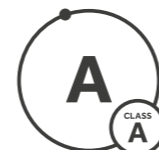# Expert Advice

*Icon guide and information*

In the 'What the experts say…' section of each page acousticians and ergonomists have offered their thoughts and advice on each product. To help you easily identify the acoustic properties of a product, an acoustician has provided clear descriptive icons.
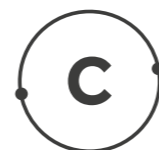
A CLASS A

ICON A – Absorb

This product is acoustically absorbent and reduces the reflection of sound off hard surfaces.

B UP TO 12 dB
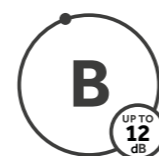
ICON B – Block

This product is suitably dense to reduce the transmission of speech sounds from one area to another. Creating barriers to sound disrupts the sound path which means that sound travels less efficiently across the space.

C

ICON C – Cover

This product creates a pleasant, easily ignored sound that can be used to elevate background noise levels to reduce distraction and improve privacy.

D

ICON D – Divide

Individuals performing different tasks have different requirements, making it important to design effective working zones. It is critical to place areas of quiet contemplation away from noisy and disruptive zones. Visual and acoustic separation can be used to signal the function and behaviour appropriate to each space.

ICON Reverberation Control

Rooms with too much reverberation (echo) can be uncomfortable and normal conversation may be difficult. Additional absorption is required to reduce reverberation by preventing reflection off hard surfaces. Use this product, along with others, for the control of reverberation at speech frequencies.

ICON Speech Privacy

Distraction distance is perhaps the most important measure in open plan office acoustic assessments. When someone speaks, a certain number of people around them will be able to hear them clearly and will most likely be distracted by them. Use this product in conjunction with others to reduce distraction distance and improve speech privacy.

ICON Visual Privacy

Visual distraction can be detrimental to our focus and concentration. In addition, our abilities to read visual cues help us to understand speech better and so increase the potential for distraction. Use this product to reduce visual distraction or improve visual privacy.

ACOUSTIC PANELS & SOUND MASKING

An introduction

Our understanding of how people function in the open plan office has evolved over the last 20 years. In particular, much research has been conducted regarding the effect of the acoustics in the workplace and how this influences productivity and wellbeing. In fact, the majority of office workers identify noise as a major concern. Studies have shown measured physical symptoms of stress and quantifiable loss of productivity when people are exposed to an uncomfortable acoustic environment. In addition, employees' own perceptions of satisfaction and wellbeing have been shown to be negatively affected. Previously when it came to solving acoustic problems

and improving the environment, the focus was on lowering noise levels however, it was soon discovered that this alone was ineffective and in many cases made the situation worse. In recent years, it has become apparent that acoustic comfort in work environments is not only to do with noise levels but is also dependent on the degree to which we can clearly understand speech. The clearer or more intelligible speech is, the greater its potential to cause distraction. Conversely, the more muffled or less intelligible speech is, the less likely it is to be distracting to listeners and the more acoustic privacy is afforded to the speakers.

ACOUSTIC PANELS & SOUND MASKING

Solving acoustic problems

In spaces where we wish to communicate with each other and be heard clearly, such as a meeting room or brainstorming area, the degree of speech intelligibility should be high between conversational partners. In these areas, sound should travel efficiently between the speaker and the listener. However, in zones where focus is required, without interruption from others, clearly understood speech arising from nearby areas is distracting. In these zones, it is therefore desirable to have a lower level of speech intelligibility. In confidential meeting spaces, it is important to achieve the best of both worlds – an area in which conversational partners can be understood by each other, but not by passers-by.

In these areas, it is essential to understand that speech privacy is not the same as inaudibility, but rather that the intelligibility of speech is reduced to a level at which it can no longer be understood.

The different working styles of individuals must also be taken into account, as well as the tasks they are carrying out. Repetitive tasks such as stapling and filing may be best performed in a livelier area of the office, whereas tasks requiring complex calculation and memory would typically best be performed in a space with fewer distractions, both visual and auditory. It would seem, therefore, that good acoustic design for workspaces is not a case of 'one size fits all', nor is it as simple as 'caves-and-commons' but rather the inclusion of a range of areas with appropriate acoustics to their function, that is, varying levels of background noise and speech intelligibility.

Products

Our range of products has been selected with this in mind. It includes solutions for the control of reverberation, reduction of speech level, and even systems which introduce 'good' sound into a space to reduce distractions. Used in various combinations, these products will improve the quality of the acoustic environment, allowing staff to be more productive and increasing worker satisfaction and wellbeing.

Advice and assessments

Choosing the correct acoustic solution requires expertise; it is important to consider the complete environment. Our independent acousticians are available to offer advice or conduct on-site acoustic assessments.

Snowsound® Technology

Acoustic panels

Ocee Design is proud to be working with Italian acoustic product specialists Caimi Brevetti. Caimi Brevetti's tradition of experimenting with new materials and technologies, whilst concentrating on environmental issues, has resulted in the award winning Snowsound® collection. Snowsound's extensive range offers acoustic solutions for any size of project.

Research and patents

Snowsound® technologies and products are covered by a variety of patents, the result of intense research and development that is still in progress.

Design and designers

Like Ocee Design, Caimi Brevetti invest in leading designers to create beautiful products. Many shapes and colours are designed to be either a visible and distinctive part of the project or to discreetly integrate into the spaces.

