Ecophon Wall Panel™

Expressive art or discreet setting

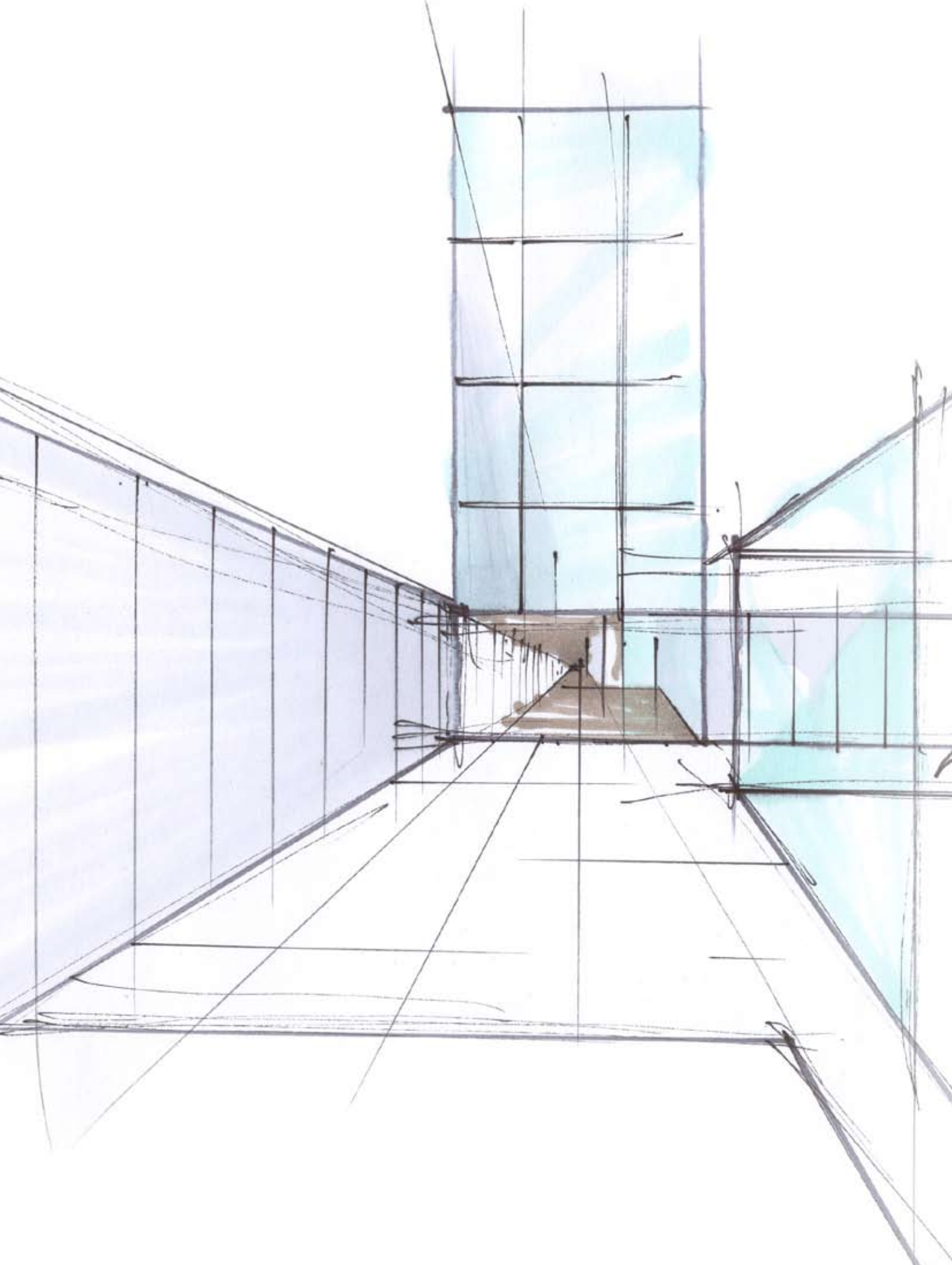
Ecophon®

A SOUND EFFECT ON PEOPLE

Colour, design and structure – for the eye and ear.
Create a bold feature in a room, or go for a harmonious set of colours. Horizontal, vertical or diagonal, one colour or many?Your only limit is your imagination. The Wall Panel system allows you to create superior acoustic comfort according to your own choices and needs. Let's find some inspiration!

ECOPHON WALL PANEL™


STEINWAY & SONS



ECOPHON WALL PANEL™

Vertical acoustics as an alternative or compliment to an acoustic ceiling

The traditional way to add sound absorption into a room is to install a suspended acoustic ceiling. However there are many situations where a traditional suspended ceiling can't be used, or where only parts of the ceiling area can be treated with sound absorbing material. This might be due to different reasons. Buildings might have nice details in the ceiling, like plaster figures, which you don't want to hide or which even may be protected by law. In other cases the designer wants to expose all the installations or the structure of the roof, or the concrete deck is designed to be exposed to be a part of the thermal regulation of the room. In such rooms vertical absorbers can be an alternative, to provide enough sound absorbing material.

Extensive design possibilities

Wall absorbers in different colours together with a surrounding profile system and corner details in matching or different colours, offer a vast amount of possibilities for the interior design of the room. If wall absorbers are used when renovating a room, the preparatory work with the walls is minimized.

