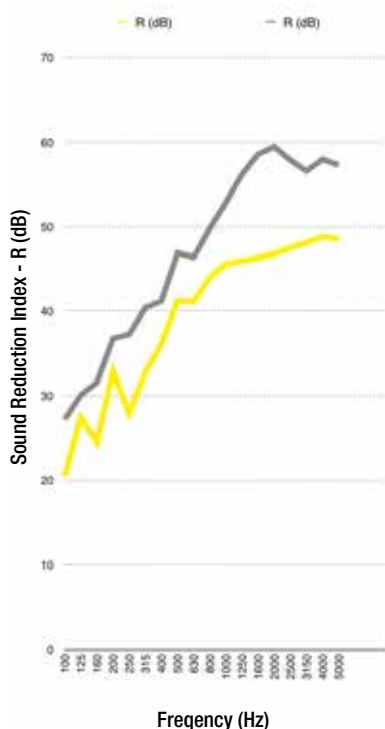
Using a double plasterboard configuration will improve performance.



Double Plasterboard Configuration  
LIGHTWEIGHT DOUBLE PLASTERBOARD WALLS  
WEIGHTED SOUND REDUCTION INDEX  $R_w = 48$  dB  
Correction terms:  $C = -1$  dB;  $C_v = -6$  dB

Description of components	Thickness (mm)
1 Plasterboard	13
2 Plasterboard	13
3 K-FONIK GK	2
4 Metal Frame	75
5 K-FONIK GK	2
6 Plasterboard	13
7 Plasterboard	13

## PERFORMANCE



	Plasterboard	Double Plasterboard
Freq. (Hz)	R (dB)	R (dB)
100	20,5	27,2
125	27,4	30,1
160	24,5	31,6
200	32,9	36,8
250	27,9	37,3
315	32,8	40,4
400	36,1	41,2
500	41,2	46,9
630	41,1	46,4
800	44,0	49,8
1000	45,6	52,9
1250	46,0	56,2
1600	46,3	58,6
2000	46,8	59,5
2500	47,5	57,9
3150	48,1	56,6
4000	48,8	58,0
5000	48,6	57,3

### LIGHTWEIGHT PLASTERBOARD WALLS

$$R_w (C; C_{tr}) = 42 (-2; -7) \text{ dB}$$

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### LIGHTWEIGHT DOUBLE PLASTERBOARD WALLS

$$R_w (C; C_{tr}) = 48 (-1; -6) \text{ dB}$$

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# ELEVATOR SHAFTS AND STAIRCASES

## K-FLEX ST

## K-FLEX ST



## APPLICATION

Flights of stairs are among the structural elements that can generate and transmit noise.

Unlike floor screeds, you cannot make floating staircases, but you can take preventative action on the support points of the ramps.

Even in this situation the appropriate material can be installed at the support points and also where the stairs meet with the outside walls.

### K-FLEX ▶ ST

<b>Material:</b>	Flexible elastomeric foam	EN 14304
<b>Fire classification:</b>	B-s3,d0	EN 13501
<b>Dimensions:</b>	h 1000 mm - Rolls 30 m	
<b>Thickness:</b>	6 mm	
<b>Dynamic stiffness</b>	54 MN/m <sup>3</sup>	UNI EN 29052
<b>Surface:</b>	Smooth	
<b>Weight:</b>	0,3 Kg/m <sup>2</sup> (±10%)	
<b>Base colour:</b>	Black	
<b>Density:</b>	50 kg/m <sup>3</sup> (±10%)	
<b>Compressibility</b>	0,3±0,05 mm	UNI EN 12431





# PILLARS AND BEAMS

## K-FONIK GK

### K-FONIK GK ▶

<b>Material type:</b>	High density elastomeric material	
<b>Weight:</b>	From 4 to 8 Kg/m <sup>2</sup>	
<b>Fire classification:</b>	B - s3,d0	EN 13501
<b>Dimensions:</b>	1000 x 2000 mm; 1200 x 2000 mm; 1500 x 2000 mm - Rolls 25 or 50 m	
<b>Surface:</b>	Smooth	
<b>Base colour:</b>	Black	
<b>Density:</b>	2000 kg/m <sup>3</sup> (±10%)	

## APPLICATION

Insulation of structural elements of a building (beams and pillars), to prevent the propagation of vibration between walls and floors through structural elements.

Where buildings have not been correctly designed, sound can propagate through several floors.

In pre-fabricated buildings it is possible to prevent this by insulating the structural supports between pillars and beams, using a resilient material with the appropriate insulating and mechanical characteristics.

### K-FONIK ST GK ▶

<b>Material type:</b>	Flexible elastomeric foam with high-density elastomeric material	
<b>Weight:</b>	4,4 Kg/m <sup>2</sup> (K-FONIK ST GK 072)	
<b>Fire classification:</b>	B - s3,d0	EN 13501
<b>Thermal conductivity:</b>	0.036 W/(m•K)	EN 12667 DIN 52612
<b>Temperature range:</b>	-40 °C +70 °C	
<b>Dimensions:</b>	2000 x 1000 mm	
<b>Surface:</b>	Smooth	
<b>Base colour:</b>	Black	



## AIRDUCT



## APPLICATION

Excessive noise is often a problem in ventilation systems, this can result in rooms being too noisy after installation.

The nature of this noise depends mainly on the air flow rate and the shape of the duct cross-sectional area, as well as being affected by the position of the duct itself and its rotation angles.

