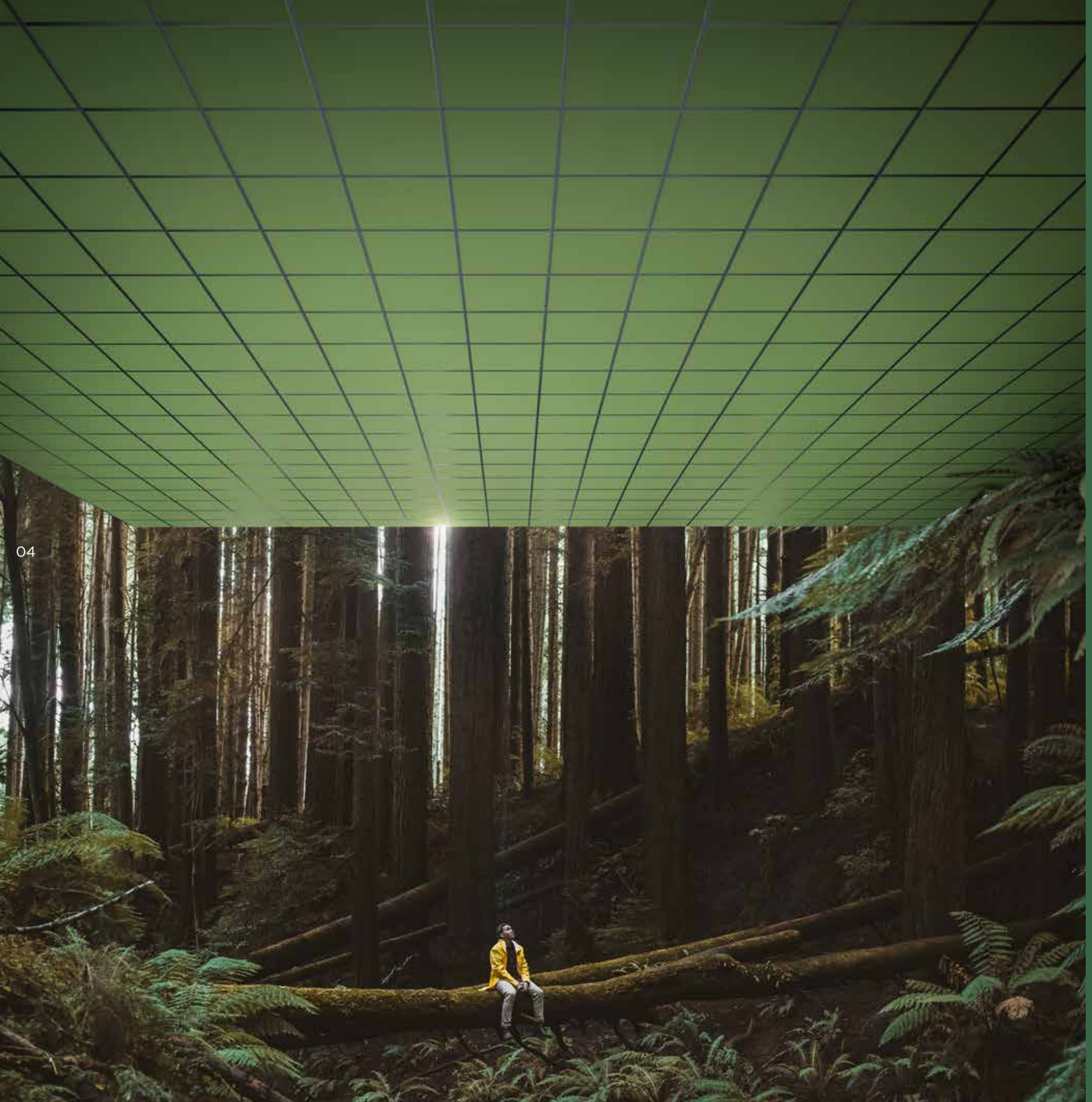
ecophon
SAINT-GOBAIN

ECOPHON

HYGIENE™

WHEN HYGIENE REQUIREMENTS ARE HIGH

SAINT-GOBAIN



A SOUND EFFECT

ON PEOPLE

Saint-Gobain Ecophon contributes to good indoor environments for working, healing and learning. We do this by developing, manufacturing and delivering acoustic products and systems designed around the natural evolution of human hearing – replicating the outdoor sound experience indoors, because that's just better for people.