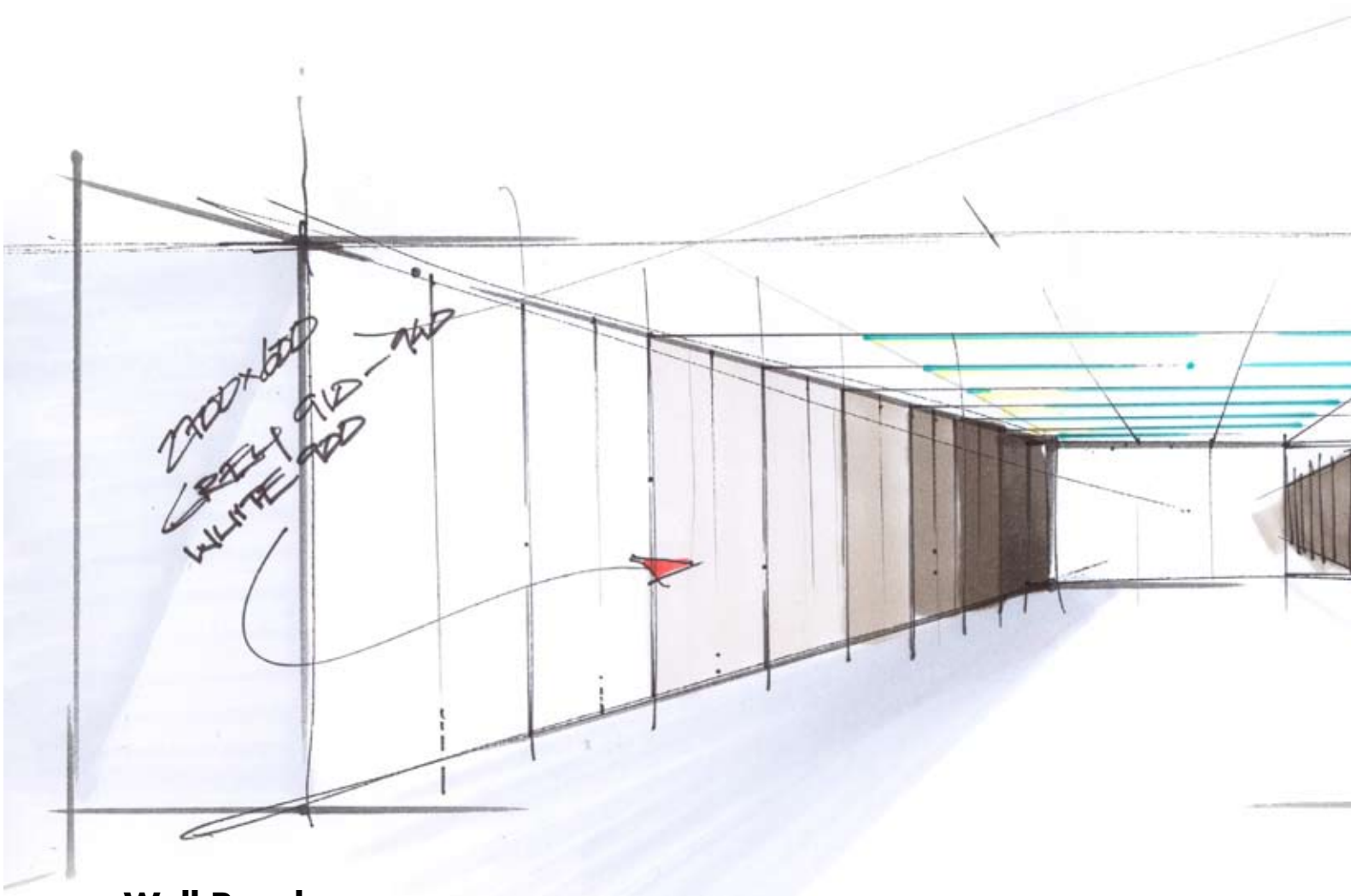
Applications

Ecophon offers Wall Panel systems with different types of surfaces and profiles. What system to choose depends on the kind of premises it is to be installed in. For instance in school corridors a surface with high impact resistance is recommended, while in a prestigious office a surface and a profile with very high aesthetical values can be chosen. In cinemas, theatres, auditoriums and broadcasting studios, the sound absorbers are installed in different ways to control and regulate both the sound emitted from the speakers and reflected sound.

Texona is the surface to use when creating expressive solutions for walls. With an extensive colour range and a textured finish in combination with a well-designed profile system, the possibilities are numerous.

Super G is a glass fibre fabric with high impact resistance. The combination of this strong fabric and a high density glasswool core creates robust and impact resistant wall absorber.

Akutex FT is available on most Ecophon ceiling tiles. This surface in combination with the glass wool core also provides optimal sound absorption when used on wall absorbers. To prevent damage to the surface of the absorbers, they should be installed out of reach.



Wall Panels

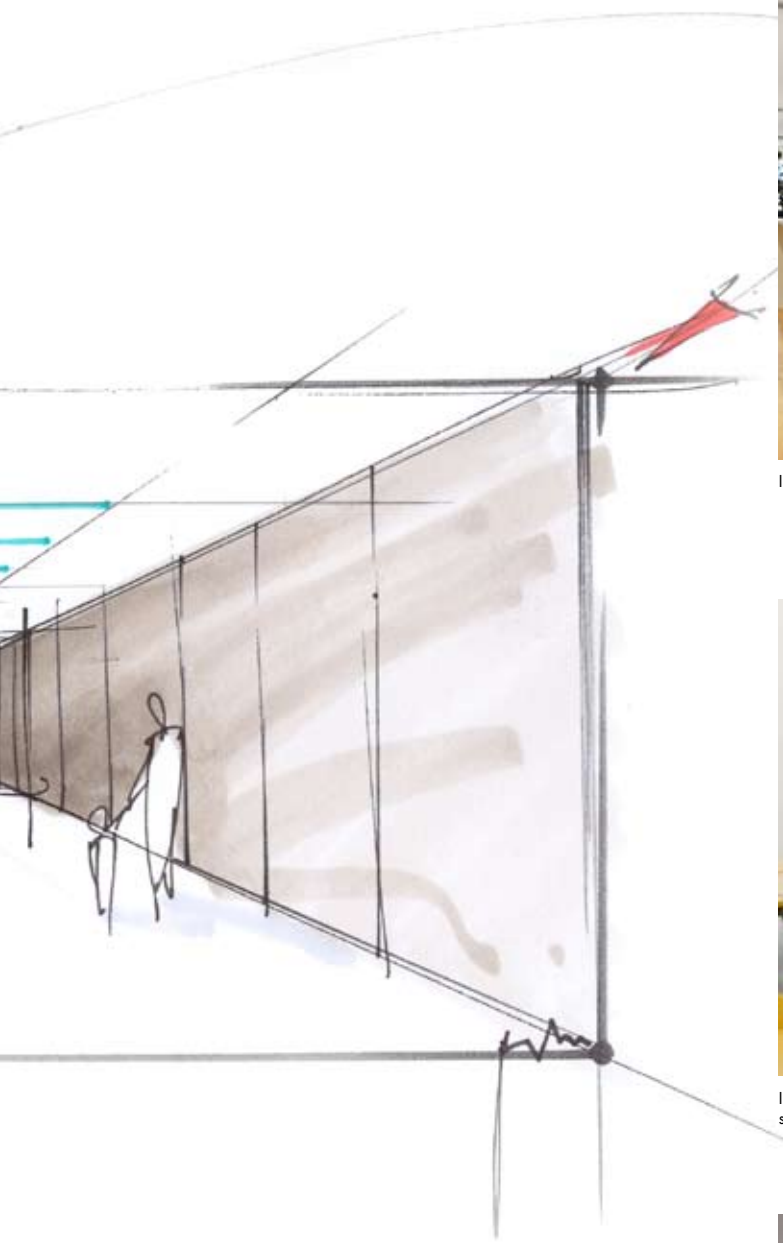
There are many ways in which Wall Panels improve acoustic conditions

Physical effects:

- Increased sound absorption and reduced noise level
- Increased speech intelligibility
- Increased directional hearing
- Avoid flutter echo
- Avoid late sound reflexes

Subjective effects:

- Increased speech and listening comfort
- Reduced stress and stress-related symptoms
- Less vocal effort
- Easier to concentrate



In a room with parallel, hard walls, the wall absorber removes any flutter echo.

In a classroom, the wall absorber helps to reduce the sound level and remove unwanted sound reflexes.

Wall absorbers in reception areas help to reduce the sound level, improving communication.

VERTICAL SOUND ABSORBERS FOR IMPROVED ACOUSTICS

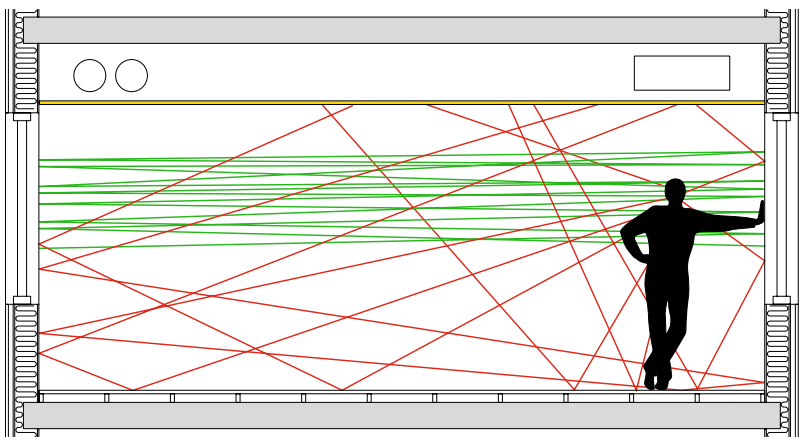
In some premises, conditions are such that a wall-to-wall sound-absorbing ceiling on its own is not sufficient to create good acoustics. New findings show that in, for example, day-care centres and schools for younger grades, it is not only important to reduce the reverberation time, but also to reduce the sound pressure level as a whole. This is best done by maximizing the amount of sound-absorbing material, meaning that the walls have to be used for sound absorption as well. Optimal conditions are achieved by distributing absorbers over other surfaces than just the ceiling.

It might in some cases be difficult or inappropriate to use the ceiling area for sound absorbers, or perhaps only parts of the ceiling can be used. In older buildings, the original ceilings might have attractive plaster details or artwork which you want to be visible, or covering them might be contradictory to regulations. In modern buildings, the design of the interior may be such that the architect or designer wants installations or the roof structure to be exposed. Where the concrete joists are an active part of the thermal system, they must not be covered.

Acoustic parameters and how to apply them

Reverberation time (RT) is by far the most frequently used parameter for calculations and measurements within room acoustics. The formulas used are normally the Sabine formula or some modified version of it. They are easy to use - you need the room volume and the amount of sound absorption, calculated with the absorption coefficient α_p.

These formulas, however, are designed for ideal conditions with **diffuse sound fields**. In reality, the sound field is far from diffuse. It will probably consist of two main parts: one grazing and one non-grazing.



