



SoundScoop[®]

Patented cross-talk attenuator for cross-flow ventilation

passivent

passivent

Create better buildings and healthy spaces with Passivent's SoundScoop®.

Passivent SoundScoop is known as a cross-talk attenuator or an acoustic air transfer unit. It combines exceptional acoustic attenuation with very low airflow resistance.

It has been designed in association with Arup in a collaborative approach to acoustic design, natural ventilation performance and product development. This combined performance is superior to any existing comparable unit on the market.

Manufactured in the UK at its Nottinghamshire facility, Passivent can support specifiers and contractors with a whole range of natural ventilation products including SoundScoop.

Further details about our 'Design and technical support service' can be found on the back page.

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Designed
in association
with Arup

Features and benefits

- Optimised acoustic design for the internal transfer of air between noisy and noise-sensitive spaces.
- Extremely low airflow resistance due to an entirely unimpeded acoustic path (coefficient of discharge Cd value of typically 1.04).
- Provides up to a 90% increase in open area compared to previous market leading product.
- Compatible with fire and smoke dampers.
- The configurations have been independently tested for acoustic performance (see page 5).
- SoundScoop can be demonstrated to meet the requirements of Building Bulletin 93 - Acoustic design of schools: performance standards.
- Cost competitive solution.
- Available in a range of sizes to suit the application.
- Lightweight design for transportation and ease of fitting with unit weights ranging from 3.0 to 18.3 kg.
- Manufactured in the UK and available ready assembled for installation on site.



SoundScoop

SoundScoop has been developed to attenuate the mid frequency band 500 - 2000 Hz as speech and circulation noise constitute the main source of disturbance in commercial and educational buildings.

Acoustic design

SoundScoop uses a highly innovative approach to acoustic design which allows a large unobstructed ventilation area. The open design is based on selective sound absorption at key frequencies and does not rely on baffles or diverters. SoundScoop has been designed in association with Arup in a collaborative approach to acoustic design, natural ventilation performance and product development.

The acoustic performance of the SoundScoop has been developed through an engineered approach where the exact nature of the source noise and receiver sensitivity has been considered. As such, each unit is targeted in terms of the sound it attenuates. This means it outperforms any other equivalent product on the market in terms of attenuation of speech and footfall.

Acoustic performance

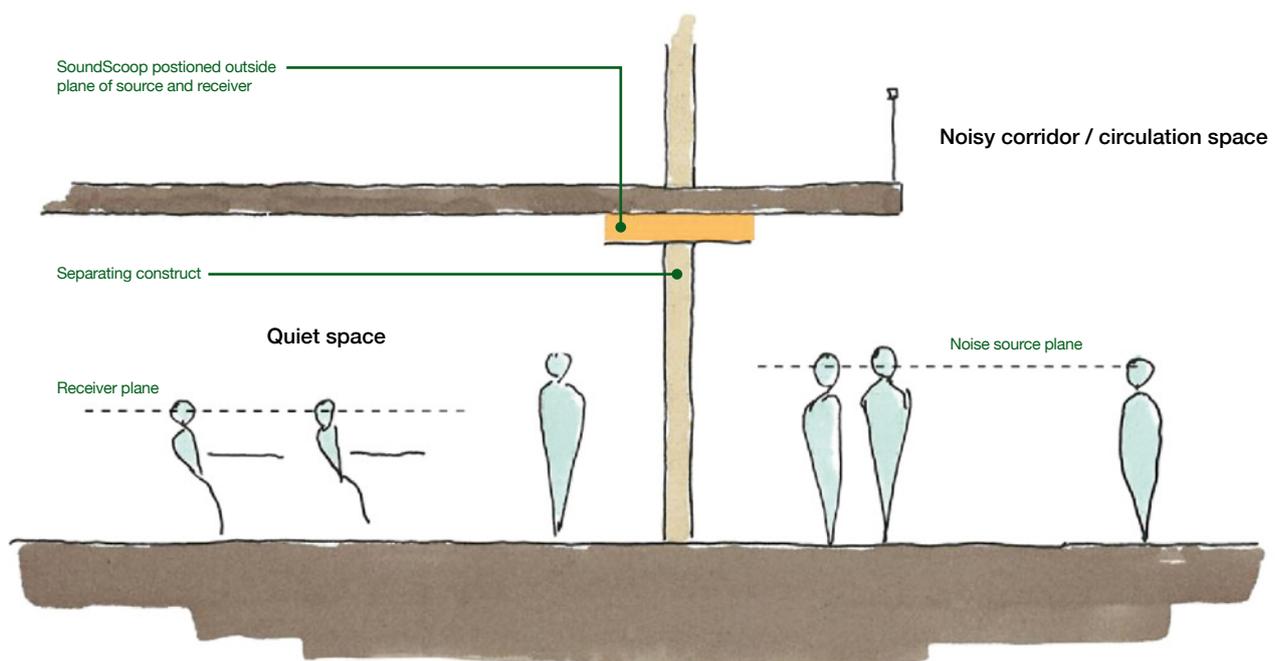
Independently tested to BS EN 20140-10:1992 and ISO 140-10:1991 and can be shown to comply with Building Bulletin 93 - Acoustic design of schools: performance standards and the Priority Schools Output Specification for Acoustic Design. [See further information on pages 4 and 5.](#)