Having a sound effect on people, in every way we can, is what we do proudly. That promise makes every one of us a passionate advocate for the importance of room acoustics to people's wellbeing – whatever the space, activity or need.

GOOD ACOUSTICS

MATTER EVERYWHERE

The importance of acoustics is underappreciated. Sound impacts us in daily life, and the scientific support for improving our indoor sound environments is well-documented.

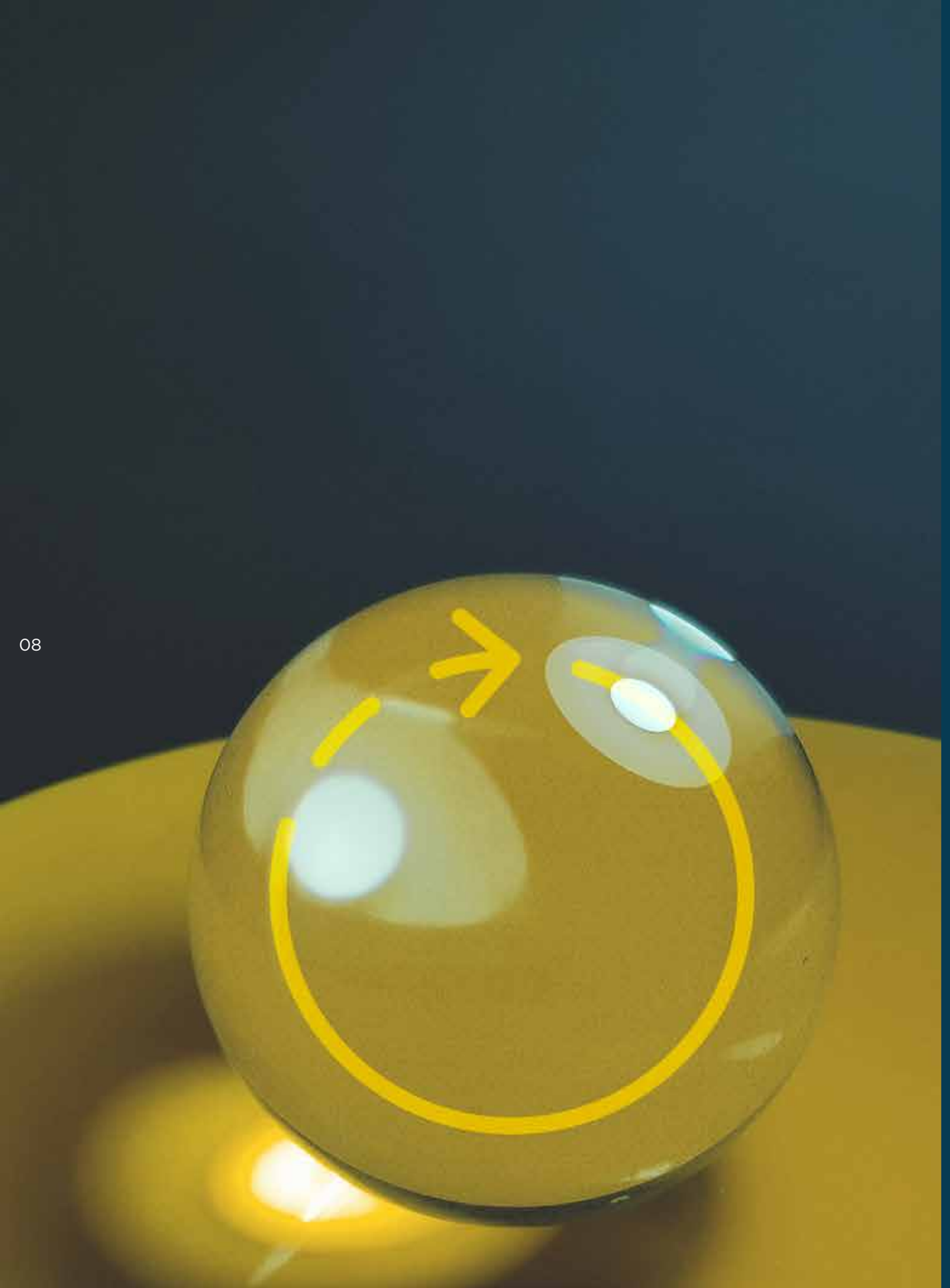
And what exactly is an ideal indoor sound environment for people? One based on how we experience sound outside. The human auditory sense is naturally adapted to an outdoor environment where there is not any sound reflections from ceilings and walls.