A range of acoustic materials can be provided to effectively address the problem, the most common solution is duct taping and acoustic damping material. K-FONIK ST GK 072 or K-FONIK GK glued securely to the metal surface or wrapped around and mechanically fastened to the duct result in a sound insulating cocoon.



## OEM PRODUCTS



*K-FONIK B*

## APPLICATION

Acoustic insulation and sound absorption products are widely used by OEMs in various industries and applications. Their use in household equipment improves acoustic comfort and increases the quality of the product.

Typical applications: ventilation systems, household appliances, pumps, compressors etc...

The use of K-Flex acoustic products in industrial equipment and machinery makes it possible to reduce noise and satisfy legislative requirements.

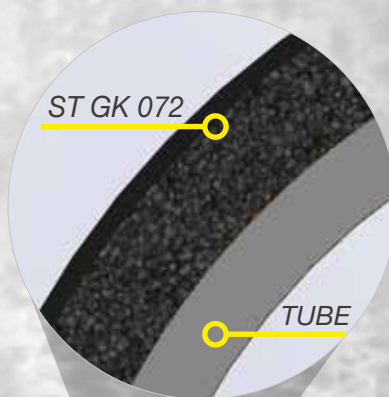
## OEM Solutions



K-FLEX reserves the right to change data and technical requirements without notice.



## DRAINAGE PIPES



### K-FONIK ST GK 072

#### K-FONIK ST GK 072 ▶

<b>Material type:</b>	Flexible elastomeric foam high-density elastomeric material	
<b>Weight:</b>	4,4 Kg/m <sup>2</sup>	
<b>Fire classification:</b>	B - s3,d0	EN 13501
<b>Thermal conductivity:</b>	0.036 W/(m•k)	EN 12667 DIN 52612
<b>Dimensions:</b>	2000 x 1000 mm	
<b>Surface:</b>	Smooth	
<b>Base colour:</b>	Black	

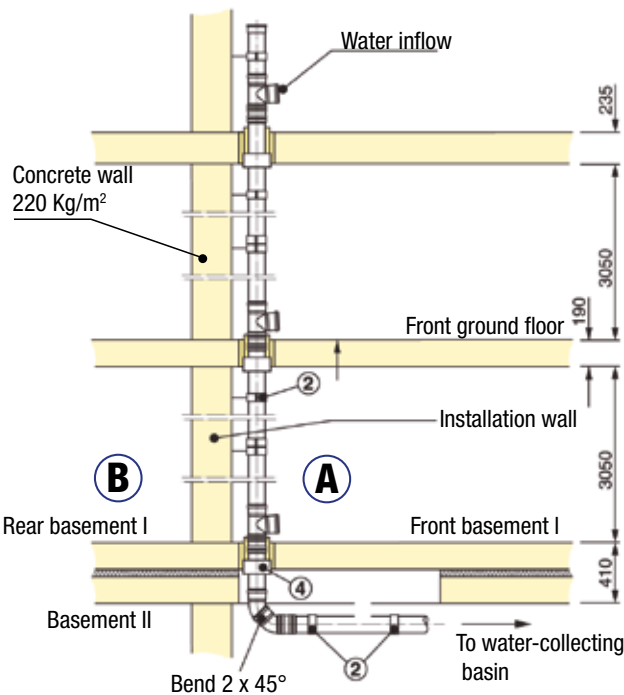


# DRAINAGE PIPES

Acoustic insulation of services such as drainage pipes is an important acoustic issue in buildings. K-FONIK ST GK 072 is an effective solution for sound insulation of drainage pipe installations. Tested according to UNI EN 14366 this solution is certified for its performance for this application (Fraunhofer Institute certificate No. **P-BA 209/2015e**). This test allows for detailed evaluation of acoustic comfort in terms of sound pressure level attenuation in drainage pipe applications. Easy to install, K-FONIK ST GK 072 wrapped around the pipe provides an acoustic comfort in a variety of test conditions.



## FRAUNHOFER INSTITUTE CERTIFICATE NO. P-BA 209/2015e



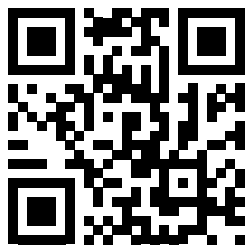
Measurements in accordance with DIN 4109 and DIN EN 14366 standards. Test carried out by simulating a real installation in a multi-storey building. Noise excitation by constant water flow with 0.5 litres/second, 1.0 l/s, 2.0 l/s and 4.0 l/s respectively.

Insulation sound level $L_{A\text{Feq},n} (L_{In})$ [dB(A)], according to DIN 4109					
Flow rate [l/s]		0,5	1,0	2,0	4,0
<b>Reference set-up</b> Wastewater system without pipe covering. Rigid installation of the wastewater system	(A) UG front	49	51	53	55
	(B) UG rear	35	36	36	38
<b>Test set-up</b> <b>Wastewater system with acoustic insulation K-FONIK ST GK 072</b>	(A) UG front	38	39	38	41
	(B) UG rear	24	26	26	28
<b>A-sound pressure level reduction <math>\Delta L_{A,F}</math> in dB</b>	(A) UG front	11	12	15	14
	(B) UG rear	11	10	10	10

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# K-FLEX

## K-FONIK PRODUCT RANGE

K-FLEX offers a wide range of acoustic insulation solutions for many different applications to provide a more comfortable environment.