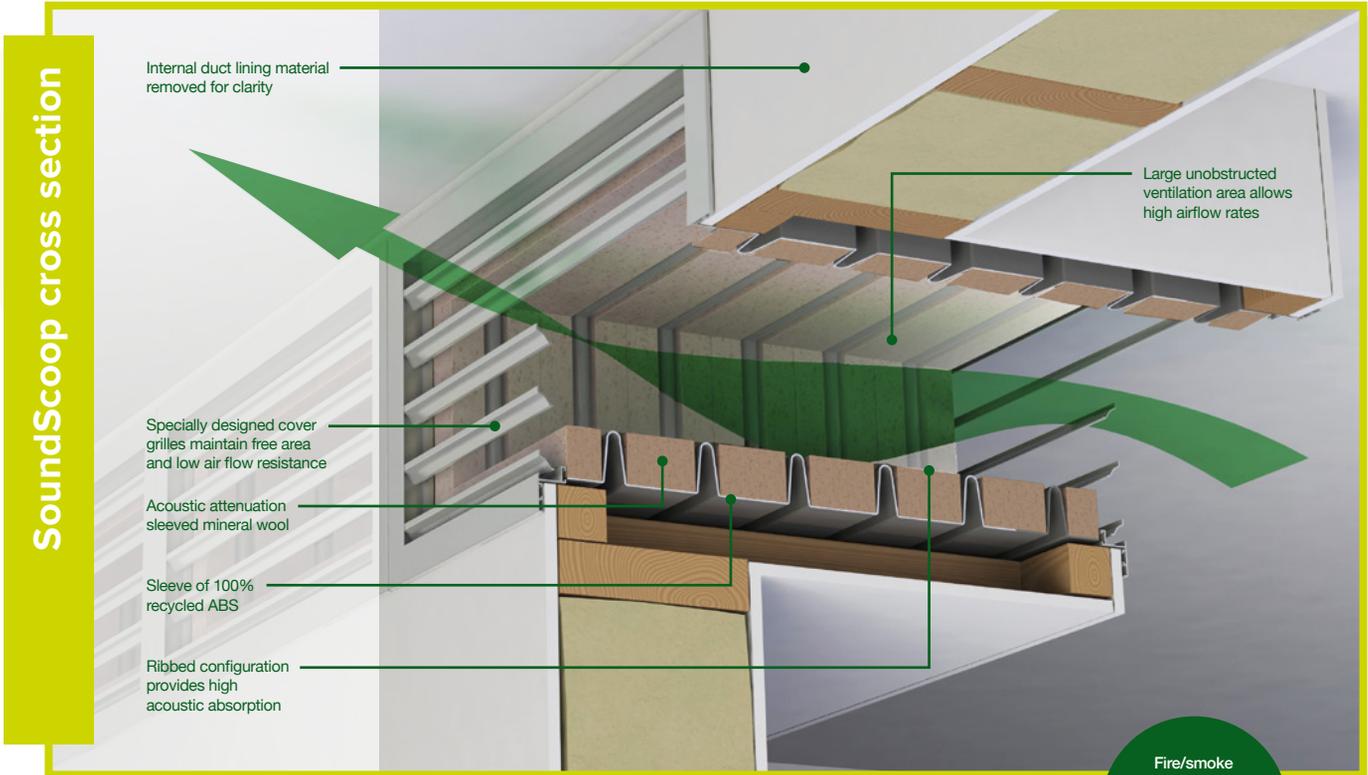
Natural ventilation

Natural ventilation is a key strategy in providing a healthy environment in buildings whilst avoiding excessive energy use. Cross-ventilation or free air transfer between internal spaces are important aspects of ventilating the whole building. At the same time most buildings require acoustic separation between noisy areas and noise-sensitive areas.

SoundScoop has been specifically designed to meet these conflicting requirements with a large free ventilation area, low airflow resistance and high levels of noise reduction.

Typical application
SoundScoop used as a cross-ventilation path between two spaces





Applications

SoundScoop provides:

- Air transfer (crossflow ventilation) between internal spaces of buildings as part of a natural ventilation system.
- Sound reduction between noisy areas and quiet areas, for example between circulation spaces and working, meeting or teaching spaces.
- Speech privacy, allowing normal undisturbed speech in adjacent areas.

Meets the acoustic and ventilation requirements of:

- Building Regulations Part F Means of Ventilation, Part L Conservation of fuel and power, and Part E Resistance to the passage of sound.
- Building Bulletin 93 - Acoustic design of schools: performance standards
- BS8233: 1999 Sound insulation and noise reduction for buildings - code of practice.
- Priority Schools Output Specification for Acoustic Design.



Examples of use

- **Offices:** between open plan offices and meeting rooms, or between two meeting rooms.
- **Education buildings:** between circulation spaces and classrooms.
- **Hotels:** between bedrooms and corridors.
- **Health buildings:** between patient areas and circulation areas.

Example applications	Noisy space	Noise-sensitive space	SoundScoop type	Effect
	Open plan office	Meeting room	300 mm long version with 320 mm (W) x 320 mm (H) body	Vent attenuation provides adequate privacy to the open plan space and appropriate control of noise ingress to the meeting room