That's why most of what we do at Ecophon is about replicating the acoustic qualities found in nature for indoor environments.

Usually that starts with the ceiling. A wall-to-wall acoustic ceiling is the easiest way to get a large sound-absorbing surface area into a space, and is usually the best way to reduce sound strength, shorten reverberation times, and increase speech clarity and overall hearing comfort.

If we also use wall absorbers, we can further improve speech clarity, shorten how far the sound will travel (sound propagation) and increase overall hearing comfort.

A good sound environment supports both the staff and the patient's wellbeing.



TOWARDS

NET-ZERO ACOUSTICS

Sustainability is more than a word – it's a collective movement to protect people and the planet that requires honest commitment and genuine care. That's why Ecophon is building on better materials, transparency, and principles, to name just a few.

We actively support an industry-wide drive to standardised, easy-access Environmental Product Declarations for individual products, rather than product families. Their inclusion of full lifecycle data, from raw material sourcing to end of life, rather than only the favourable stages. A move away from self-declared labels, or non-independently verified sustainability claims. And for any promises of net zero carbon emission targets to be validated by the Science-Based Targets initiative.

If we're going to build a sustainable future, it has to start with an honest approach, high ambition and the best of intentions – to build on better together.

ECOPHON
HYGIENE™

ENSURING THE REQUIRED LEVEL OF HYGIENE AND CLEANLINESS

In hospitals and other healthcare facilities, a good sound environment is crucial for saving lives as well as enabling rest and recovery.

In large industrial premises, a combination of hard, reflective surfaces and loud machines often necessitates the use of hearing protection. However, hearing protection makes it hard to hear alarms, while also making communication almost impossible.

In swimming pool areas, the high noise levels don't just take some of the fun away, but also make it tough for lifeguards to identify potentially serious incidents.

A common characteristic of these environments is that they all have specific hygiene demands. This could, for instance, be cleaning, disinfection, water resistance or particle repellency. There may be highly corrosive pollutants in the air. Or maybe all surfaces in the space need to withstand high-pressure washing. The extensive Ecophon Hygiene™ range offers sound-absorbing solutions that meet all these hygiene demands and more, making sure everyone can experience all the benefits of a workplace with a good sound environment – a workplace that increases wellbeing and performance.

83%

OF COMMUNICATION IN THE EMERGENCY DEPARTMENT IS SPEECH-RELATED*

* Woloshynowych, Davis et al., "Communication patterns in a UK emergency department", Ann. Emerg. Med., Oct 2007, 50(4), p407-413

HYGIENE™
RANGE GUIDE

FIND THE RIGHT PRODUCT FOR YOUR NEEDS

Ecophon Hygiene™ covers a comprehensive range of products, suitable for environments with different needs.

Use the table on the next page to find the product group that meets your demands. Then continue reading about your chosen group on their respective pages.