		SOUND INSULATION				SOUND ABSORPTION						SYSTEM
WORK SECTOR	APPLICATIONS	K-FLEX ST	K-FLEX K-FONIK ST GK	K-FLEX K-FONIK GK	K-FLEX K-FONIK GV	K-FLEX K-FONIK OPEN CELL160	K-FLEX K-FONIK OPEN CELL 240	K-FLEX K-FONIK B	K-FLEX K-FONIK P	K-FLEX K-FONIK PE GK	K-FLEX K-FONIK PU GK	K-FLEX INDUSTRIAL*
BUILDING	Floors	●										
	Walls		●	●		●	●	●	●			
	Structure	●	●	●								
HVAC	Ventilation ducts and drainage pipes		●	●		●	●	●		●	●	
INDUSTRIAL and OIL & GAS	Piping, equipment and plants			●	●		●					●
OEM PRODUCTS	Machinery covers, engine compartments		●	●		●	●	●	●	●	●	
TRAIN & SHIPBUILDING	Engine and frames, partitions, technical installations				●							
AUTOMOTIVE	Engine noise insulation and frames, sound absorption for roof frames, driver cabins		●	●		●	●					

\* Refer to K-FLEX K-FONIK INDUSTRIAL brochure



## K-FLEX ▶ K-FONIK ST GK

# K-FLEX K-FONIK ST GK

Smooth elastomeric sound insulation panel in various thicknesses, coupled with a high density elastomeric sheet.  
**The product is lead-free and therefore does not represent a health risk.**

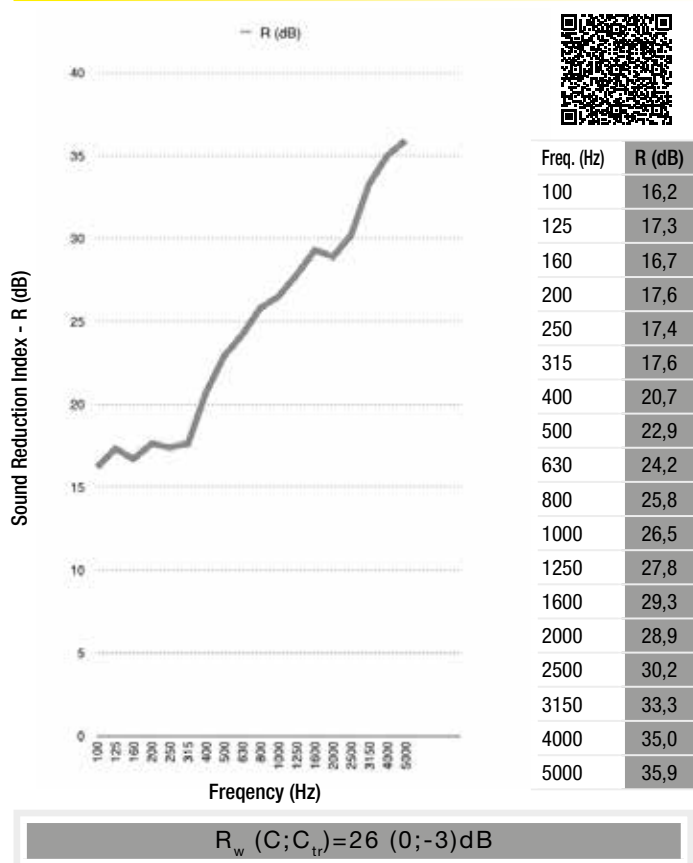
K-FONIK ST GK combines the features of K-FONIK GK with a layer of our elastomeric K-FLEX ST.

## APPLICATION ▶

K-FONIK ST GK is ideal for sound insulation of walls, ceilings, acoustic cabins, drainage systems, OEM sound insulation applications, etc.



## ACOUSTIC PERFORMANCE ▶



## RANGE ▶

### K-FONIK ST GK 074

4 Kg/m<sup>2</sup> high-density elastomeric material  
3 mm ST

### K-FONIK ST GK 072

4 Kg/m<sup>2</sup> high-density elastomeric material  
10 mm ST

### K-FONIK ST GK 070

4 Kg/m<sup>2</sup> high-density elastomeric material  
16 mm ST

### K-FONIK ST GK ST 074

3 mm ST  
4 Kg/m<sup>2</sup> high-density elastomeric material  
3 mm ST

Please see the price list for the full range

### K-FONIK ST GK ▶

<b>Material type:</b>	Flexible elastomeric foam with high-density elastomeric material	
<b>Weight:</b>	4,4 Kg/m <sup>2</sup> (K-FONIK ST GK 072)	
<b>Fire classification:</b>	B - s3,d0	EN 13501
<b>Thermal conductivity:</b>	0.036 W/(m•k)	EN 12667 DIN 52612
<b>Temperature range:</b>	-40 °C +70 °C	
<b>Dimensions:</b>	2000 x 1000 mm	
<b>Surface:</b>	Smooth	
<b>Base colour:</b>	Black	

K-FLEX reserves the right to change data and technical requirements without notice.