International awards

The technological innovations of Snowsound® and the design of products realised with these special technologies have achieved world-wide recognition.
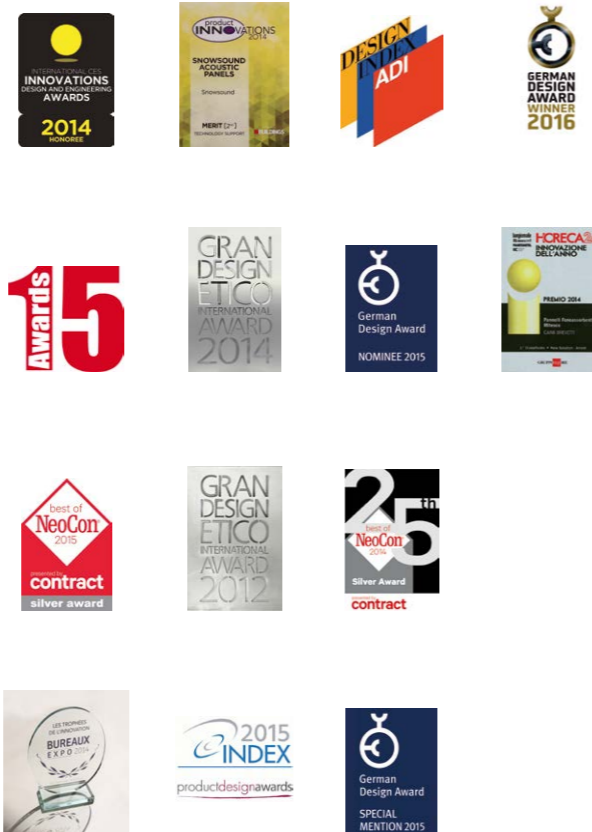
Sound quality and acoustic comfort

Sound is formed by waves that are reflected from solid surfaces with limited absorption capacity such as concrete, marble or glass. In rooms made with these types of materials, a high degree of reverberation (echo) often results, making it difficult to listen and converse in comfort. Increased reverberant noise may also cause people to raise their voices thereby increasing the problem. Sound absorbing materials improve acoustics in these environments.

As well as reducing reverberation, Snowsound® panels play an integral role in the improvement of acoustics in open plan areas. The correct placement of these panels can help to control reflection and disrupt sound paths, thus helping to reduce distraction distances.
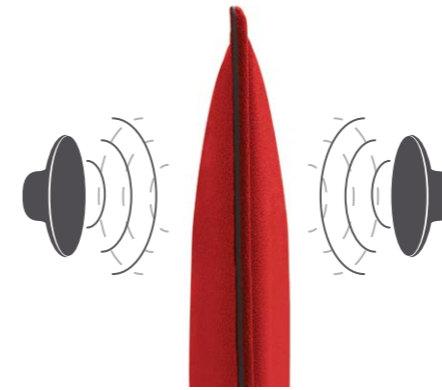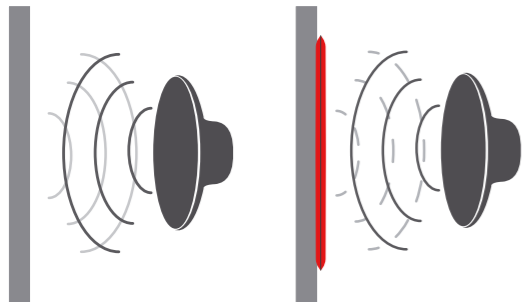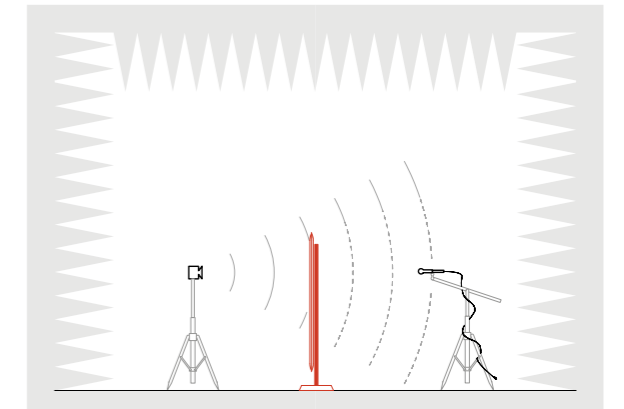
Absorption performance

Our products have been tested to both UNI EN ISO 10534-2 (equivalent to BS EN ISO 10534-2) for absorption in an impedance tube as well as UNI EN ISO 354 (equivalent to BS EN ISO 354) for absorption in a reverberation room. This provides us with a thorough understanding of the absorption characteristics of the materials which make up these products, as well as the performance of the products in their complete forms.

With good absorption performance across the speech frequency range, Snowsound® absorbers are perfect for environments where communication is important.
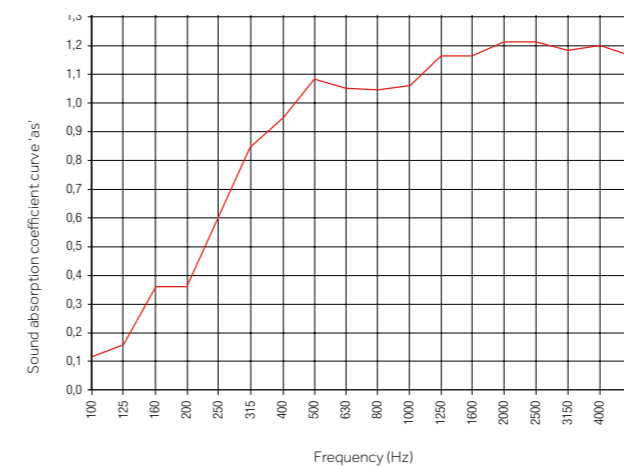
The frameless design as well as the lack of other potentially reflecting design features gives Snowsound® panels a completely sound absorbing surface. The panels have the same aesthetic, acoustic and functional characteristics on both sides.

