

SOUNDWAVE®



OFFECCT





SOUNDWAVE® Swell, designed by Teppo Asikainen.

SOUNDWAVE® Mesh, designed by Teppo Asikainen.

Acoustic control

How we perceive sound depends on the physical nature of our surroundings, and yet acoustics are an aspect of interior design that is frequently overlooked. In public spaces, open plan interiors and many contemporary environments characterised by hard surfaces, acoustic control is an essential element in making spaces enjoyable to inhabit.

Functionality and aesthetic

The SOUNDWAVE® series of sculptural wall panels combines functionality and aesthetic and is specifically designed to enhance the acoustic properties of any interior used for human communication and social interaction, such as offices, restaurants, conference rooms, foyers etc. While most acoustic products are concealed in the fabric of the interior, soundwave resembles 3D wallpaper, making acoustic control a visible dimension of environmental design and easy to apply even in existing interiors.

SOUNDWAVE® has attracted a lot of attention since being launched in 1999 and is now a well-known registered trademark. The owner of the brand, development, production and distribution is the Swedish design company OFFECCT AB.



Original design by Teppo Asikainen

SOUNDWAVE®, by the Finnish designer Teppo Asikainen, is the original design from 1999. Teppo Asikainen is one of the partners of Valvomo, an architecture and design office based in Helsinki, Finland. The studio works on all areas of design, from architecture to objects.

Their designs are included in the permanent collections of several museums, including MoMA in New York. In addition to OFFECCT, the firm works for a number of Japanese and European design manufacturers.

OFFECCT head-office and and showroom, Tibro, Sweden.
SOUNDWAVE® Luna. Mono light chair, designed by Ola Rune.



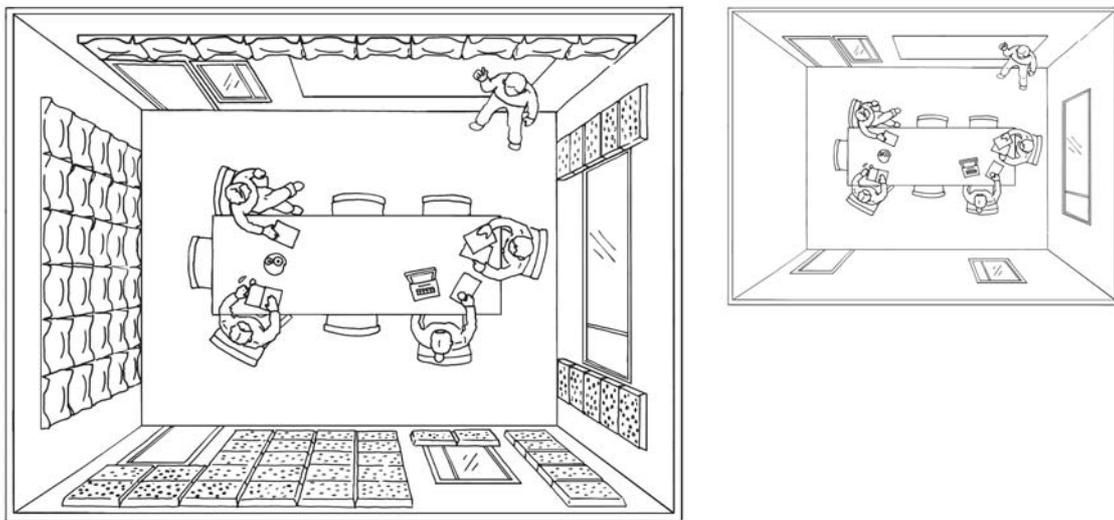
OFFECCT head-office and showroom, Tibro, Sweden.
SOUNDWAVE® Scrunch. Float sofa, designed by Eero Koivisto.



Acoustic demonstration

This case study was designed to demonstrate how SOUNDWAVE® can be used to improve the acoustics in a conference room. For the demonstration we used a fairly typical modern meeting room: approx 30 sq metres, the hard surfaces (floor, white board, conference table etc) and lack of soft furnishings contributed to the poor acoustics.

The room was tested in its original state and then retested with 41 Swell panels and 40 Luna panels grouped on the walls. The SOUNDWAVE® panels helped to considerably reduce the reverberation time, a major factor in eliminating fatigue related to high back- ground noises in meeting rooms and work- spaces.