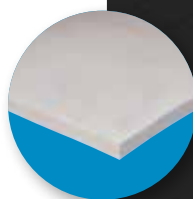


# K-FLEX K-FONIK GK / GV

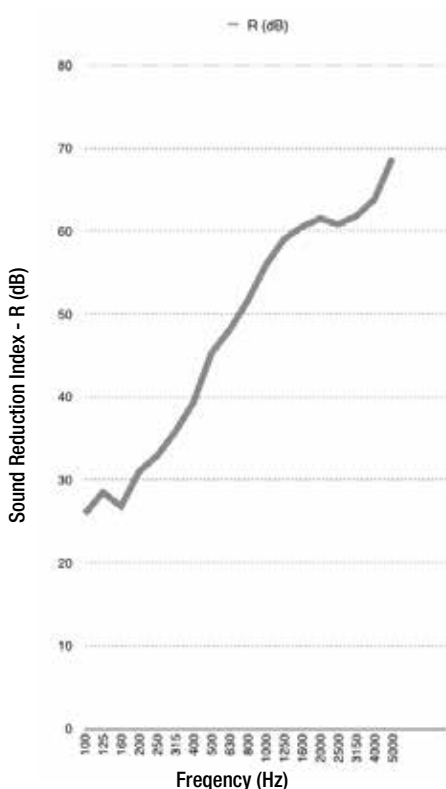
High-density elastomeric acoustic insulating panel for building, OEM and industrial applications. **The product is lead-free and therefore does not represent a health risk.**

**K-FONIK GK** is a high density elastomeric material based on partially reticulated polymers with viscoelastic properties designed for acoustic insulation applications. Installed as a mass barrier, its special sound insulation characteristics make it an excellent product for insulation of walls and ceilings in civil applications, pipe insulation in industrial applications and damping reduction in OEM applications.

**K-FONIK GV** is a high density elastomeric material based on partially reticulated polymers and fireproof mineral fillers. Its viscoelastic properties make it ideal for acoustic insulation in shipbuilding and railway applications.



## ACOUSTIC PERFORMANCE ▶



Freq. (Hz)	R (dB)
100	20,9
125	14,5
160	15,6
200	16,6
250	18,8
315	17,9
400	20,2
500	21,1
630	23,1
800	25,2
1000	27,1
1250	29,2
1600	31,5
2000	32,6
2500	33,6
3150	35,6
4000	37,4
5000	37,9

$$R_w (C; C_{tr}) = 27(-1; -4) \text{ dB}$$

## APPLICATION ▶

**K-FONIK GK** is ideal for sound insulation of walls, ceilings, acoustic cabins, drainage systems, OEM sound insulation applications, etc.

**K-FONIK GV** is ideal for the railway and shipbuilding industries.

## RANGE ▶

**K-FONIK GK**  
from 4 to 8 Kg/m<sup>2</sup>

**K-FONIK GV**  
from 4 to 8 Kg/m<sup>2</sup>

High-density elastomeric material

High-density elastomeric material

Please see the price list for the full range

### K-FONIK GK ▶

<b>Material type:</b>	High density elastomeric material	
<b>Fire classification</b>	B - s3,d0 <sup>1)</sup> , IMO A653 (CE MARINE) <sup>2)</sup> , FMVSS 302	EN 13501
<b>Temperature</b>	-40 °C +70 °C	
<b>Dimensions:</b>	1000 x 2000 mm; 1200 x 2000 mm; 1500 x 2000 mm - Rolls 25 or 50 m	
<b>Surface</b>	smooth <sup>3)</sup>	
<b>Weight</b>	from 4 Kg/m <sup>2</sup> to 8 Kg/m <sup>2</sup>	
<b>Base colour</b>	Black (GK) White (GV)	
<b>Density</b>	2100 Kg/m <sup>3</sup> (±10%)	

1) only for K-FONIK GK on request 2) only for K-FONIK GV  
3) Different finishes available: ALU and non-woven fabric



## K-FLEX ▶ K-FONIK OPEN CELLS

# K-FLEX K-FONIK OPEN CELL

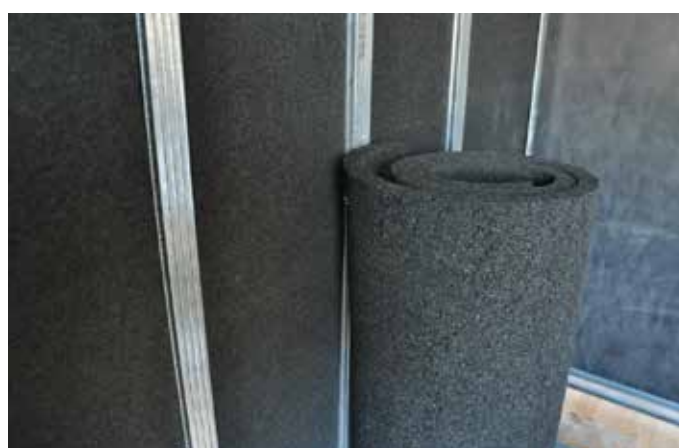
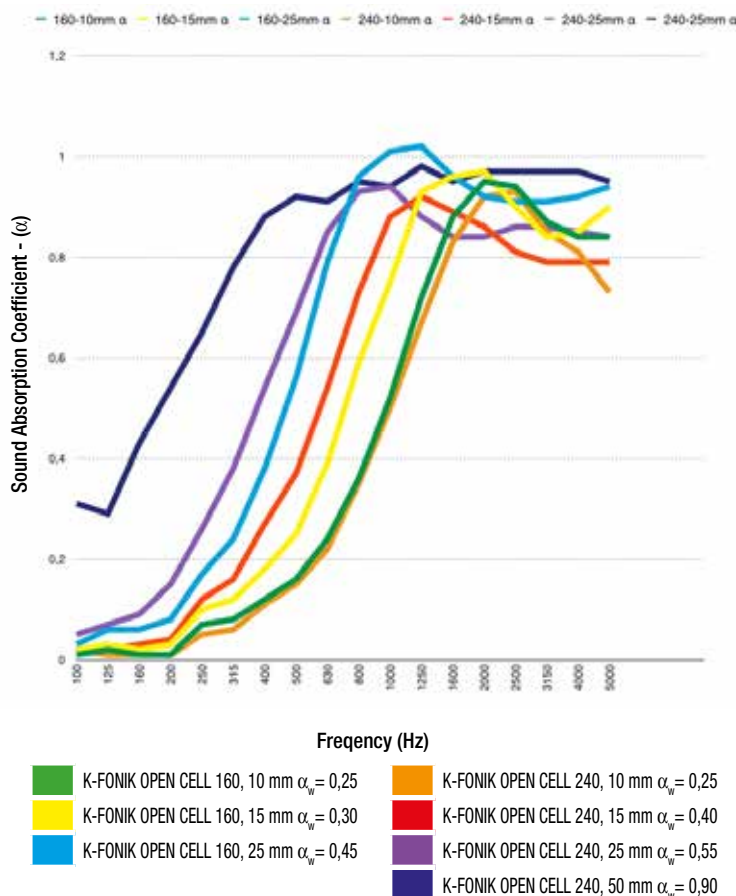
**K-FONIK OPEN CELL** is an open cell Flexible Elastomeric Foam designed for sound absorption.