SHARED PROPERTIES – ECOPHON HYGIENE™

Clean room	Clean room classification ISO 3 - ISO 4 (ISO 14644-1)
	Zone 4 (NF S 90-351)
	Kinetic class for particle elimination, $CP_{(0,5)}5$ (NF S 90-351) or better
	Bacteriological class M1 (NF S 90-351)
Circularity	Fully recyclable
Fire safety	Classification, Class: A2-s1,d0, (EN 13501-1)

DIFFERENTIATING PROPERTIES – ECOPHON HYGIENE™

		CLINIC	MEDITEC	PROTEC	PERFORMANCE	ADVANCE
Range	Installation methods					
Cleanability	Dusting & vacuum cleaning	●	●	●	●	●
	Wet wiping	●	●	●	●	●
Advanced cleanability	Steam cleaning	–	–	●	●	●
	Wet cleaning	–	–	–	●	●
	High pressure washing	–	–	–	●	●
	Hydrogen peroxide vapour	●	●	●	●	●
	Compatible with UV-C disinfection	●	–	–	–	●
x200 Surface endurance	Withstand 200 cycles (ISO 11998)	–	●	●	●	●
	Withstand cycles beyond ISO 11998	–	–	–	–	●
	Steam cleaning	–	–	●	●	●
Chemical resistance	Resistant to disinfection chemicals (ISO 11998)	–	●	●	●	●
	Resistant to strong chemicals (ISO 2812-1)	–	–	–	–	●
Air permeability	Ceiling for areas with air pressure control requirement	–	–	●	–	●
Humidity resistance	Dry area system, compatible with corrosion class C1 areas	●	●	●	●	●
	High humidity area system, compatible with corrosion class C3 areas	–	–	–	●	●
	Swimming pool area system, compatible with corrosion class C4 areas	–	–	–	●	●
	Constant wet area system, compatible with corrosion class C4 areas	–	–	–	–	●
Mould and bacteria resistance	Mould, method A (ISO 846)	Class 0	Class 0	Class 0	Class 0	Class 1
	Bacteria, method C (ISO 846)	Class 0	Class 0	Class 0	Class 0	Class 0
Clean room (Advanced)	Clean room classification (ISO 14644-1)	ISO 4	ISO 4	ISO 3	ISO 4	ISO 3
	Kinetic particle elimination (NFS 90-351)	$CP_{(0,5)}5$	$CP_{(0,5)}5$	$CP_{(0,5)}1$	$CP_{(0,5)}5$	$CP_{(0,5)}1$
Page		42	46	50	56	70

AKUTEX™ - OUR MOST VERSATILE ACOUSTIC CEILING SURFACE

Akutex™ T A well tried and tested surface with a classic look.

Akutex™ TH A water repellent and stain-protected surface for applications with cleaning demands.

Akutex™ HP A particle repellent surface for clean room applications.

Akutex™ HS A surface for applications with high cleaning demands.

For the latest information go to www.ecophon.com or contact your nearest Ecophon representative.

CLEANING & DISINFECTION

HYGIENE MAINTENANCE

Ecophon sound absorbers are available for every hygiene demand. To ensure their durability it is important to choose the best solution for your needs, and to know how to clean the products.

Here you can see specific characteristics of the product groups in the Ecophon Hygiene™ family. General recommendations that should always be followed:

- **Perform regular maintenance of the ventilation system**
- **Avoid pressure differences between the plenum and the room**
- **Wear clean cotton gloves when handling the absorbers**

Always refer to the product's technical data sheet to ensure its compatibility with the described cleaning methods. The use of clips on the rear side of the ceiling tiles facilitates cleaning.

Always ensure that the corrosion class of the ceiling grids is compatible with the desired cleaning protocol and cleaning products.

CLEANING AND DISINFECTION

		CLINIC	MEDITEC	PROTEC	PERFORMANCE	ADVANCE
Range	Installation methods					
Cleanability	Dusting & vacuum cleaning	Daily	Daily	Daily	Daily	Daily
	Wet wiping	Weekly	Weekly	Weekly	Weekly	Daily
Advanced cleanability	Steam cleaning	–	–	4/year	4/year	Daily
	Wet cleaning	–	–	–	2/year[1]	Daily
	High pressure washing	–	–	–	2/year[1]	Daily
	Hydrogen peroxide vapour[2]	●	●	●	●	●
Chemical resistance	Applicable for disinfection chemicals	–	2/year	2/year	2/year	Daily
Page		42	46	50	56	70

1. Not applicable to Ecophon Hygiene Performance™ B, Ecophon Hygiene Performance™ Ds and Ecophon Hygiene Performance™ Care Wall

2. Method according to supplier of HPV equipment

Cleanability

The common cleaning methods for ceiling tiles require the use of a soft microfibre cloth (made of a minimum of 70% polyester).