'Class A' absorption performance

UNI EN ISO 354 measures sound-absorbing power in a reverberation room (Mitesco/Snowsound® panels installed side by side and with a 200mm rear air space)

Blocking performance

Snowsound® panels have been tested at the University of Ferrara to measure the sound attenuation of different configurations according to the ISO 10053 standard. The results demonstrate the blocking capacity of these panels which allows designers to predict their effect on the acoustic environment more accurately.

Snowsound® Technology

Features

CE

When hung from the ceiling, Snowsound® and Snowsound® Fiber panels all bear the CE mark in accordance with BS EN 13964 for use as a suspended ceiling. The technical data sheets and performance declaration provided with these types of products allow customers to assess and choose the best technical solution, depending on the installation needs.

Fire

Snowsound's external fabric and sound absorbing interior material has Euroclass B-s2, d0 classification for reaction to fire. The tests were completed on finished panels, composed of sound absorbing materials upholstered on both sides.

Eco-friendly

In the designing of the panel the objective was to obtain recyclability of the entire product at the end of its useful life, in a manner both simple and rapid. For this reason, the panels have been made entirely of polyester; therefore they are a single material and 100% recyclable without the need to separate the outer fabric from the sound absorbing inner material. All components are also made of single materials, plastic or metal, and can be easily disassembled, thus permitting 100% recycling.

The use of high quality materials and processing make it possible to obtain longer product life, resulting in reduced consumption of materials and energy.

The internal sound absorbing material is produced with up to 30% recycled material. The panels do not contain felt or other organic materials which are difficult to recycle.
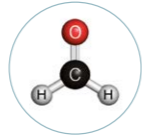
No formaldehyde

The panels have no detectable formaldehyde content, tested according to the UNI EN 717-2 (equivalent to BS EN ISO 12460-3).

GreenGuard Gold certification

Snowsound® and Snowsound® Fiber products have received Greenguard Gold certification, indicating that they are low emitting products and do contribute to the improvement of indoor air quality. Representative samples of products bearing the Greenguard certification mark have been independently tested and certified so that they meet UL's rigorous third-party Greenguard certification standards, which are among the most stringent in the world. To help reduce indoor air pollution specifiers should choose products which release the fewest possible pollutants (also known as low-emitting products).

This can be achieved by choosing products that are Greenguard certified, which means they have been screened for over 10,000 chemicals and do not emit high levels of chemical pollutants. Greenguard Gold certified products offer stricter certification criteria for sensitive individuals, such as children and the elderly, and are ideal for use in schools and healthcare facilities. Greenguard certified products contribute toward credits within the indoor environmental quality section of the leadership in energy and environmental design (LEED) building rating system.
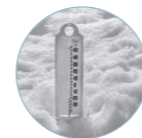
Warranty

Snowsound® Technology products have a 2 year warranty.

Hygiene and maintenance

The absence of an airspace or cavity between the fabric and the sound absorbing material significantly decreases the accumulation of dust, pollen or insect infestation. The seamless surface of the panel is easy to clean with the appropriate detergents.

Extreme conditions

To simulate the influence of the seasons on indoor environments, Snowsound® panels are subjected to a cycle of extreme weather conditions, according to ISO 9142 (equivalent to BS EN ISO 9142) standards, in a climate chamber at -20°C (-4°F) to +70°C (+158°F) and humidity up to 90%.

Strong, light and thin

Snowsound® Technology produces durable yet extremely thin, lightweight and easy to handle panels, averaging 3.4 kg per square metre. The variable density of Snowsound® not only optimises the acoustic performance of the panels, but also creates a superficial protective shell which makes the panel more robust and less subject to damage, scratching, tearing or other damage typical of porous or fibrous materials.
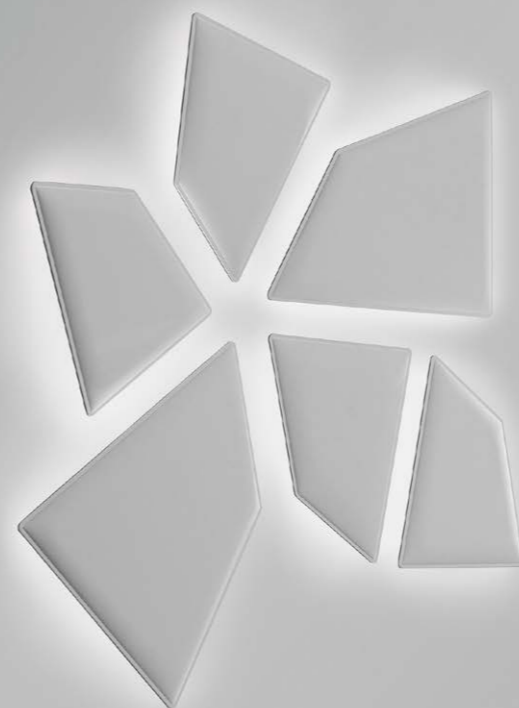
Flap

*Designed by Alberto & Francesco Meda*

Snowsound® Technology

'Flap is an acoustic panel that does not need to be hidden or disguised. Taking advantage of two-sided panels and Snowsound® technology, we instinctively thought of a variable and lightweight surface, made up of several modules, which can be located in the space according to the changing needs of our contemporary lifestyles. Not so much a partition wall, but an aerial wall-mounted or ceiling-mounted structure that affords the end user the utmost creative and expressive freedom.'