Its viscoelastic properties, open cell structure and good air flow resistance make it excellent for acoustic insulation in building, HVAC/R, pipes and industrial applications. It combines excellent acoustic performances and insulation characteristics.

## APPLICATION ▶

**K-FONIK OPEN CELL** is ideal for sound absorption application; industrial pipes, building, OEM products and HVAC/R.

## ACOUSTIC PERFORMANCE ▶



## RANGE ▶

### K-FONIK 160 - 240

from 10 to 350 mm

Please see the price list for the full range

#### K-FONIK OPEN CELL ▶

<b>Material type:</b>	Flexible elastomeric foam open cell	
<b>Density:</b>	OPEN CELL 160: $\geq 100 \text{ kg/m}^3$ OPEN CELL 240: $240 \text{ kg/m}^3$ (-20 / +120 $\text{kg/m}^3$ )	
<b>Thermal conductivity:</b>	OPEN CELL 240: $0,056 \text{ W/(m}\cdot\text{k)}$ OPEN CELL 160: $0,048 \text{ W/(m}\cdot\text{k)}$	EN 12667 DIN 52612
<b>Fire classification:</b>	C - s3,d0	EN 13501
<b>Temperature:</b>	-40 °C +85 °C	
<b>Dimensions:</b>	see price list	
<b>Thickness:</b>	From 10 to 350 mm	
<b>Base colour:</b>	Black	
<b>Modulus (MPa):</b>	$22 \pm 3,7$ (160) - $57,7 \pm 8,0$ (240)	
<b>Elongation to break (%):</b>	$114 \pm 33$ (160) - $140 \pm 47$ (240)	
<b>Insertion Loss:</b>	K-FONIK 160 10mm $R_w=5 \text{ dB}$ K-FONIK 160 15mm $R_w=8 \text{ dB}$ K-FONIK 160 25mm $R_w=9 \text{ dB}$ K-FONIK 240 10mm $R_w=8 \text{ dB}$ K-FONIK 240 15mm $R_w=10 \text{ dB}$ K-FONIK 240 25mm $R_w=14 \text{ dB}$	



# K-FLEX K-FONIK B

Embossed surface polyurethane foam sheet ideal for acoustic absorption.

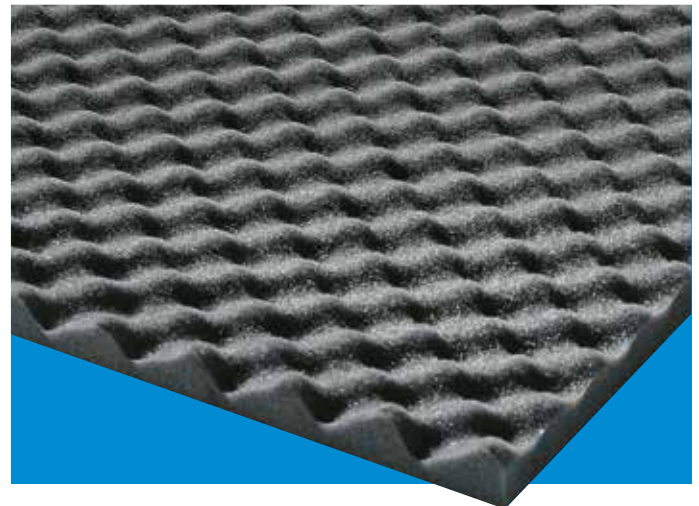
**K-FONIK B** material is specifically designed for situations where sound absorption is a priority.

It is made of open cell flexible polyurethane foam with a density of 25/30 kg/m<sup>3</sup>.

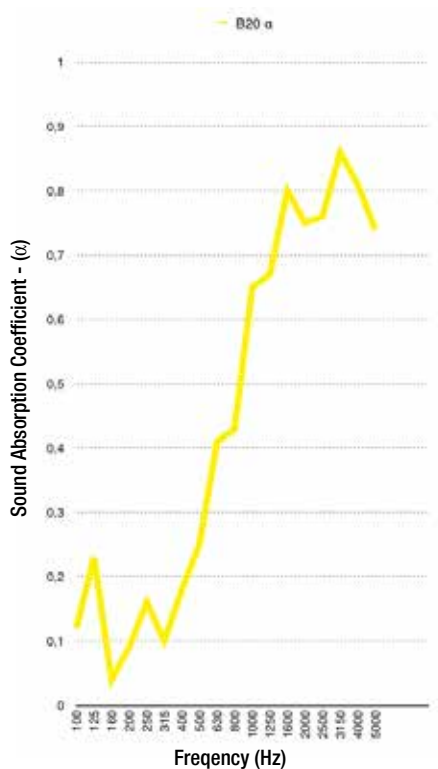
It is also available in the **K-FONIK ST B** version made with **ST** rubber foam.