Dry cleaning: Wipe with a soft microfibre cloth using gentle circular movements, or use a vacuum cleaner with a soft brush or with a microfibre cloth wrapped around the standard head. Set the suction to a reduced level and vacuum gently, with very soft contact between the cleaner head and the tiles. Vacuum with linear movements.

Wet wiping: Saturate the microfibre cloth with water or with a mild detergent solution suitable for indoor painted surfaces. Wipe with circular movements and moderate pressure.

Advanced cleanability

In demanding environments, ceiling tiles need to be compatible with advanced cleanability, disinfection and scrubbing methods. Specific Ecophon products are designed and tested for these protocols:

Wet cleaning at low pressure: Apply a suitable cleaning foam or gel to the surface, rinse with water and finally wipe the surface dry with a clean, soft microfibre cloth (made of a minimum of 70% polyester). Wipe with gentle circular movements.

Wet cleaning at high pressure: When washing tiles secured with clips, set the pressure to 20-40 bar and keep a distance of at least 0.5 m between the hose and the panel. If a pressure of 40-100 bar needs to be applied, it is recommended to demount the tiles. Lay them on a rigid surface and keep a distance of at least 1 m between the hose and the panel. In all cases, the hose should be held at a 30° angle of incidence. The water temperature should be 20°C. Clean with linear movements.

Steam cleaning: Apply steam to the surface of the panels through a nozzle with an attached soft microfibre cloth (made of minimum 70% polyester). Move the steamer with gentle circular movements.

Disinfection with Hydrogen Peroxide Vapour: According to the test method specified by Bioquell.

Chemical resistance

Specific Ecophon products are designed to withstand use of common detergents and disinfectants. The testing method for these products involves repeated exposure to detergents or disinfectants and evaluation is carried out according to ISO 11998:2006 (Determination of wet-scrub resistance and cleanability of coatings) and ISO 2812-1. The testing is done with a soft microfibre cloth made of a minimum of 70% polyester.

FUNCTIONAL DEMANDS

PRODUCT PROPERTIES

Ecophon sound-absorbing systems are continuously tested to verify that they perform as intended, withstand relevant hygiene demands and meet applicable standards. Here you can learn more about what to look for when choosing your acoustic solution and specific products.

ACOUSTICS

Acoustics is the term for the study of sound and how sound is perceived. The field of acoustics is divided into several specialist areas, where room acoustics has to do with indoor sound environments.

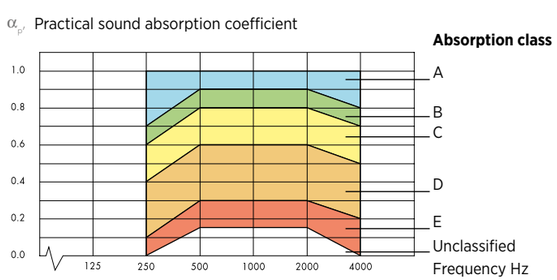
To create a healthy sound environment, it is important to use sound absorbers that deliver the desired function. Ecophon Hygiene™ offers absorbers of the highest quality. These absorbers also meet hygiene demands in tough environments.

Absorption classes

Sound absorption qualities are measured at different frequencies, according to EN ISO 354. Each resulting value is defined as a practical sound absorption coefficient, αp. These values are then weighted to create one αw value. The αw value is between 0 and 1, where 1 is the best.

To make it easier to communicate sound absorption qualities, the αw is used for classifying sound absorbers in classes A–E, according to EN ISO 11654. A is the highest classification.

ABSORPTION CLASSES A–E, ACCORDING TO EN ISO 11654



Sound strength (G)

Sound strength is a measure of the loudness of all sounds that are present in a space. It is expressed in decibels (dB). A high sound strength results in people having to raise their voices to be heard above all the surrounding noise. To lower the sound levels, it is important to use sound absorbers of the highest quality.

Sound propagation

Sound propagation is defined as how much the sound level in a room decreases by distance, measured in decibel per distance doubling. Stopping sound from spreading and making sound levels decrease faster are key aspects of creating good room acoustic comfort.