Alberto & Francesco Meda

Flap Lighting

The wall-mounted Flap sound absorbing panels can be decorated with a backlit LED light system. The suspended Flap ceiling frame can be fitted with 180° directional lighting to achieve the desired illumination.
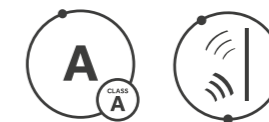
V Flap

V-Flap makes it possible to achieve sound absorbing solutions with enormous visual impact. The chromed steel frame and metal cables suspend the two sound absorbing panels to create two wings that appear to fly through space.
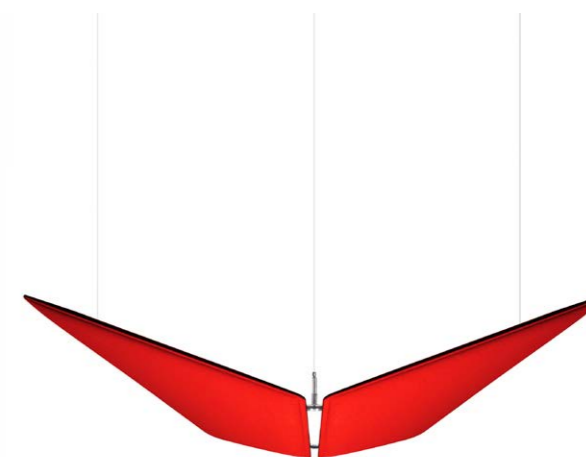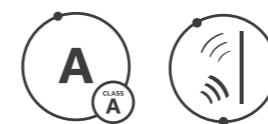
Flap Totem

Flap Totem is a chromed steel structure with six anchored adjustable Flap panels. The base is epoxy powder coated steel. Flap Totem is an elegant and flexible acoustic solution, which can be moved and repositioned as required.
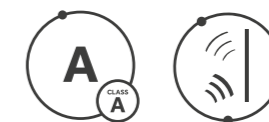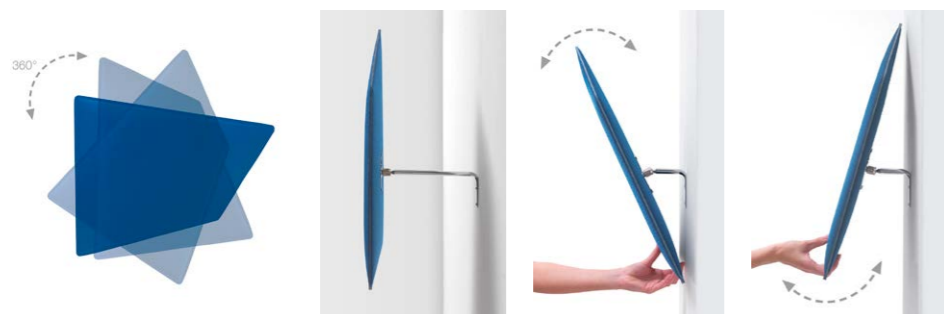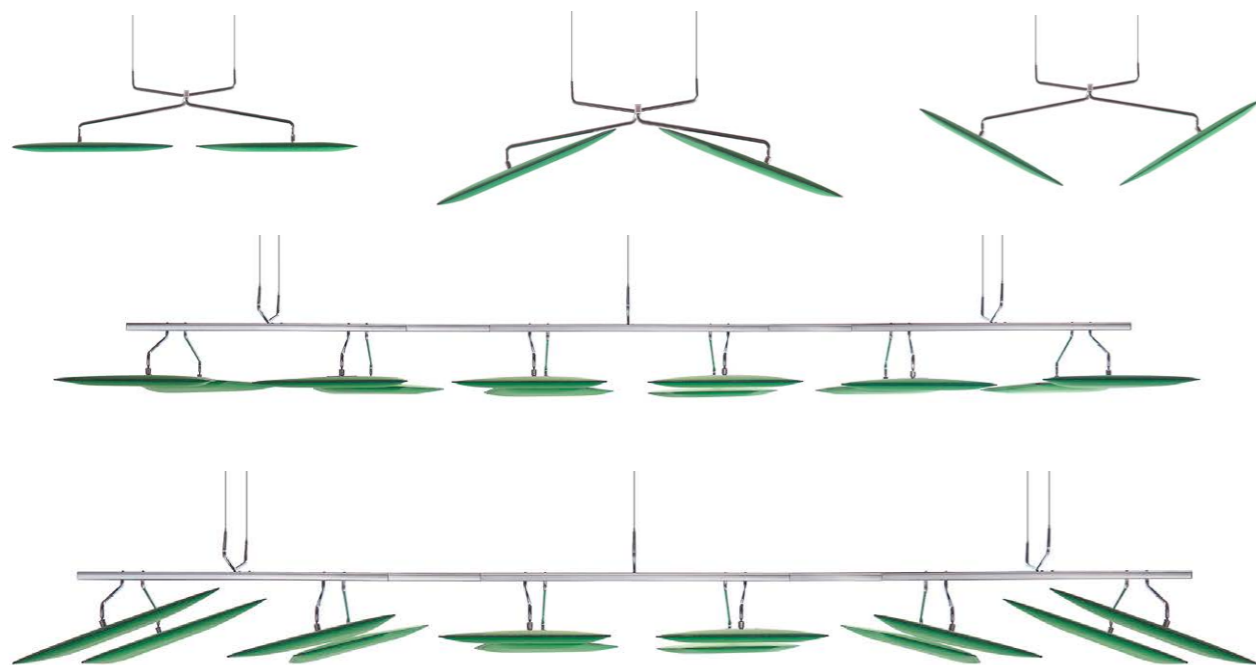
Flap

Fixings

Ceiling-mounted Flap

The ceiling-mounted frames are in chromed steel, fitted with mobile arms, to which Flap panels are anchored with articulated hinges. The frames are modular and can be connected together in a parallel line. The panels can be rotated and inclined to make planar, concave or convex configurations, depending on aesthetic and acoustic needs. The configurations can be easily adjusted at any time.