## APPLICATION ▶

**K-FONIK B** is widely used in gyms, conference rooms, rifle ranges, recording studios, radio/television studios, moveable acoustic panels, engine rooms, etc.



## ACOUSTIC PERFORMANCE ▶



K-FONIK B 20 (Thickness: 20mm)



Freq. (Hz)	B20 α
100	0,12
125	0,23
160	0,04
200	0,09
250	0,16
315	0,10
400	0,18
500	0,25
630	0,41
800	0,43
1000	0,65
1250	0,67
1600	0,80
2000	0,75
2500	0,76
3150	0,86
4000	0,81
5000	0,74
α <sub>w</sub>	0,28

## RANGE ▶

### K-FONIK B 20



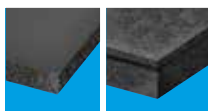
Please see the price list for the full range

### K-FONIK ST B 20



### K-FONIK B ▶

<b>Material type:</b>	Polyurethane foam / Flexible elastomeric foam	
<b>Density:</b>	25 ÷ 30 Kg/m <sup>3</sup>	
<b>Fire classification:</b>	B - s3,d0 (ONLY ST B version)	EN 13501
<b>Temperature:</b>	-40 °C +70 °C	
<b>Dimensions:</b>	1000 x 2000 mm - also available in rolls of different sizes	
<b>Surface:</b>	Embossed	
<b>Thickness:</b>	20 mm	
<b>Base colour:</b>	Black	



## K-FLEX ▶ K-FLEX ST / K-FONIK PE GK

# K-FLEX ST

### APPLICATION ▶

**K-FLEX ST** is ideal for the sound insulation of floating floors. Its mechanical properties reduce the transmission of sound from footsteps, increasing the  $\Delta L_w$  value.

### ACOUSTIC PERFORMANCE ▶

$\Delta L_w = 25 \text{ dB}$   
 $s't = 54 \text{ MN/m}^3$

### RANGE ▶

#### K-FLEX ST



K-FLEX ST 6 mm

Please see the price list for the full range



#### K-FLEX ▶ ST

Material:	Flexible elastomeric foam	EN 14304
Fire classification:	B - s3,d0	EN 13501
Temperature:	-165 °C +85 °C	
Dimensions:	h 1000 mm - 30 m Rolls	
Thickness:	6 mm	
Dynamic Stiffness	54 MN/m <sup>3</sup>	UNI EN 29052
Surface:	Smooth	
Weight:	0,3 Kg/m <sup>2</sup> (±10%)	
Base colour:	Black	
Density:	50 kg/m <sup>3</sup> (±10%)	
Compressibility:	0,3±0,05 mm	UNI EN 12431

# K-FLEX K-FONIK PE GK

**K-FONIK PE GK** is a sound insulation material with high density elastomeric sheet specifically designed to provide a solution to particular soundproofing problems. **K-FONIK PE GK** is a complete range with specific features designed to handle different types of acoustic requirements.

### APPLICATION ▶

**K-FONIK PE GK** is ideal for the sound insulation of fixed or false walls, ceilings and false ceilings, garages, acoustic cabins and drainage systems.

### RANGE ▶

#### K-FONIK PE GK



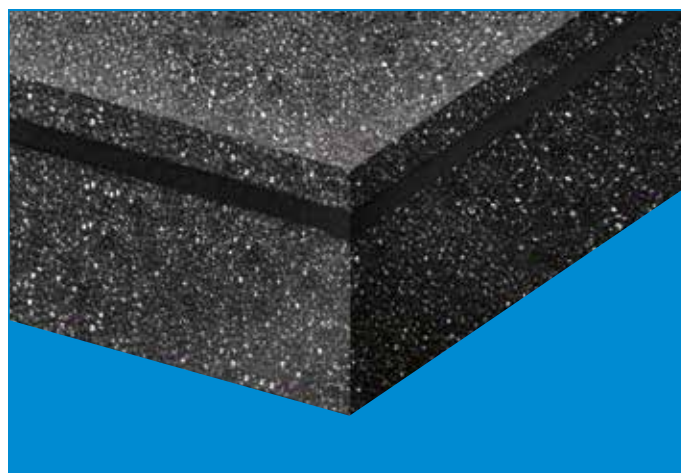
PE 3 mm  
 K-FONIK GK 4 Kg/m<sup>2</sup>  
 PE 3 mm

Please see the price list for the full range

#### K-FONIK PE GK



PE 3 mm  
 K-FONIK GK 4 Kg/m<sup>2</sup>  
 PU12 mm

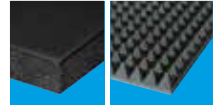


#### K-FONIK PE GK ▶

Material type:	Polyethylene foam and high density mass
Fire classification:	Self-extinguishing
Temperature:	-40 °C +70 °C
Dimensions:	1000 x 2000 mm in rolls
Surface:	Smooth
Base colour:	Black

K-FLEX reserves the right to change data and technical requirements without notice.





## K-FLEX K-FONIK PU GK

**K-FONIK PU GK** is a sound absorption material with high density elastomeric sheet specifically designed to provide a solution to particular soundproofing problems.