— Grazing sound field — Non-grazing sound field

Grazing sound fields, which exist mainly in the mid and high frequencies, consist of sound energy developed in a plane parallel to a sound absorbing surface (normally the ceiling). The reverberation time in a room is mainly determined by the grazing sound fields. This means, in practice, that the reverberation time is considerably higher than the value calculated for diffuse sound fields.

The best way to control the sound energy in the grazing sound fields is to absorb it by using sound absorbers on walls. The sound energy can also be redirected towards the (sound-absorbing) ceiling by scattering or diffusion from furniture, interior fittings and surfaces.

Sound absorbers installed as small fields instead of large, unbroken areas will increase diffusion and further reduce reverberation time.

Added benefits with vertical absorbers

Many premises require really good room acoustics in order to reduce the noise level. The more sound absorption there is in a room, the lower the noise level will be. It has been shown that physical reduction of sound pressure levels (= less noise) in a room also results in additional sound reduction by psychological reaction: people talk more quietly.

With regard to environments requiring a high level of speech intelligibility, application of the STI (or RASTI) value might be a more appropriate parameter than reverberation time. Although STI is partly determined by the reverberation time, it is better correlated to the amount of sound absorption in the room. Adding sound absorption by placing absorbers on the walls will decrease the reverberation time, improve speech intelligibility and also reduce the sound pressure level.

VERTICAL SOUND ABSORBERS FOR IMPROVED ACOUSTICS

Practical solutions with vertical acoustics

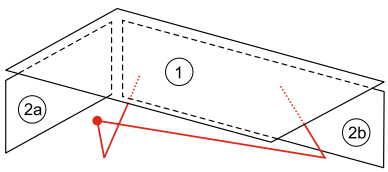
There are a minimum of three things to take into consideration when treating a room acoustically:

• the area available for sound treatment

• the requirements for mechanical resistance

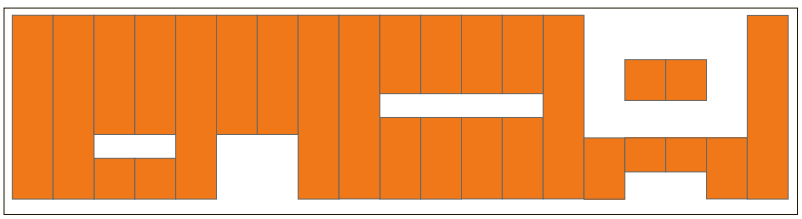
• the aesthetics

The most straightforward application is to install wall panels continuously wall-to-wall or to partly cover a wall. From the acoustic point of view it is ideal to cover at least two perpendicular walls, or parts of them, since, in this case, both of the horizontal sound fields are being treated and flutter echo is avoided.



In most cases it is an advantage to combine the wall absorbers with a suspended ceiling.

1) ceiling
2a) short wall
2b) long wall



Another way of installing wall panels is to split them into smaller fields - or even use them singly, scattered over the wall. This can be done in regular or irregular patterns and provide an outlet for all sorts of creativity.

A common way of arranging wall panels in, for example, classrooms or offices is to install a horizontal band of absorbers at a suitable height and use them as pin-boards. In this case too it is preferable to use more than one wall and to combine with a sound-absorbing ceiling. The wall absorbers should be placed at the height of people's ears in both the sitting and standing positions.

Corners are especially important for the acoustics - corners between walls and corners between the ceiling and the walls - sound absorbers perform optimally there.

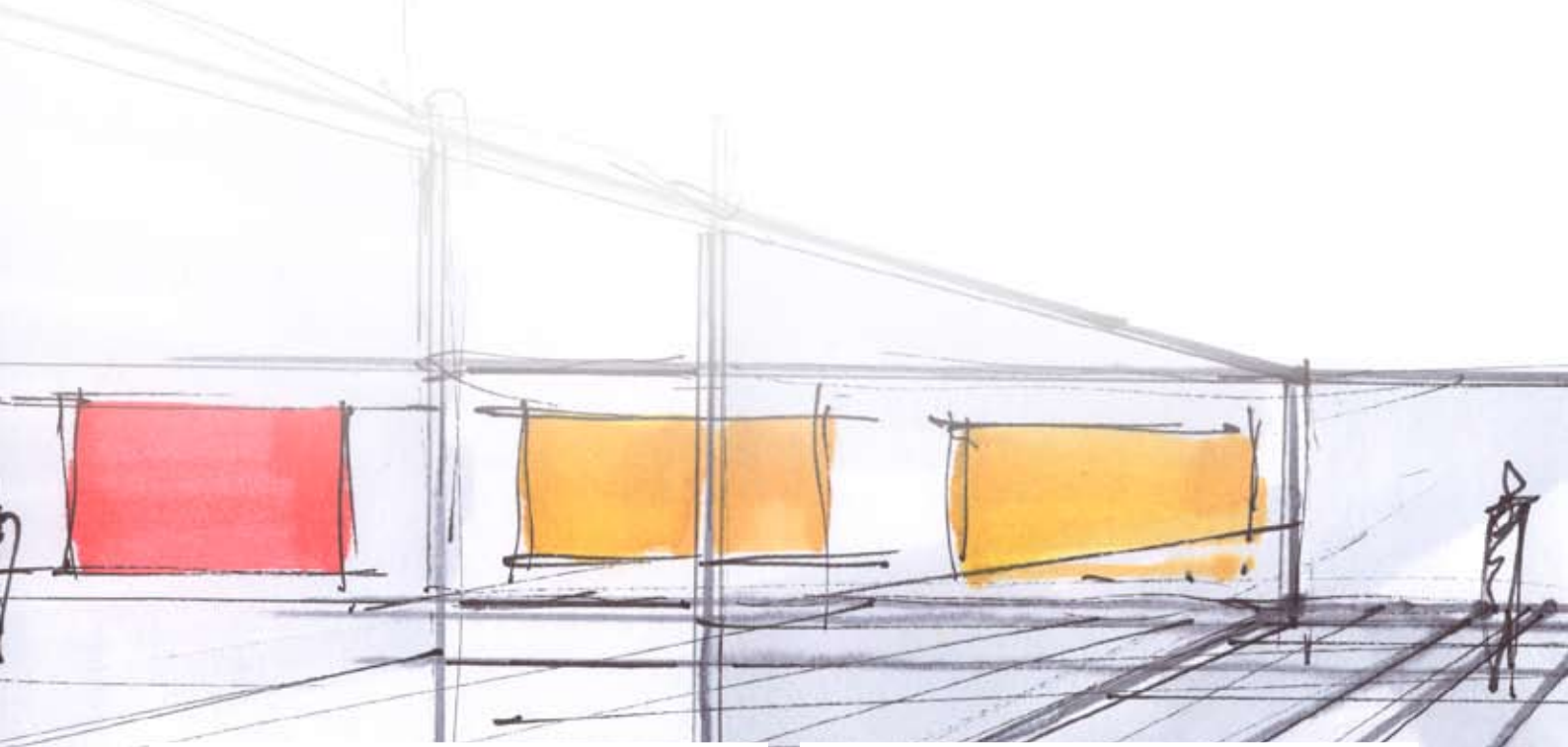
The amount of sound absorption can be used to calculate speech intelligibility and the reduction of the sound pressure level. It is not, however, safe nor reliable to calculate the reverberation time (RT) on the basis only of the amount of sound absorption.