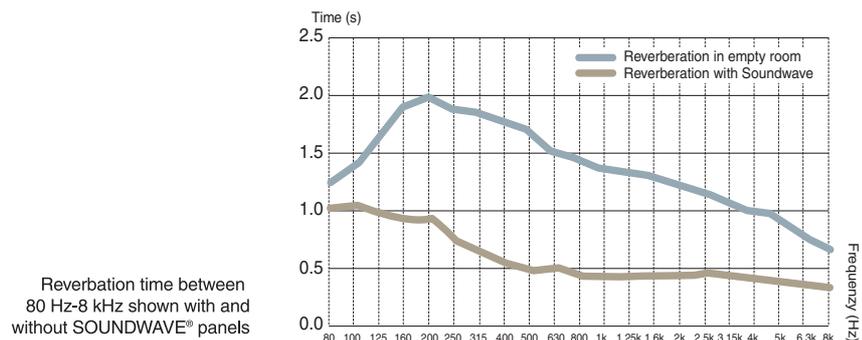
Reverberation time curve

The diagram below shows the reverberation time in the room with and without SOUNDWAVE® panels. The darker grey curve shows the room without panels, the lighter grey curve shows the room with all 81 panels in place.

The measurements were made according to ISO standards. This means that an omnidirectional sound source (a special speaker) was placed in the room and noise was played at a specified level. After sometime the sound was suddenly stopped. The break activates a measuring device which records the process of the sound "ringing out" in the room - the reverberation. The data for the RT (reverberation time) curves was extruded from this recording.

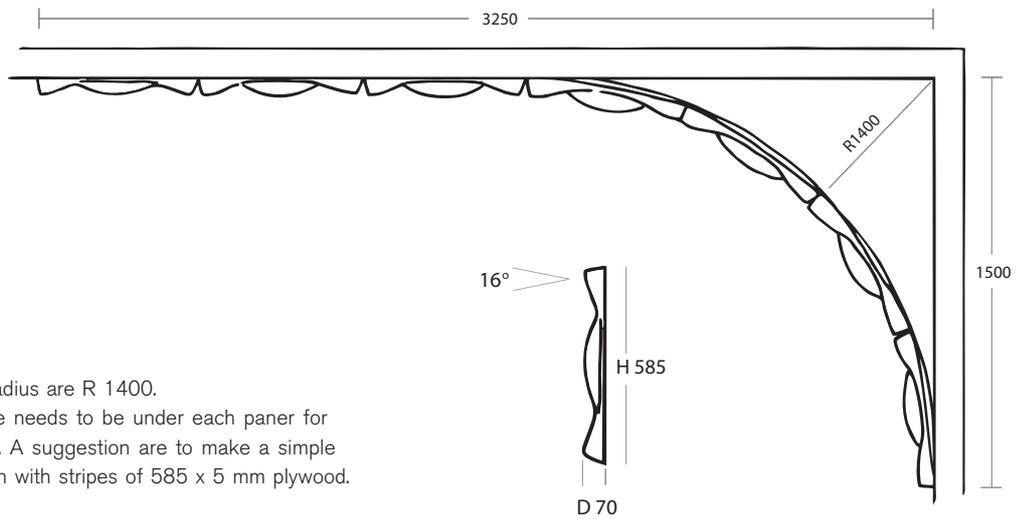
The horizontal axis represents the sound spectrum with low bass sounds on the left and high treble sounds on the right end.

The vertical axis represents the time needed for the reverberation tail of a sound to "fade out" to silence. A curve plotted at a high position on this axis means that the time needed for a sound to fade out was quite long, in other words the reverberation time was long.