### APPLICATION ▶

**K-FONIK PU GK** is ideal for the sound insulation of fixed or false walls, ceilings and false ceilings, garages, acoustic cabins and drainage systems.

### RANGE ▶

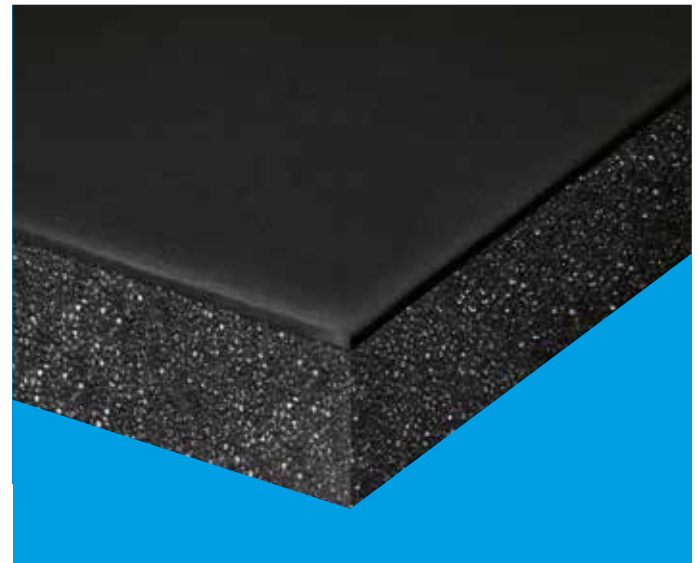
#### K-FONIK PU GK



#### K-FONIK PU GK



Please see the price list for the full range



#### K-FONIK PU GK ▶

<b>Material type:</b>	Polyurethane foam and high density mass
<b>Fire classification:</b>	Self-extinguishing
<b>Temperature:</b>	-40 °C +70 °C
<b>Dimensions:</b>	1000 x 2000 mm
<b>Surface:</b>	Smooth or embossed
<b>Base colour:</b>	Black

## K-FLEX K-FONIK P

**K-FONIK P** is a sound absorption material manufactured with a pyramid-shaped surface. It is the ideal acoustic insulation solution for rooms etc.

### APPLICATION ▶

**K-FONIK P** is widely used in gyms, conference rooms, rifle ranges, recording studios, radio/television studios, moveable acoustic panels, engine rooms, etc.

### ACOUSTIC PERFORMANCE ▶

P50 -  $\alpha_w = 0,34$   
P100 -  $\alpha_w = 0,82$



### RANGE ▶

#### K-FONIK P 50

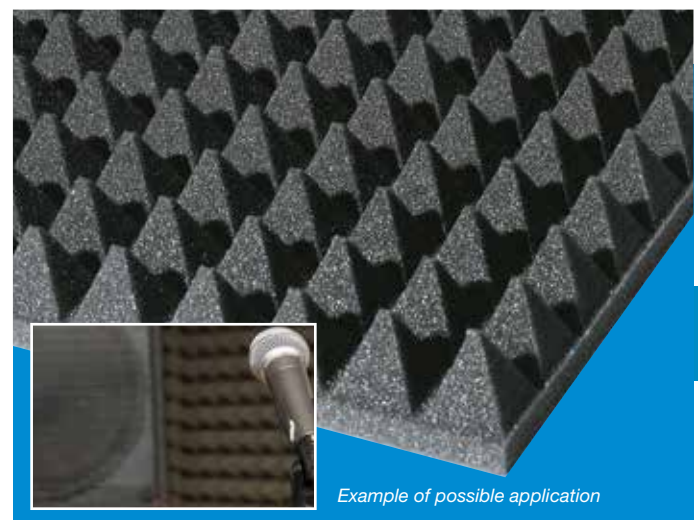


#### K-FONIK P 100



Please see the price list for the full range

**K-FLEX** reserves the right to change data and technical requirements without notice.



Example of possible application

#### K-FONIK P ▶

<b>Material type:</b>	Polyurethane foam
<b>Density:</b>	25 ÷ 30 Kg/m³
<b>Fire classification:</b>	Self-extinguishing
<b>Temperature:</b>	-40 °C +70 °C
<b>Dimensions:</b>	1000 x 1000 mm
<b>Surface:</b>	Pyramid structure
<b>Thickness:</b>	50 - 100 mm
<b>Base colour:</b>	Dark grey

CASE STUDIES  
& PROJECTS

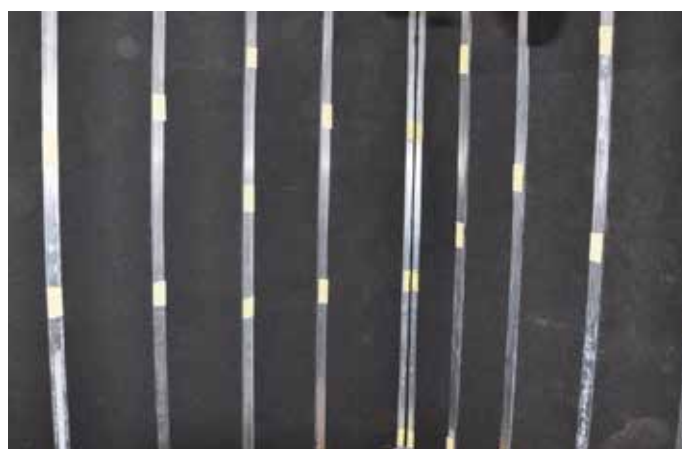
*case studie*

*Project*





## CIVIL APPLICATION



### K-FONIK CIVIL APPLICATION

Examples of K-FONIK products used to increase sound insulation performance in a building complex.