Wall-mounted Flap

Flap panels have a rear chromed steel plate connected by an articulated spherical hinge to a chromed steel arm, that can be mounted directly to the wall or to a ceiling. The hinges allow the panel to rotate 360° and incline in any direction, in order to personalise the aesthetic aspects and the acoustic performance of the product.
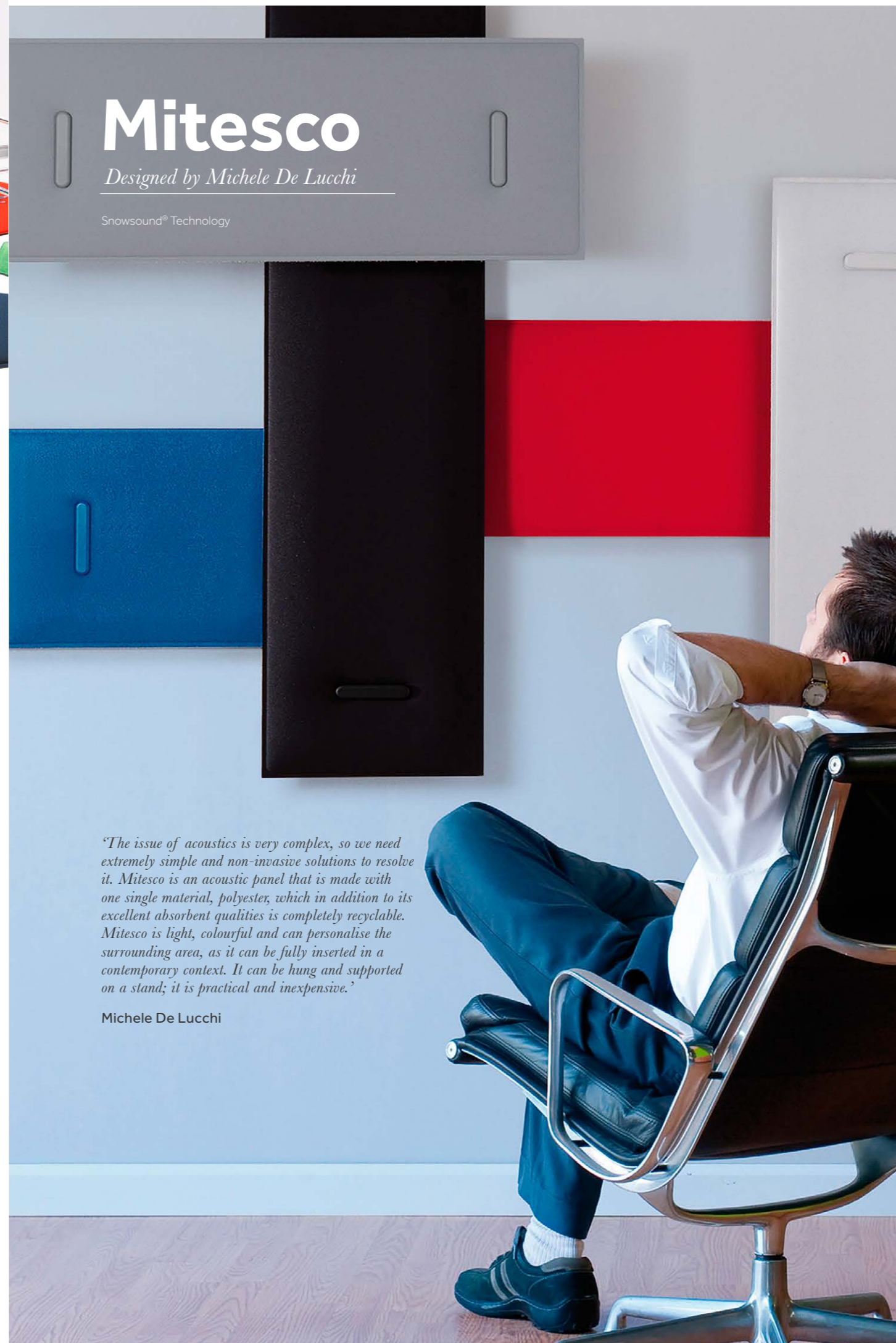
Mitesco

Designed by Michele De Lucchi

Snowsound® Technology

'The issue of acoustics is very complex, so we need extremely simple and non-invasive solutions to resolve it. Mitesco is an acoustic panel that is made with one single material, polyester, which in addition to its excellent absorbent qualities is completely recyclable. Mitesco is light, colourful and can personalise the surrounding area, as it can be fully inserted in a contemporary context. It can be hung and supported on a stand; it is practical and inexpensive.'

Michele De Lucchi

Mitesco
Fixings

Easy to fix - easy to remove

The Mitesco sound absorbing panel has two supports that allow it to be anchored to walls or to steel supports which keep the panel detached from the wall, so as to optimise the acoustic performance. Mitesco panel fixings can be held in place by nails or screws anchored to walls.

Panels can be quickly and simply moved to modify the acoustics of rooms, adapting them to the user's needs. This flexibility allows for varying uses for the same room (for example, to simply and quickly free the walls of a conference room to create an exhibition, by hanging pictures on the Mitesco fixings).