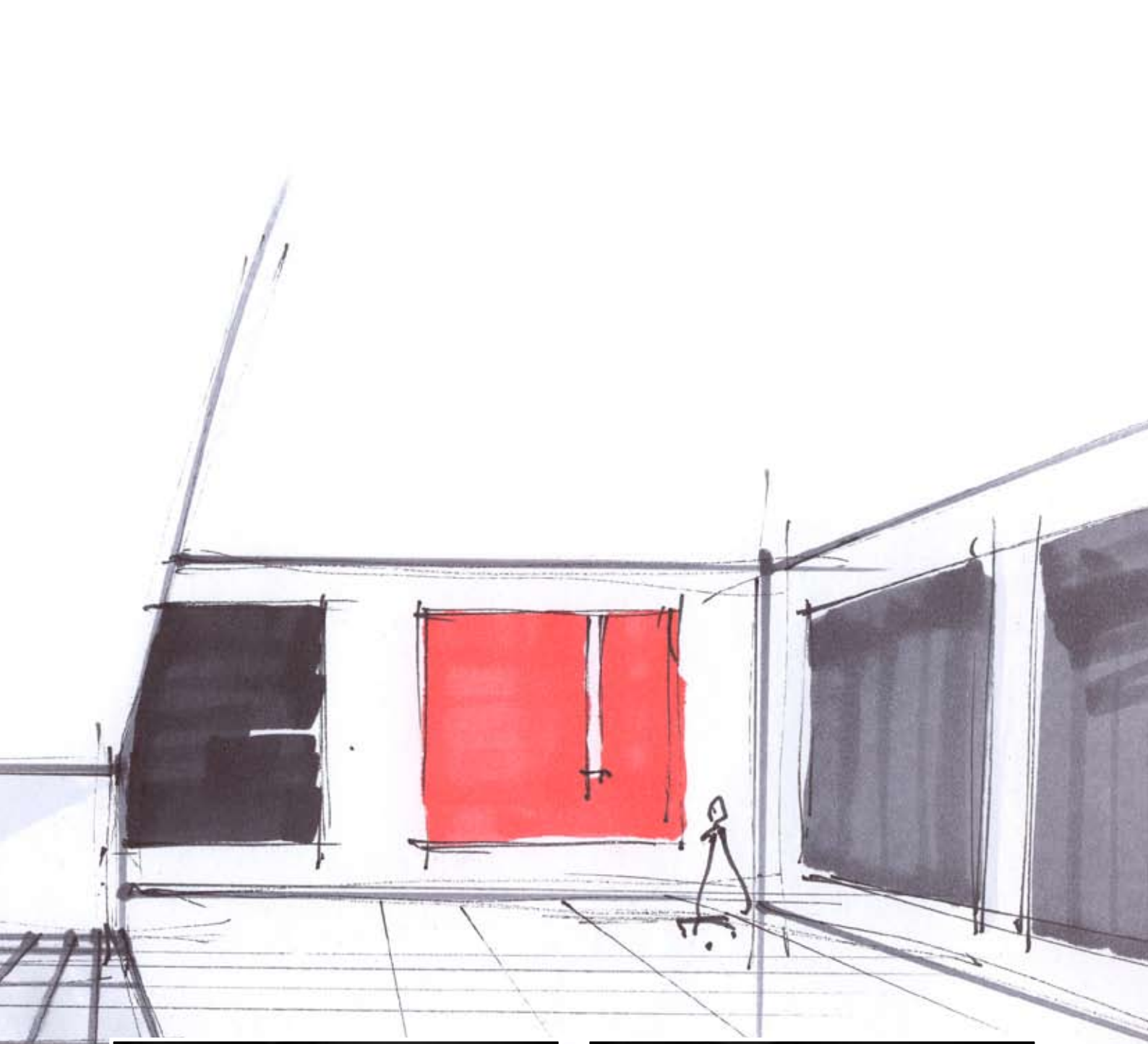
HORIZONTAL, VERTICAL OR DIAGONAL? WE'LL GIVE YOU INSPIRATION!

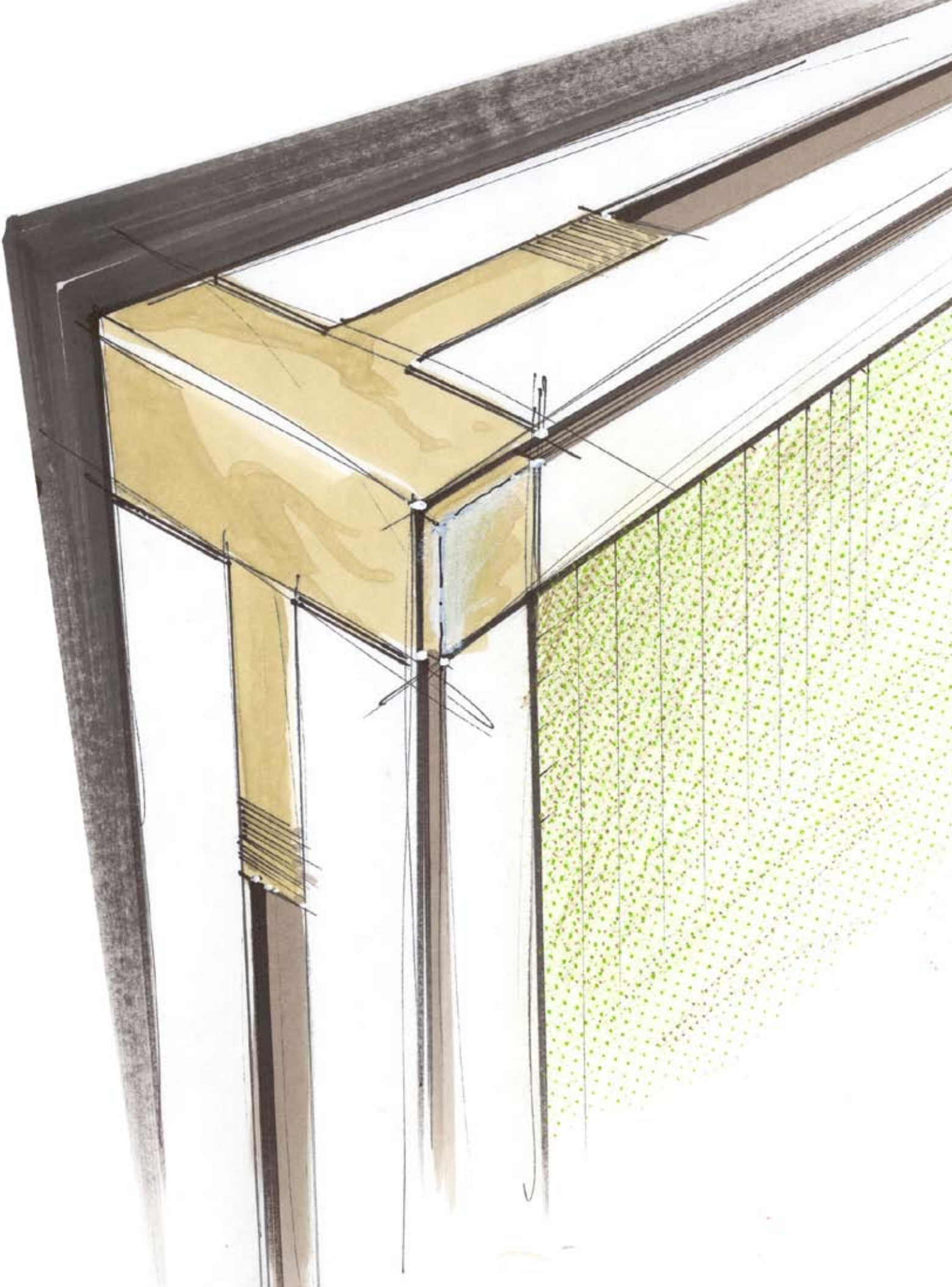
There are several different ways of installing wall panels. They can be split into smaller fields to create different patterns, installed from ceiling to floor to create a uniform wall and, with the smart profile, it is also possible to create different types of framing. The wall panel installation process, in other words, can be an outlet for all sorts of creativity.

To give you an idea of the possibilities, we gathered some creative people together and asked them to show us their ideas for combining the panels.

If you want to create your own combinations visit our website at www.ecophon.co.uk







Visible or hidden, your choice!

The profiles for Wall Panel A and Wall Panel C come in 3 colours and finishes. This enables you to create a distinct frame effect round the panel or, alternatively, a more subtle one. You decide.






CONNECT WP PROFILE

TEXTURED WHITE.

Nearest NCS colour sample: S 0502-Y. Gloss 2.

NATURAL ANODIZED:

nearest NCS colour sample: S 1000-N. Gloss 10.

BLACK ANODIZED.

Nearest NCS colour sample: S8502-B. Gloss 5.

CONNECT WP CORNER

MATT WHITE.

Nearest NCS colour sample: S 0502-Y.

MATT GREY.

Nearest NCS colour sample: S 2500-N.

MATT BLACK.

Nearest NCS colour: S 9000-N.

CONNECT GRID

WHITE 010.