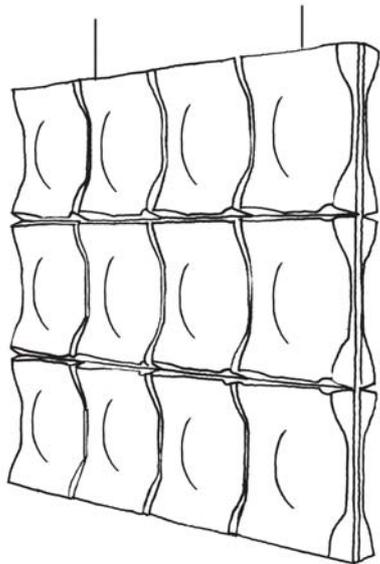


SOUNDWAVE® in different environments

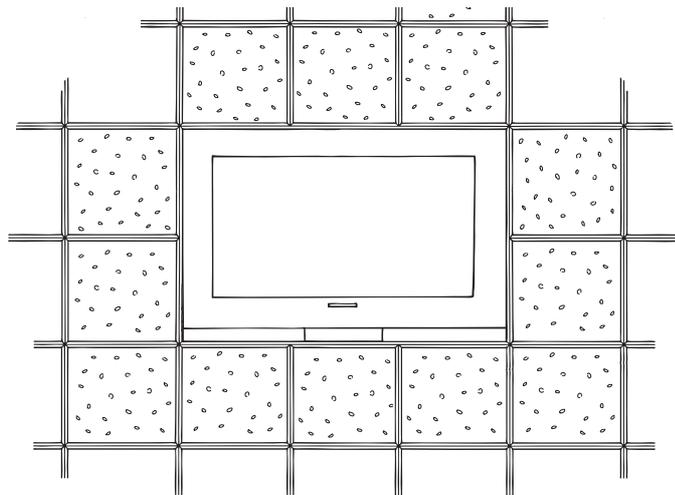
The versatile SOUNDWAVE® panels are designed to be used in many different ways and suit different environments. The panels are mounted using self-adhesive Velcro and can easily be applied to most wall surfaces or moved from one space to another.



Minimum radius are R 1400.
Flat surface needs to be under each paner for attachment. A suggestion are to make a simple konstruktion with stripes of 585 x 5 mm plywood.



Panels mounted on a suspended screen.



Panels used as a backdrop to a plasma screen.

OFFECCT head-office and and showroom, Tibro, Sweden.
SOUNDWAVE® Swell, green Europost.
Cornflake table and chair, designed by Claesson, Koivisto, Rune.



SOUNDWAVE® series

Each panel in the SOUNDWAVE® series is designed for a specific acoustic purpose. Successful acoustic design requires both a good understanding of the unique acoustic properties of each panel type, and a correct analysis of the specific acoustic needs of an interior. The wall panels can be combined in different ways to meet the needs of almost any room or environment.

All our panels are tested by SP Swedish National Testing and Research Institute Acoustics, report P102366.



Luna

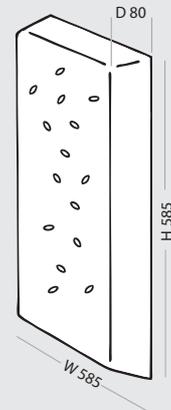
Luna

Luna is a heavyweight broadband absorber with extended efficiency in the low frequency range [150 Hz-500 Hz]. This panel is very efficient in reducing the reverberation time (sound "bouncing around") in a room. This means that disturbing background noise will be reduced and voice intelligibility will be greatly improved.

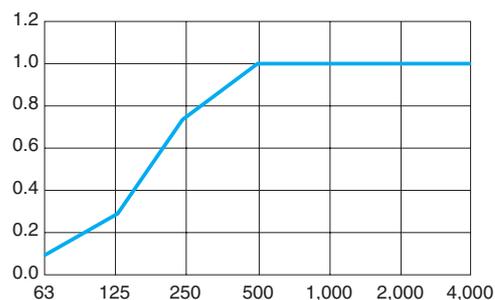
Material: Recyclable moulded polyester fibre. Colours: Grey

Measurement of sound absorption coefficient

Test	Measurement of sound absorption coefficient in a reverberation room according to SS-EN 20354 (ISO 354)
Client	OFFECCT AB
Object	SOUNDWAVE® Luna Panel size: 585 mm x 585 mm x 80 mm Material: Recyclable moulded polyester fibre
Date of test	March 28, 2001
Conditions	Surface area: 10,3 m ² Room volume: 200 m ³ Temperature at measurement on object/ in empty room: 21/20°C Relative humidity at measurement on Object/ in empty room: 82/81%
Result	Sound absorption class A according to EN ISO 11654. Weighted sound absorption coefficient $\hat{\alpha}_w = 1$ according to EN ISO 11654.



Practical sound absorption coefficient.



Frequency (Hz)	α_p
63	0.10
125	0.30
250	0.75
500	1.00
1,000	1.00
2,000	1.00
4,000	1.00

Swell and Scrunch

Swell and Scrunch are designed to be used as lightweight sound absorbers in the upper frequency range (500 Hz and above). These panels help reduce disturbing reflections of environmental sounds such as voices, telephones etc. Swell and Scrunch panels can also be used as screens to improve privacy in open plan interiors.

Material: Recyclable moulded polyester fibre

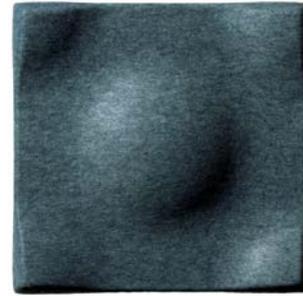
Colours: Off-white, Grey and Anthracite.