	Atrium / primary	Classroom	600 mm long version of 620 mm (W) x 320 mm (H) body	Vent attenuation provides adequate control of noise circulation ingress to the classroom
	Meeting room	Meeting room	900 mm or 1200 mm long version with 620 mm (W) x 320 mm (H) body	Vent attenuation provides good standards of privacy so that even raised voices are not intelligible

Performance

The performance of the SoundScoop has been achieved through consideration of three design features, each of which are necessary for it to work most effectively.

1. Positioning

By positioning the unit out of the plane of source and receiver, sound is forced to take an oblique path through the vent thereby removing the need for bends or splitters. See 'Typical application' diagram on page 3.

2. Cross-sectional dimensions

Optimised cross-sectional dimensions are used to target attenuation over the desired range of frequencies. The SoundScoop is sized so that the 'cut-on' frequencies, end reflection and amount of attenuation is optimised for the target 500 - 2000Hz speech range.

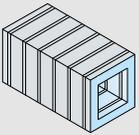
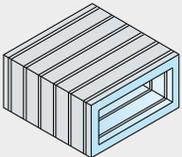
3. Patented internal lining

The patented internal lining which features ribs at regular centres has been shown to provide more than 10 dB of sound attenuation in a given octave band. This is achieved by:

- The resistive interference where sound is reflected and partly absorbed at frequencies of which the wavelengths relate to the period of the ribs.
- The discontinuities result in non-plane wave motion below the cut-on frequency. In other words, low frequency sound that would travel unhindered in a uniformly lined duct is disturbed by the ribs and more readily attenuated.
- The ribs and strips of sound absorbing material prevent wave motion along the length of the unit, forcing local reaction between the sound and foam lining. This is known to maximise the attenuation in lined ducts.

Acoustic performance and weight

Below are the eight SoundScoop combinations of two cross-sections and four lengths that are available. These units have been acoustically tested with detailed results for frequency bands available on request.