Nearest NCS colour sample: S 0502-Y. Gloss 20.

GREY RAL 9006.

Natural variation in gloss and colour can occur. Metallic.

ULTRA MATT BLACK.

Nearest NCS colour sample: S 9000-N. Gloss 3.

COLOUR COLLECTION

The colour reproductions indicate the available colours and finishes. However, we can also provide samples in each different colour and finish. We recommend that you review these samples before placing an order.Colours may vary between batches.

To see our latest colour collection, visit our website, www.ecophon.co.uk

TEXONA

WHITE 900.

Nearest NCS colour sample S 0500-N. Light reflectance 81%.

LIGHT GREY 910.

Nearest NCS colour sample S 2502-Y. Light reflectance 52%.

MEDIUM GREY 920.

Nearest NCS colour sample S 4502-Y. Light reflectance 34%.

LIGHT BEIGE 620.

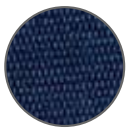
Nearest NCS colour sample S 2005-Y30R. Light reflectance 56%.

BLACK 940.

Nearest NCS colour sample S 9000-N. Light reflectance 5%.

BLUE 720.

Nearest NCS colour sample S 7020-R80B. Light reflectance 6%.



TURQUOISE 710.

Nearest NCS colour sample S 1040-B30G. Light reflectance 49%.

ORANGE 520.

Nearest NCS colour sample S 2060-Y50R. Light reflectance 27%.

BROWN 610.

Nearest NCS colour sample S 7010-Y10R. Light reflectance 14%.

DARK GREY 930.

Nearest NCS colour sample S 6502-Y. Light reflectance 17%.

VIOLET 730.

Nearest NCS colour sample S 7020-R50B. Light reflectance 6%.

CERISE 810.

Nearest NCS colour sample S 2060-R20B. Light reflectance 16%.

RED 820.

Nearest NCS colour sample S 2070-R. Light reflectance 11%.

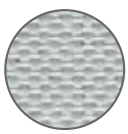
SUPER G

WHITE 085.

Nearest NCS colour sample S 1002-Y. Light reflectance 78%.

GREY 984.

Nearest NCS colour sample S 3502-G. Light reflectance 38%.



GREEN 583.

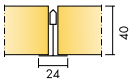
Nearest NCS code S 4040- G40Y. Light reflection 22%.

AKUTEX FT

WHITE FROST

Nearest NCS colour sample S 0500-N. Light reflectance 85% (diffuse reflectance).

ECOPHON WALL PANEL™ A



For use as vertical absorbers together with, or instead of a sound absorbing ceiling, to achieve excellent acoustic properties in the room, particularly in larger areas. Ecophon Wall Panel A has an exposed grid system and each panel is demountable.

SYSTEM AND PRODUCT DESCRIPTION

The system consist of Ecophon Wall Panel A panels and Ecophon Connect grid systems, with an approximate weight of 4 kg/m².

The panels are manufactured from high density glass wool. The visible surface has a glass fibre fabric (Texona) or a strong glass fibre fabric (Super G), and is also available in Akutex FT coating (white). The back of the tile is covered with glass tissue. The edges are natural.

The grid is manufactured from galvanized steel.

SYSTEM RANGE

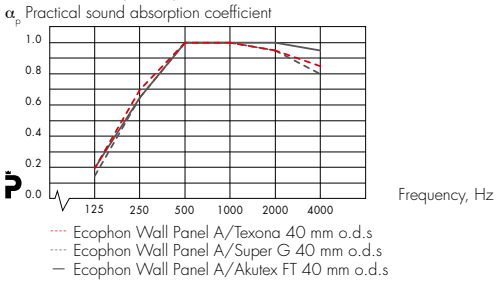
Size, mm	2700 x 1200	48 x 108
T24	•	•
Thickness	40	40
Inst. diagr.	M194	M194

ACOUSTICS:

SOUND ABSORPTION: Test results according to EN ISO 354.

o.d.s = overall depth of system

α_p Practical sound absorption coefficient



Classification according to EN ISO 11654, and the single value ratings for NRC and SAA according to ASTM C 423.

Product	Wall Panel A/Texona	Wall Panel A/Super G	Wall Panel A/Akutex FT
tkh	40	40	40
Absorption class	A	A	A

SOUND INSULATION: Not applicable.

SOUND PRIVACY: AC=230 according to ASTM E 1376 and E 1110.


Wall Panel A


Wall Panel A system with Connect Channel trim and Connect T24 Main Runner


Wall Panel A with internal corner solution


Wall Panel A with Connect Recessed profile

ACCESSIBILITY: The panels are demountable.

CLEANABILITY: Daily dusting and vacuum cleaning. Weekly wet cleaning (Super G and Akutex FT surface).
Weekly dusting and vacuum cleaning (Texona surface).

LIGHT EFFICIENCY: Wall Panel in white has high light reflectance. Light reflectance and nearest NCS colour sample for all the different colours: See Ecophon Colour Range.

INFLUENCE OF CLIMATE: The panels withstand a permanent ambient RH up to 95% at 30°C (Super G and Akutex FT surface) and RH up to 75% at 30°C (Texona surface) without sagging, warping or delaminating (EN 13964).
Thermal resistance for the panels, R_p=1,0 m²°C/W. Since a wall absorber mounted on an external wall serves as additional insulation, the need for vapour barrier should be investigated.

INDOOR CLIMATE: Certified by the Indoor Climate Labelling, recommended by the Swedish Asthma and Allergy Association.

ENVIRONMENTAL INFLUENCE: Granted the Nordic Swan eco-label. Fully recyclable.

FIRE SAFETY: Reaction-to-fire classifications.

Country	Standard	Class
Europa	EN 13501-1	A2-s1,d0

The glass wool core of the panels is tested and classified as non-combustible according to EN ISO 1182.

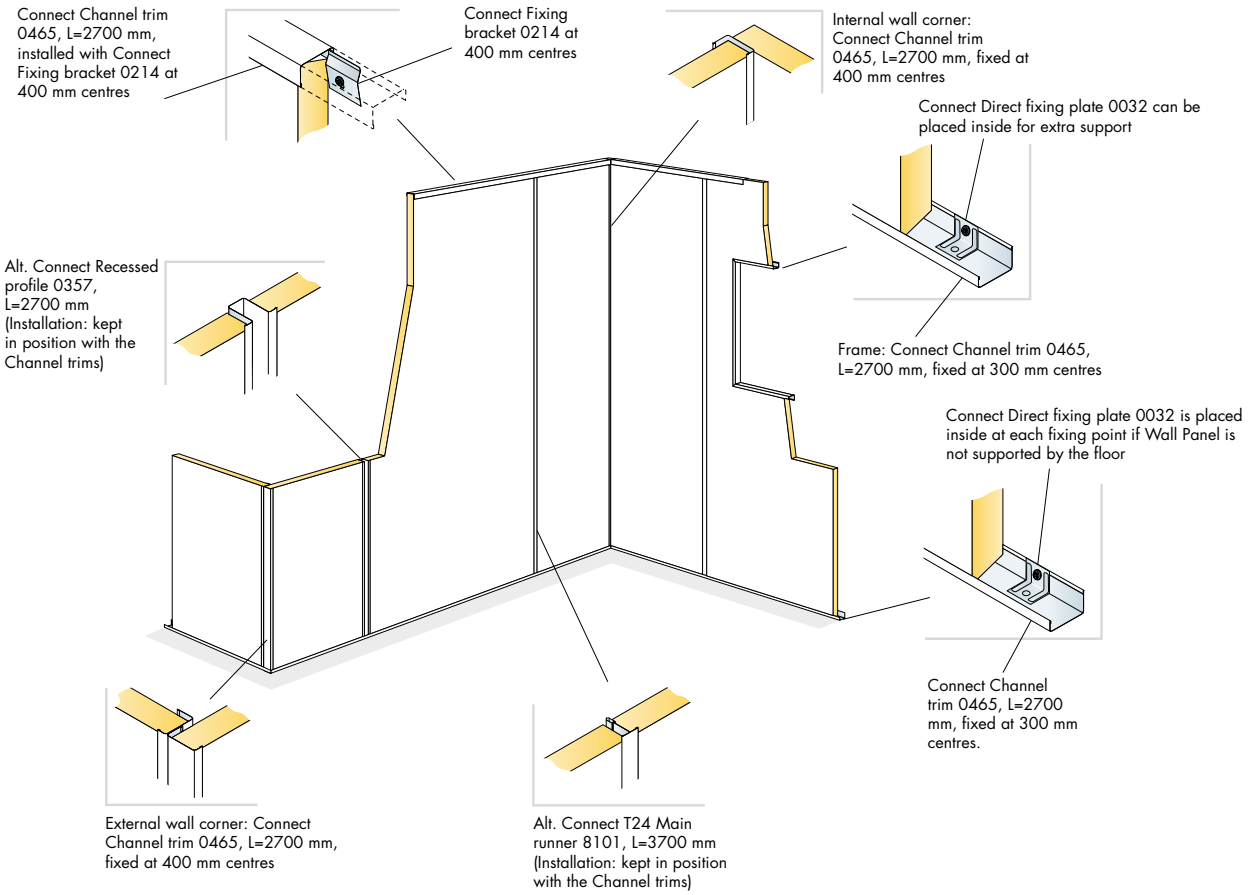
MECHANICAL PROPERTIES: Texona surface has moderate impact resistance. Super G surface is a stronger glass fibre fabric with high impact resistance.