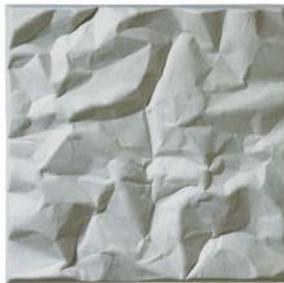
Swell Off-white



Swell Grey



Swell Anthracite



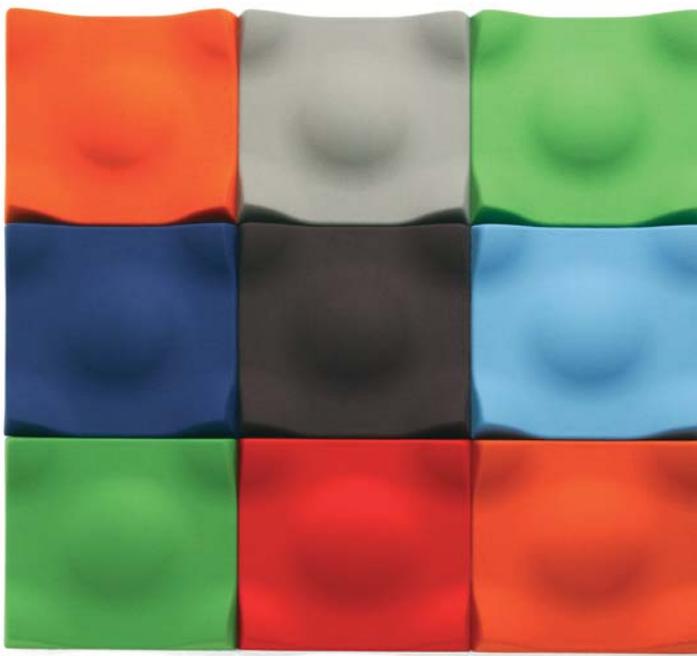
Scrunch Off-white



Scrunch Grey

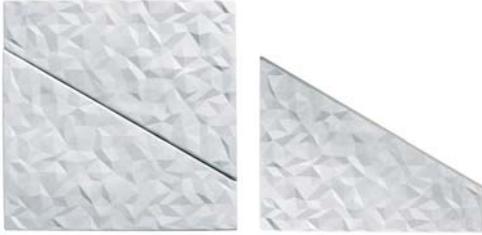


Scrunch Anthracite



Swell colour Europost

Swell can be delivered in various colours.
Material: Europost by Gabriel, 100 % wolle.
Order minimum 55 pieces/colour.



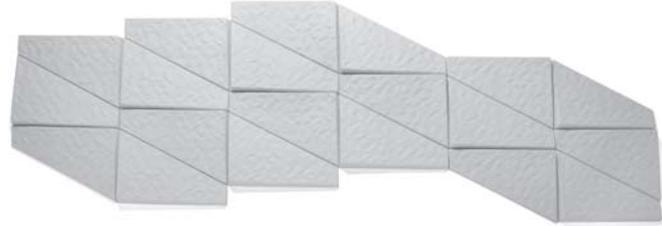
Mesh

Mesh

The Mesh panel is designed to absorb lighter sounds in the higher frequencies (500 Hz and above). It is ideal for elimination disturbing sound reflection from voices in office environments and restaurants.