Magnetic fixing

The magnetic fittings, lightness of the panel and the absence of rigid or sharp-edged aluminium or PVC frames, (normally used in similar acoustic products), make it possible to easily apply or remove panels; this facilitates easy cleaning of both the panels and the underlying surfaces.

Ceiling fixings

Mitesco panels can be fixed to the ceiling with coated steel modular frames or with adjustable supports which make it possible to vary the inclination of the panels. This flexibility enables users to modify the acoustic qualities of a given space.

Mitesco Net

Mitesco Net is a modular ceiling-mounted installation of Mitesco panels, comprised of chromed steel tubes available in multiple lengths, joints, connections and ceiling anchors. The networks can anchor the panels on different levels. The system is extremely versatile and the modules can be connected together. Thanks to the hinged anchors, the panels can be easily adjusted to face any direction.
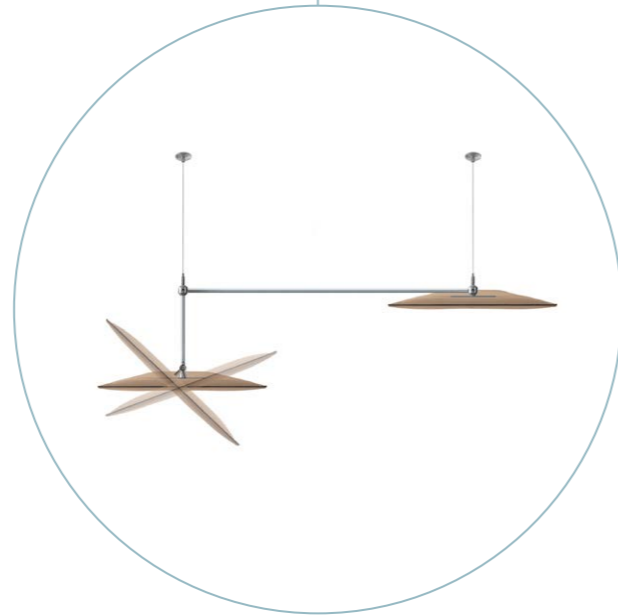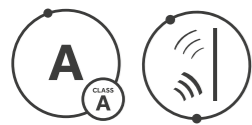
MitescoTotem

The freestanding Mitesco sound absorbing Totems can be positioned and repositioned wherever they are needed. The Totem can also incorporate a glossy aluminum hook accessory to create a discreet and elegant coat rack.
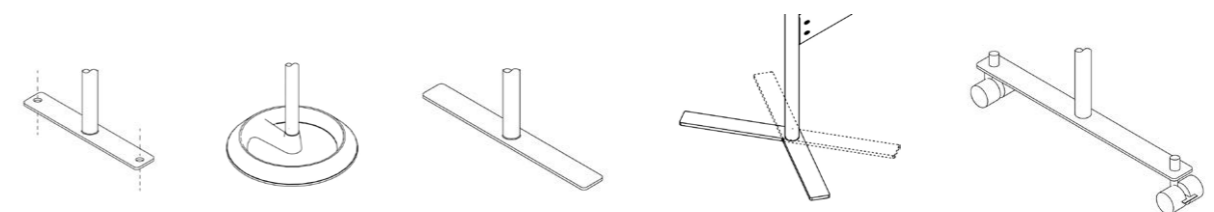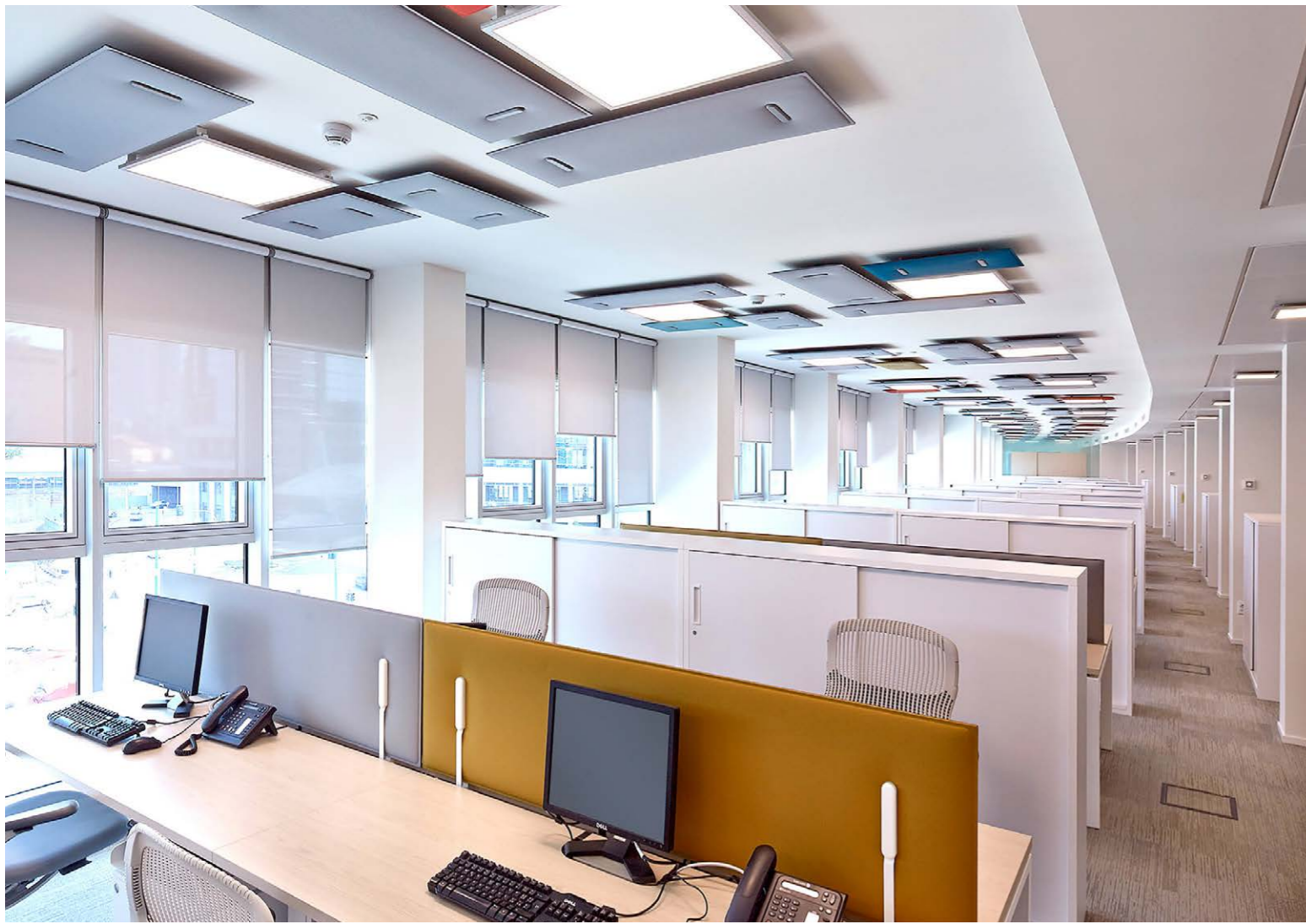