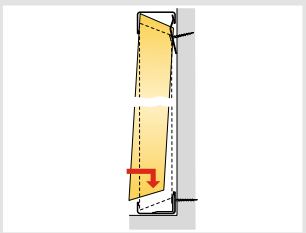
INSTALLATION: Installed according to installation diagram M194. Wall Panel with Akutex FT surface should be installed out of reach.

www.ecophon.co.uk, CADsupport, Product selector, Specification, Maintenance manual

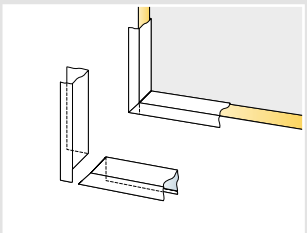
CE www.ecophon.co.uk/co.ukce

INSTALLATION DIAGRAM (M194) FOR WALL PANEL A

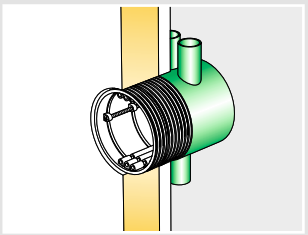




Detail of installation



Cutting of channel trim for internal corner

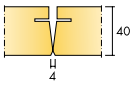


Accesories for adjusting electrical installations are available in electricity retail stores

M194 COMPONENTS

Ecophon Wall Panel A
Connect Channel trim 0465, L=2700 mm, fixed at 300 mm centres.
Connect Direct fixing plate 0032 is placed inside at each fixing point if Wall Panel is not supported by the floor
Connect Channel trim 0465, L=2700 mm, installed with Connect Fixing bracket 0214 at 400 mm centres
Connect Fixing bracket 0214 at 400 mm centres
Internal wall corner: Connect Channel trim 0465, L=2700 mm, fixed at 400 mm centres
Alt. Connect Recessed profile 0357, L=2700 mm (Installation: kept in position with the Channel trims)
Alt. Connect T24 Main runner 8101, L=3700 mm (Installation: kept in position with the Channel trims)
External wall corner: Connect Channel trim 0465, L=2700 mm, fixed at 400 mm centres
Frame: Connect Channel trim 0465, L=2700 mm, fixed at 300 mm centres
Connect Direct fixing plate 0032 can be placed inside for extra support

ECOPHON WALL PANEL™ C



For use as vertical absorbers together with, or instead of a sound absorbing ceiling, to achieve excellent acoustic properties in the room, particularly in larger areas. Ecophon Wall Panel C has a concealed grid and the bevelled edges create a narrow groove between each panel. The system provides extensive design possibilities. The panels are demountable.

SYSTEM AND PRODUCT DESCRIPTION

The system consist of Ecophon Wall Panel C panels and Ecophon Connect grid systems, with an approximate weight of 5 kg/m².

The panels are manufactured from high density glass wool. The visible surface has a glass fibre fabric (Texona) or a strong glass fibre fabric (Super G), and is also available in Akutex FT coating (white). The back of the panels is covered with glass tissue. The edges are painted, and the front surface is partly covering the long edges.

The profiles are manufactured from extruded aluminium.

SYSTEM RANGE

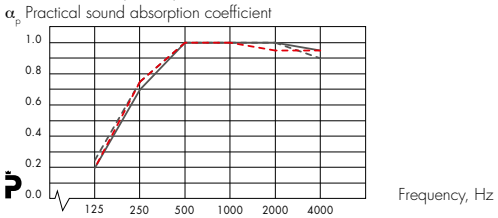
Size, mm	2700 x 600
WP profile	•
Thickness	40
Inst. diagr.	M235/ M195/ M196

ACOUSTICS:

SOUND ABSORPTION: Test results according to EN ISO 354.

o.d.s = overall depth of system

α_p Practical sound absorption coefficient



Classification according to EN ISO 11654, and the single value ratings for NRC and SAA according to ASTM C 423.

Product	Wall Panel C/Texona	Wall Panel C/Super G	Wall Panel C/Akutex FT
tkh	40	40	40
Absorption class	A	A	A

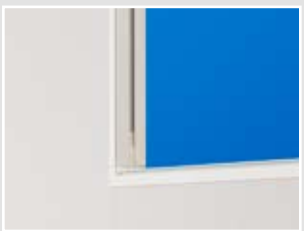
SOUND INSULATION: Not applicable.

SOUND PRIVACY: AC=240 according to ASTM E 1376 and E 1110.


Wall Panel C


Section of Wall Panel C System


Wall Panel C system with Connect WP profile and external corner


Wall Panel C system with Connect WP profile and internal corner

ACCESSIBILITY: The panels are demountable, if installed without splines.

CLEANABILITY: Daily dusting and vacuum cleaning. Weekly wet cleaning (Super G and Akutex FT surface).
Weekly dusting and vacuum cleaning (Texona surface).

LIGHT EFFICIENCY: Wall Panel in white has high light reflectance. Light reflectance and nearest NCS colour sample for all the different colours: See Ecophon Colour Range.

INFLUENCE OF CLIMATE: The panels withstand a permanent ambient RH up to 95% at 30°C (Super G and Akutex FT surface) and RH up to 75% at 30°C (Texona surface) without sagging, warping or delaminating (EN 13964).
Thermal resistance for the panels, R_p=1,0 m²°C/W. Since a wall absorber mounted on an external wall serves as additional insulation, the need for vapour barrier should be investigated.

INDOOR CLIMATE: Certified by the Indoor Climate Labelling, recommended by the Swedish Asthma and Allergy Association.

ENVIRONMENTAL INFLUENCE: Granted the Nordic Swan eco-label. Fully recyclable.

FIRE SAFETY: Reaction-to-fire classifications.

Country	Standard	Class
Europa	EN 13501-1	A2-s1,d0

The glass wool core of the panels is tested and classified as non-combustible according to EN ISO 1182.