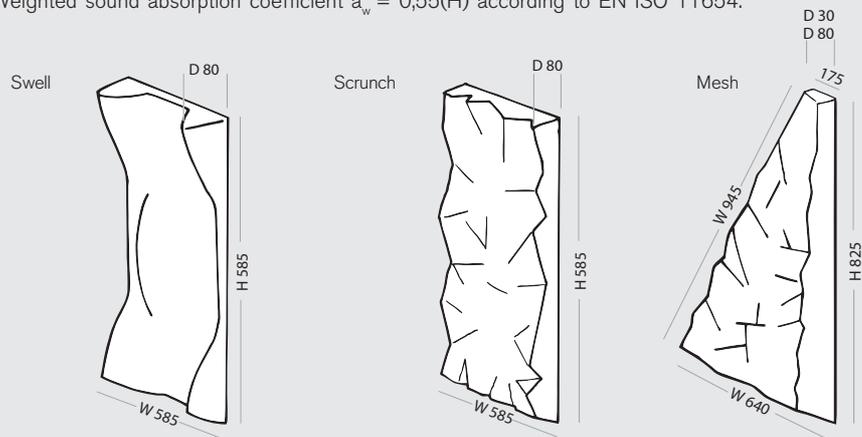
Material: Polyester fibre

Colours: Off-white

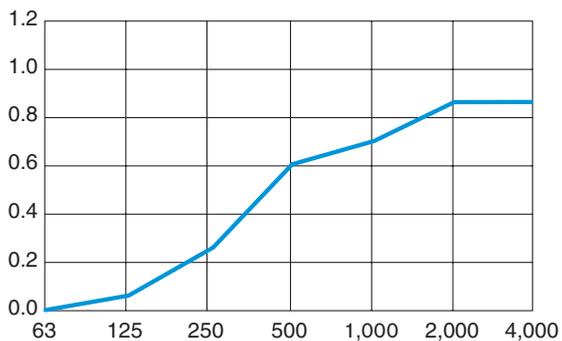


Measurement of sound absorption coefficient

- Test** Measurement of sound absorption coefficient in a reverberation room according to SS_EN 20354 (ISO 354)
- Client** OFFECCT AB
- Object** SOUNDWAVE® Swell / Scrunch Panel size: 585 mm x 585 mm x 80 mm
SOUNDWAVE® Mesh Panel size: 825 x 640 / 175 mm
- Date of test** March 28, 2001
- Conditions** Surface area: 10,3 m² Room volume: 200 m³
Temperature at measurement on object/ in empty room: 21/20°C
Relative humidity at measurement on Object/ in empty room: 82/81%
- Result** Sound absorption class D according to EN ISO 11654.
Weighted sound absorption coefficient $\alpha_w = 0,55(H)$ according to EN ISO 11654.



Practical sound absorption coefficient.



Frequency (Hz)	α_p
63	0.0
125	0.05
250	0.25
500	0.60
1,000	0.70
2,000	0.85
4,000	0.85



Swell diffuser

Swell diffuser

The Swell diffuser panel provides sound diffusion rather than absorption. This is an important aspect of acoustic design that is often overlooked. If all sound reflections in a room were eliminated we would probably find ourselves screaming to each other in order to be heard as we would get no "acoustic support" from the surroundings.

Correctly positioned, the diffuser panels will improve speech intelligibility and even improve privacy in open spaces as the speaker does not need to talk loudly in order to be heard.

Material: 100% PET

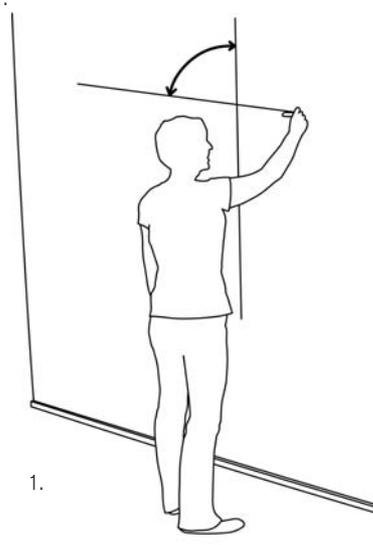
Colours: Semi-transparent white

Soundwave – easy to assemble

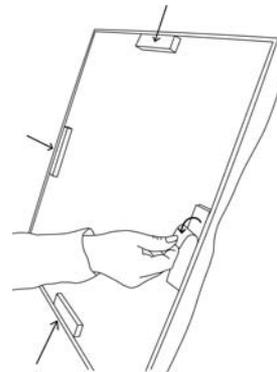
1. Start to make a horizontal line in the proper level to the floor on the center position of the wall. If the wall is white and you shall use a different colour on the panels, the area under the panels could be painted in a similar colour to make the gaps between the panels disappear.

2. All panels have Velcro stickers for attachments so you do not need any tools. Remove the protecting tape of the Velcro sticker and place the first panel in the center of your wall, and make the first horizontal row.

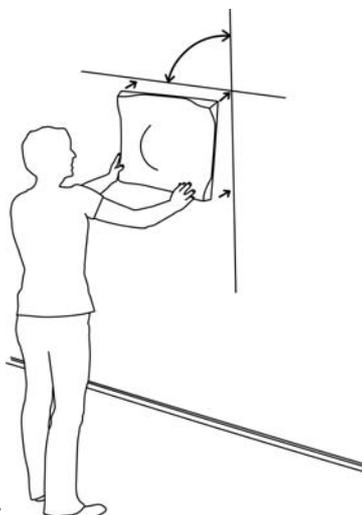
3. Place the panels under and over your first row until the wall is complete.



1.



2.



3.

OFFECCT has been furnishing offices, conference spaces, leisure environments and homes for more than a decade. In close collaboration with renowned designers from all over the world, and working together with our skilled Swedish craftsmen, we ensure superior quality throughout the entire development and production process, all the way to the finished product.

OFFECCT