The dividing wall was built from aerated concrete brickwork. The following acoustic insulation materials were used:

- > K-FLEX K-FONIK GK sheets – high density rubber soundproofing
- > K-FLEX K-FONIK OPEN CELL 160 sheets - soundproofing open cell material made from FEF flakes compacted to the correct size and degree required to achieve the maximum performance over a wide frequency band.

K-FONIK GK sheets (high density rubber 3mm thick) are applied to the existing masonry wall, made ready with a thin layer of tile adhesive using a serrated trowel. Application is easy and requires no special skills apart from attention to detail and accuracy, especially where there is a junction with adjacent materials. Next a lightweight metallic frame is constructed, attached only to the ceiling and floor. The profiles of the metal structure are detached and simultaneously sealed with strips of K-FONIK GK. Please note that the K-FONIK GK strips must be wider than the profiles in order to allow plasterboard to be attached, avoiding contact with the floor and ceiling. The resulting structure is not acoustically

separated from the masonry wall. The vertical metal profiles are placed every 40cm, which makes the whole structure relatively rigid. The empty space between the light profiles of the metal structure is filled with sound absorption material, so as to increase the soundproofing properties and absorb a substantial portion of the acoustic energy.

Plaster boards are applied to the structure. Note that there is an empty space between the plasterboard and ceiling/wall. This space (2mm) must be filled with acrylic silicone. The resulting structure features a significant increase in the performance of the acoustic insulation, thanks also to the specific installation technique, which enables the masonry wall to be effectively separated. The K-FONIK GK and K-FONIK 160 materials are integrated to improve the quality of the sound insulation. The consequent improvement in terms of sound insulation of the counter wall is equal to 8-10 decibels.

COMPLETE  
CASE STUDY







## CML APPLICATION



## K-FONIK UPGRADING ACOUSTIC PERFORMANCES IN THE NEW SAP OFFICES.

Procedure: K-FLEX proposed applying a layer of K-FONIK ST GK 072 to the existing structure in the ceiling, installed with a "C" profile inside the uprights and cross members together with a layer of K-FONIK GK (4 kg/m<sup>2</sup>) combined with a 60 mm layer of polyester fibre.

The walls were insulated inside with polyester fibre panels, 60 mm thick with a density of 26 kg/m<sup>3</sup>, placed between the dampening panels;

K-FONIK GK 4kg/m<sup>2</sup> applied on the inside of the dampening panels;

Laminated elastomeric K-FLEX ST GK 072 installed with a "C" profile inside the perimeter duct and the transoms;  
When the work was completed, the sound insulation index 'R' on site was measured.

### SOUND INSULATION INDEX

The partitions were intended to guarantee sound insulation with a minimum threshold of R'<sub>w</sub> 40 dB.

Measurements of the apparent sound reduction index have been taken, according to procedure UNI EN ISO 140-4. The sound pressure level was measured (dB) for each partition evaluated.

### CONCLUSIONS

R'<sub>w</sub> insulated wall = 41 dB

The 40 dB required by the customer was exceeded, and following our advice, all mobile office walls will be treated with K-FONIK products.

COMPLETE  
CASE STUDY





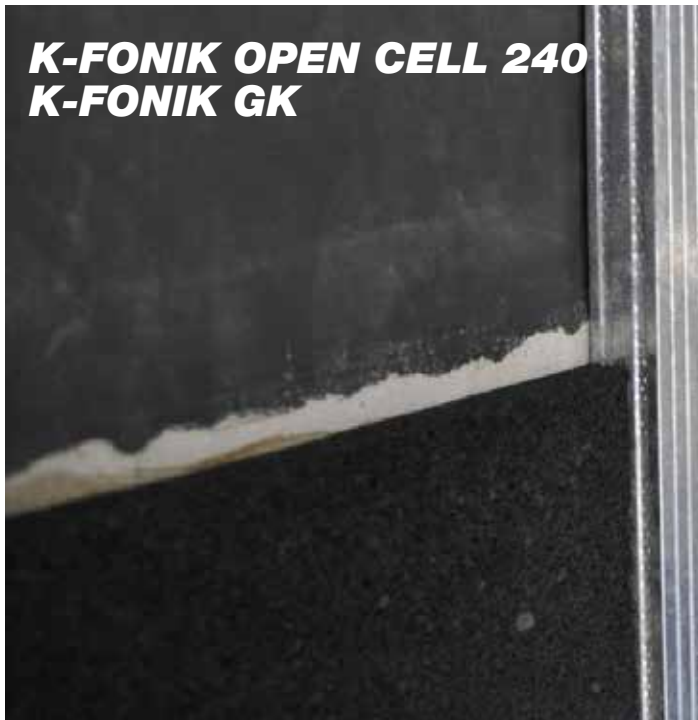
# Projects







Our Technical Department is made up of qualified acoustic technicians who specialise in carrying out preliminary analyses to establish the feasibility of specific soundproofing projects. We are able to simulate the final results of a detailed acoustic project as part of an architectural design project.









# K-FLEX

## Worldwide Leader in the production of **Elastomeric Insulation** for **Energy Saving**

### DOCUMENTATION ► PDF



**Brochure  
PDF format**



**Acoustic  
Website**

**TECHNICAL DPT** e-mail [kflex-technical@isolante.com](mailto:kflex-technical@isolante.com)



**K-FLEX**

# Acoustic Insulation



SOUND ABSORPTION

SOUND INSULATION

DAMPING