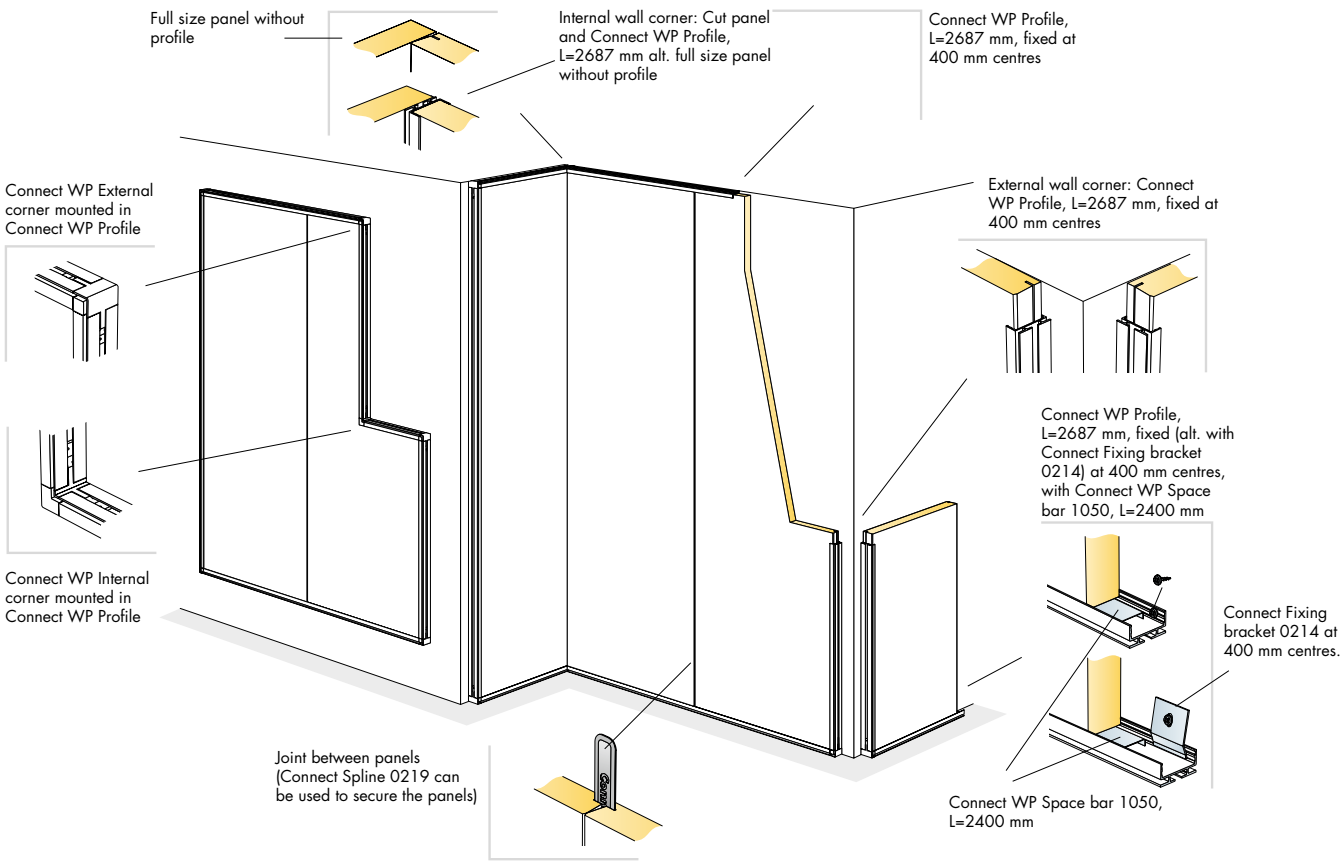
MECHANICAL PROPERTIES: The Wall Panel C/Super G system has been tested according to EN 13964 annex D and DIN 18 032 part 3 and fulfils the demands corresponding to class 1A. Please note: Where the panels are subjected to frequent blows and impacts e.g. behind an indoor goal mouth, it will be necessary to add some protection in the form of restraining nets or wooden slats. Texona surface has moderate impact resistance.

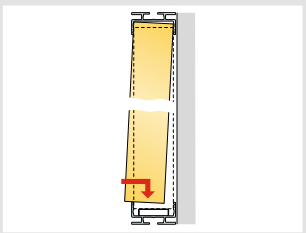
INSTALLATION: Installed according to installation diagram M195 (vertical installation), M196 (horizontal installation) or M235 (diagonal installation). Wall Panel with Akutex FT surface should be installed out of

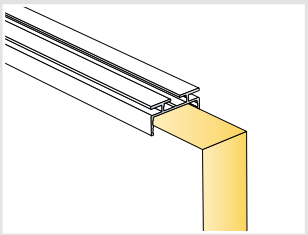
www.ecophon.co.uk, CADsupport, Product selector, Specification, Maintenance manual

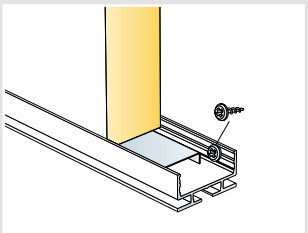
CE www.ecophon.co.uk/co.ukce

INSTALLATION DIAGRAM (M195) FOR WALL PANEL C VERTICAL INSTALLATION




Detail of installation

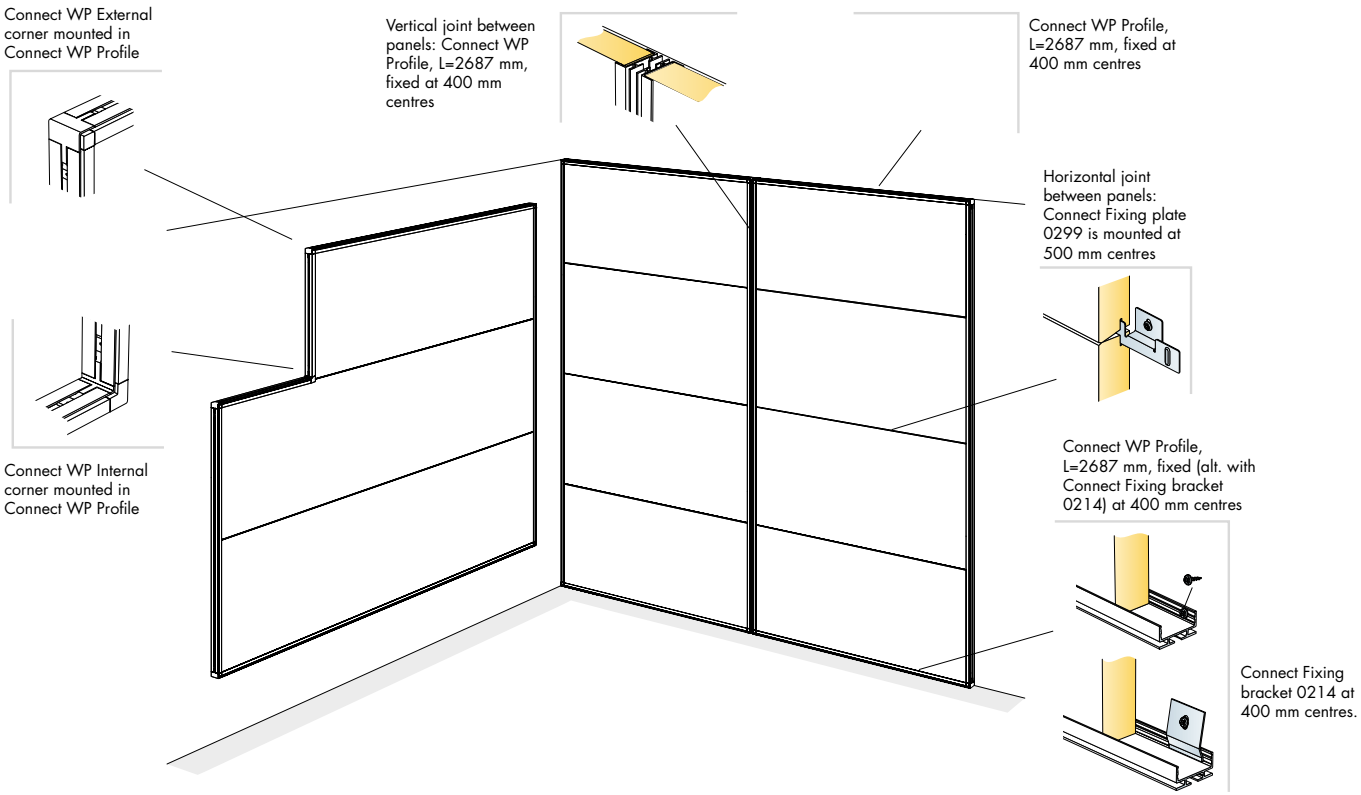

Detail of upper connection

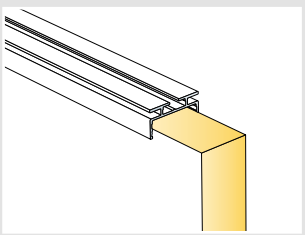

Detail of lower connection

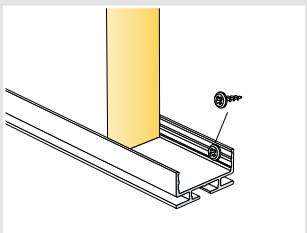
M195 COMPONENTS

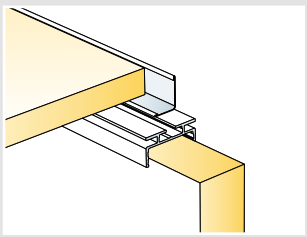
Ecophon Wall Panel C
Connect WP Profile, L=2687 mm, fixed (alt. with Connect Fixing bracket 0214) at 400 mm centres, with Connect WP Space bar 1050, L=2400 mm
Connect Fixing bracket 0214 at 400 mm centres.
Connect WP Space bar 1050, L=2400 mm
Connect WP Profile, L=2687 mm, fixed at 400 mm centres
External wall corner: Connect WP Profile, L=2687 mm, fixed at 400 mm centres
Internal wall corner: Cut panel and Connect WP Profile, L=2687 mm alt. full size panel without profile
Full size panel without profile
Joint between panels (Connect Spline 0219 can be used to secure the panels)
Connect WP External corner mounted in Connect WP Profile
Connect WP Internal corner mounted in Connect WP Profile