Unit dimensions W x H (mm)	L (mm)	Average mid-frequency Dn,e (dB) 500 - 2000 Hz	Acoustic performance Dn,e,w (dB)	Unit weight (kg)
320 x 320 	300	34	32	3.0
	600	45	39	5.9
	900	52	41	8.8
	1200	56	44	11.7
620 x 320 	300	30	29	4.6
	600	39	36	9.2
	900	46	40	13.8
	1200	52	42	18.3

Flow performance

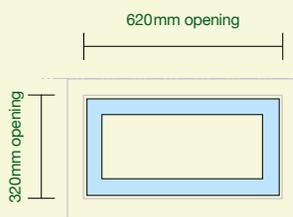
Figures shown for 900 mm long unit

Unit dimensions W x H (mm)	Free area (m ²)		Coefficient of discharge, Cd	
	SoundScoop	Cover grilles	SoundScoop	Cover grilles
320 x 320	0.04	0.05	1.04	0.75
620 x 320	0.10	0.10	1.04	0.75

Typical sections
620mm (W) x 320mm (H) unit

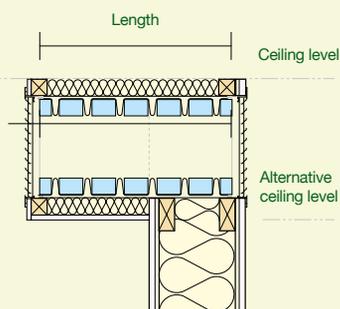
Front view

Cover grille removed for clarity



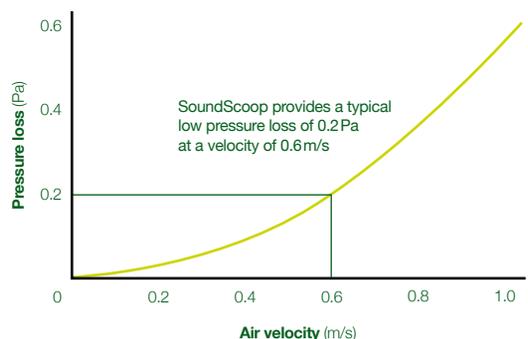
Section

600mm length shown



SoundScoop pressure loss (excluding cover grilles)

Based upon 900 mm (L), 620 mm (W) x 320 mm (H) unit



About us

Passivent's range of natural and hybrid ventilation products provide sustainable and energy-efficient solutions for improved air quality, natural daylight and the removal of moisture. They also help provide healthier, more comfortable environments for a buildings' occupants.

Our solutions have been tried, trusted and tested in many sectors including education, commercial, residential, leisure, care, health and many others. A pioneer in our field with over 40 years' experience Passivent products are designed and developed under ISO 9001 quality standards in our UK manufacturing facility in Nottinghamshire.

Our dedicated sales, technical and commissioning teams provide valuable support throughout the lifecycle of a project and are on hand to work with you every step of the way.

Design and technical support

We offer a comprehensive design and technical support service tailored to your specific project. At the early concept and design stage the Passivent Sales team will discuss the scope and requirements of the project with the customer and ascertain the core ventilation strategy to be achieved. There are many factors that will influence this strategy, some of which are shown below:

- Building design
- Building orientation
- Building location
- Proximity of building to other buildings
- Building fabric
- Building use
- Dimensions of rooms
- Aesthetic requirements
- Heating system specified

The above information, in addition to drawings provided by the customer, will form a comprehensive brief for the Passivent Technical team who will then be able to provide bulk airflow calculations where required and a detailed quotation. Sometimes more detailed thermal modelling may also be required.

Other products

Passivent sells a range of other ventilation products for commercial, educational and residential buildings.

Aircool®

Ventilators for windows, curtain walling and walls, including standard, thermal, acoustic and hybrid versions.

iMEV

intelligent Mechanical Extract Ventilation.

Roof ventilation terminals

A range of natural and hybrid roof terminals including the Airstract® range and Aircscoop® terminal.

Litevent

Rooflight/ventilator combining natural daylighting and natural ventilation.



Ventilation
& Air Quality



Natural
Daylight



Moisture
Removal

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