Mitesco Dividers

The Mitesco Dividers can have panels on one side only or on two opposing sides, thus obtaining sound absorbing solutions aesthetically identical on both sides. Choosing from a range of available colours, Mitesco panels can be freely combined to create stunning and customised colour mixes.

Mitesco base options

*Visual and acoustic privacy subject to placement and height.

Mitesco Worktop panel fixings

Mitesco panels can be attached to worktops with a variety of simple mechanisms.

Mitesco Worktop

Mitesco Worktop panels are an excellent solution for subdividing worktops into sections, creating a visual barrier and improving the acoustic comfort of the individual user.

Thanks to the special powder-coated steel brackets, Mitesco worktop panels can be simply positioned on the desk and the layout can be quickly changed if desired.

Management rail system

*Visual and acoustic privacy dependent on height of screen.

Tra

Designed by Marc Sadler

Snowsound® Technology

'The ability to freely locate the panels along the cables makes it possible to construct dramatic backdrops.'

Marc Sadler

Tra is a patented system consisting of Snowsound® panels suspended from a pair of stainless steel cables which are connected between two walls while maintaining a natural curve. The supporting cables can be positioned at a number of angles. Snowsound® panels can be hung by cables in multiple positions, thereby creating compositions that can be personalised for aesthetics.
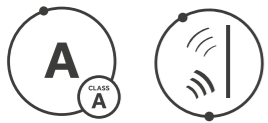
Baffle

Designed by Marc Sadler

Snowsound® Technology

'A name and a function: a cascade of ceiling panels suspended from fine cables, magically anchored to the tops of the panels. Baffle creates a powerful sound absorbing barrier in an outwardly random, delightful architecture. The design is reminiscent of the classic image of laundry hanging on lines between houses.'

Marc Sadler

Baffle is a patented system designed to hang Snowsound® sound absorbing panels from the ceiling, showcasing their lightness and elegance. The adjustable height of the cables and the array of panel sizes and colours available make it possible to achieve compositions that can be personalised for aesthetics and sound. The patented joining system of the panel to the cables is completely invisible; a small cylindrical joint hides the anchoring system inside. The Baffle anchors can be positioned along the upper edge of the panel, without particular limitations of space between the cables, in order to simplify ceiling installation.
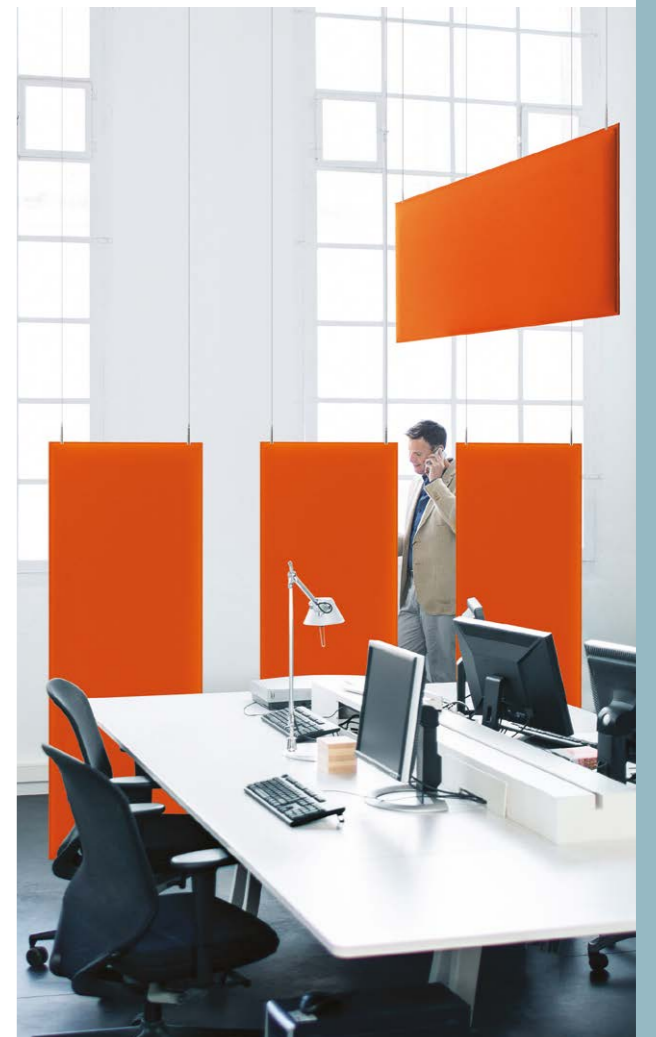
Pli

Designed by Marc Sadler

Snowsound® Technology

'Extremely versatile, Pli is designed with elastic straps to adjust at will, like a piece of clothing, while its vast selection of fabric colours make it a true decorating accessory.'