INSTALLATION DIAGRAM (M196) FOR WALL PANEL C HORIZONTAL INSTALLATION




Detail of upper connection

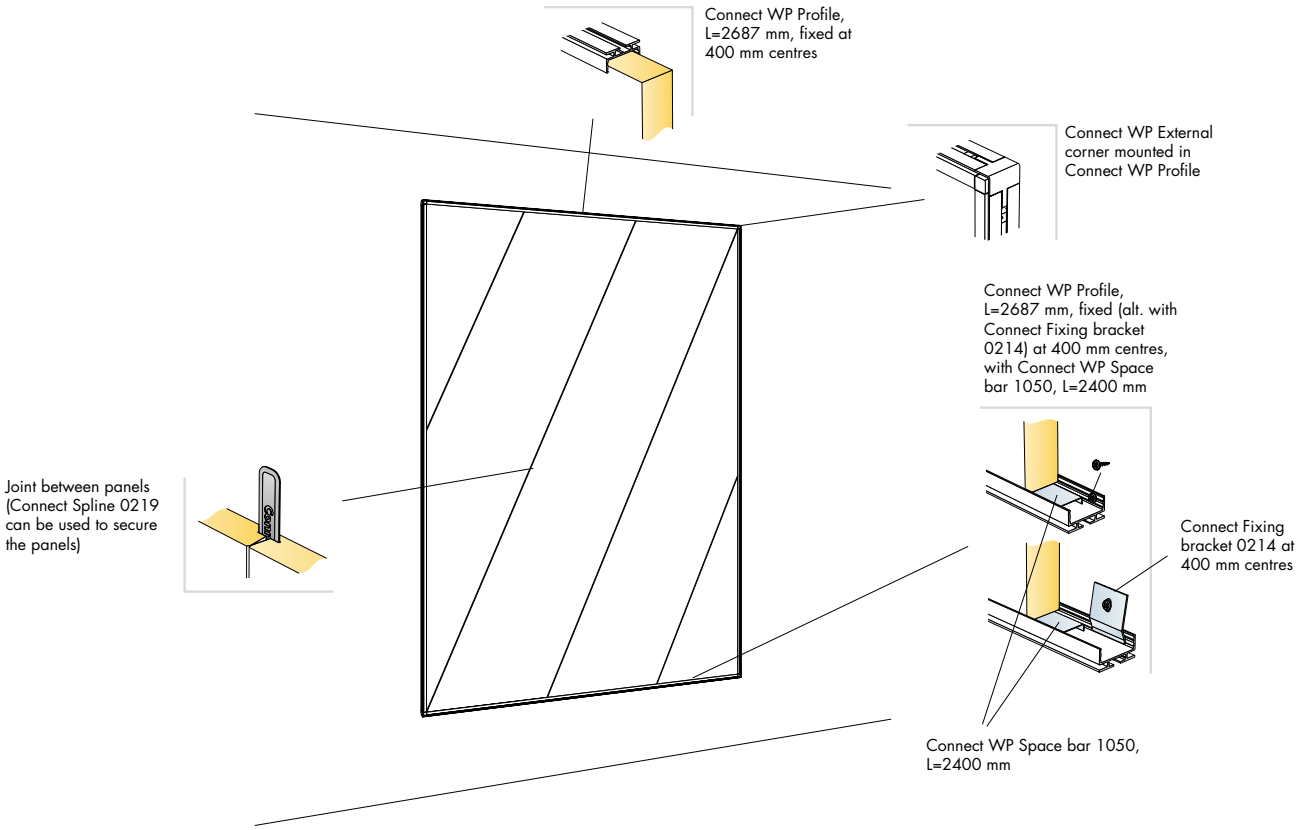

Detail of lower connection

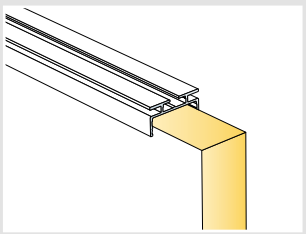

Detail of junction to acoustic ceiling

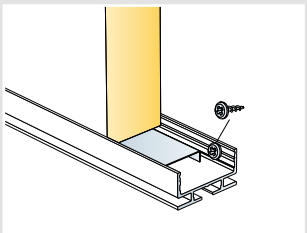
M196 COMPONENTS

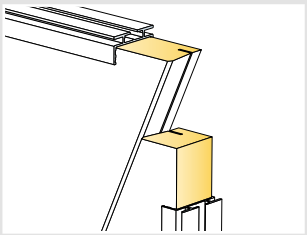
Ecophon Wall Panel C
Connect WP Profile, L=2687 mm, fixed (alt. with Connect Fixing bracket 0214) at 400 mm centres
Connect Fixing bracket 0214 at 400 mm centres.
Horizontal joint between panels: Connect Fixing plate 0299 is mounted at 500 mm centres
Connect WP Profile, L=2687 mm, fixed at 400 mm centres
Vertical joint between panels: Connect WP Profile, L=2687 mm, fixed at 400 mm centres
Connect WP External corner mounted in Connect WP Profile
Connect WP Internal corner mounted in Connect WP Profile

INSTALLATION DIAGRAM (M235) FOR WALL PANEL C DIAGONAL INSTALLATION




Detail of upper connection


Detail of lower connection


Detail of upper right corner

M235 COMPONENTS

Ecophon Wall Panel C
Connect WP Profile, L=2687 mm, fixed (alt. with Connect Fixing bracket 0214) at 400 mm centres, with Connect WP Space bar 1050, L=2400 mm
Connect Fixing bracket 0214 at 400 mm centres
Connect WP Space bar 1050, L=2400 mm
Connect WP External corner mounted in Connect WP Profile
Connect WP Profile, L=2687 mm, fixed at 400 mm centres
Joint between panels (Connect Spline 0219 can be used to secure the panels)

Idea and layout: Saint-Gobain Ecophon AB, Printer: Skånetryck AB, Photo: Patrick Klemm, Paul Megahey, Studio e. Illustrations: 3D Bild/Mats Paulsson

Ecophon®

A SOUND EFFECT ON PEOPLE

Ecophon dates back to 1958, when the first sound absorbers from glass wool were produced in Sweden to improve the acoustic working environment. Today the company is a global supplier of acoustic systems that contribute to good room acoustics and a healthy indoor environment, with the focus on offices, education, healthcare and industrial manufacturing premises. Ecophon is part of the Saint-Gobain Group and has sales units and distributors in many countries.

Ecophon's efforts are guided by a vision of earning global leadership in acoustic ceiling and wall absorber systems by providing superior end user value. Ecophon maintains an ongoing dialogue with government agencies, working environment organisations and research institutes, and is involved in formulating national standards in the field of room acoustics where Ecophon contributes to a better working environment wherever people work and communicate.

www.ecophon.co.uk

SAINT-GOBAIN
ECOPHON

Saint-Gobain Ecophon Ltd, Old Brick Kiln, Ramsdell, Tadley, RG26 5PP, phone +44 (0)1256 850977, fax +44 (0)1256 851550,
e-mail: marketing@ecophon.co.uk, www.ecophon.co.uk

09.11 3000