Marc Sadler

Available in three finishes, Pli is a sound absorbing screen made up of Snowsound® panels joined with elastic straps. The straps connect the panels via steel buttons and O-rings that create linear 'T', 'L' or 'X' configurations. The wide variety of panels and fabric colours offer multiple combinations. The Pli system can be furnished with a chromed steel supporting base.
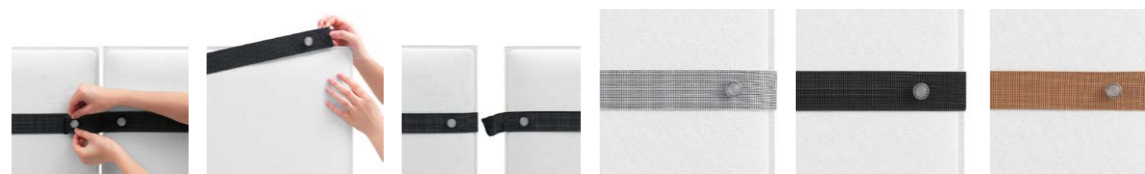
Pli Desk

Pli Desk provides sound absorbing panels for acoustic comfort and visual privacy. The elastic straps hold the panels together to create 'T', 'L', or 'X' formations.

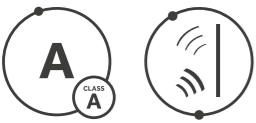*Visual and acoustic privacy dependent on height of screen.

Pli Oversize

Designed by Marc Sadler

Snowsound® Technology

Pli Oversize is a sound absorbing Snowsound® panel, held up by a steel frame which can be used as a screen to divide space. Several panels can be connected together by a strap, fitted with steel buttons and button holes, which wrap around the panel and create linear, 'T', 'L' or 'X' formations.

Oversize

Designed by Caimi Lab

Snowsound® Technology

The Oversize system is characterised by the large size of the sound absorbing Snowsound® technology panels that can be located on the wall, ceiling or on a desk. Most acoustic absorbers are limited in size due to the standard sizes of their component materials. The larger size means that you do not have to have small panels with unsightly seams.
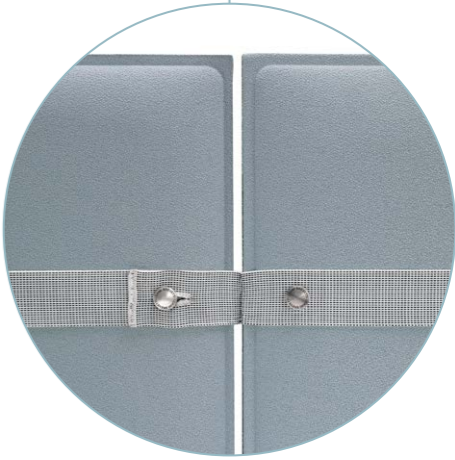
Wall mounted   Desk mounted

Corner

Designed by Marc Sadler

Snowsound® Technology

Corner uses Snowsound® technology panels to divide work surfaces by creating a visual barrier while also improving acoustic comfort. The mounting hardware is compact and robust making it easy to apply panels to the desk directly with screws, or via desk clamps.
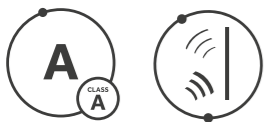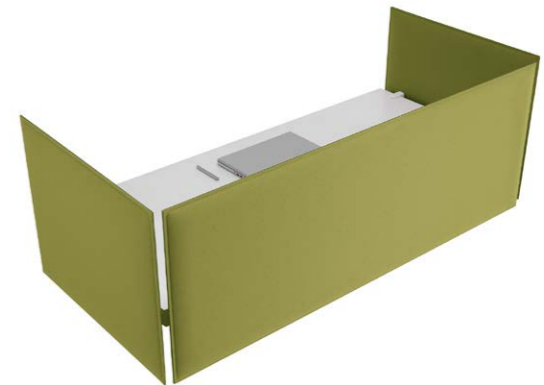
Blade

Designed by Lorenzo Damiani

Snowsound® Technology

'I wanted to create a continuously changing, dynamic modular system using metal shelves with slim proportions, to anchor the sound absorbing panels to the walls. In this way you can create an infinite number of compositions which frame the objects laid on the actual shelves. Blade is an independent component with a dual function because, it can be both a system for improving the acoustics of an environment, thanks to Snowsound® technology, and a handy shelving system.'

Lorenzo Damiani

Blade is a modular shelving system with a sound absorbing back panel made with Snowsound® technology. The slim shelves create a visually light and minimalist overall image.
The shelves are made of epoxy powder-coated steel, a wall mounted load-bearing core and a very thin external lining support surface.

Snowfront

Designed by Caimi Lab

Snowsound® Technology

The Snowfront panels divide up work surfaces by creating a visual barrier, while also optimising acoustic comfort. Snowfront allows the panels to be positioned at the desired height on the work surface using metal clamps.

*Visual and acoustic privacy dependent on height of screen.