Articulation Class (AC) is a classification of suspended ceilings, according to ASTM E-1110. A high classification means that more sound is absorbed early and increases privacy. An AC value of 180 is good in a space where background noise and noise levels are the main issue, while an AC value of 200 is preferable in an open-plan office space, where it is important to stop specific (speech) sounds from spreading and disturbing people close by.

Speech clarity (C_{50})

Wherever people are, there is communication. For this reason, it is important to choose sound absorbing products that enhance communication and make it easy to hear and understand what is being said. Speech clarity (C_{50}) measures how well speech is perceived in a space. The higher the value, the better the speech clarity.

Reverberation time (T_{20})

Reverberation time is used when measuring basic acoustic qualities of a room. Reverberation time is defined as the time it takes for the sound pressure level to decrease by 60 dB after the sound source has been terminated. Rooms where speech intelligibility and comfort are in demand, will often require a shorter reverberation time.

INDOOR AIR QUALITY

Today we spend more than 90% of our time indoors. Consequently, the quality of the indoor air impacts us enormously with regard to both health and performance.

Indoor air pollution can be caused by chemicals that are released from the materials used in the interior. These are called Volatile Organic Compounds (VOCs).

Building materials can be significant sources of VOCs. Thus, it is crucial to choose products with low emissions. It is also important to make sure that the chosen products do not contain any pollutants that negatively affect health or performance.

The VOC content of Ecophon products is tested by external laboratories in accordance with European regulations. The results of these tests are shown by means of emission labels.

ENVIRONMENTAL FOOTPRINT

In order to get a transparent and scientific view of a product's environmental impact, Ecophon performs a Life Cycle Assessment (LCA) for all products. The assessment takes every step of the product's life into account, from the harvesting of raw materials to production and end of life.

Life Cycle Assessments of Ecophon products are conducted in line with ISO 14040 and give a fully transparent overview of our environmental impact. The results are presented in standardised documents called Environmental Product Declarations (EPD).

An EPD is a type III environmental declaration. This means it is always revised and certified by a third party. Ecophon EPDs are done in compliance with ISO 14025 and EN 15804. The third-party verification is performed by the Swedish environmental institute IVL.

FIRE SAFETY

The fire safety requirements for suspended ceilings depend on the type of room and the building where they are installed. Detailed requirements can be found in your national building regulations.

However, two general requirements can be identified as crucial with respect to suspended ceilings. They both regard the early stages of fire:

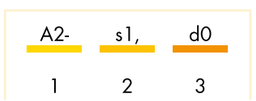
1. Suspended ceilings should only make a negligible contribution to the fire development and to the production of smoke. This is fulfilled by using a ceiling consisting of materials and surface linings complying with at least Euroclass B-s1, d0.

2. Suspended ceilings should not break and/or collapse during the early stages of the fire. To pass this requirement a ceiling system should be able to withstand a heat exposure of approx. 300°C.

The European fire testing system – Euroclass
The reaction to fire classification system of ceiling products in Europe is based on the Euroclass system, as defined in EN 13501-1. There are 39 classes grouped in 7 main levels; A1, A2, B, C, D, E and F. A1 is the best.

Most of the classes also include an additional classification regarding smoke production and the occurrence of flaming droplets/particles.

- **The classes for smoke are s1, s2 and s3. S1 is the best.**
- **The classes for flaming droplets and particles are d0, d1 and d2. D0 is the best.**



1 = Main class
2 = Smoke production
3 = Occurrence of flaming droplets/particles

All Ecophon Hygiene™ products comply with Euroclass A2-s1,d0

HUMIDITY RESISTANCE

Ceiling producers must ensure that the tiles, when installed, are sufficiently strong to support their own weight, as well as any additional point/linear/ distributed load.

This is done by testing Flexural Tensile Strength (FTS), according to EN 13964:2014 (Annex F for ceiling tiles and Annex J for Baffles), in determined conditions and classes according to Table 8, EN 13964:2014.

Specific product information can be found on the respective product pages at Ecophon.com, and in their respective Declaration of Performance.

TABLE 8, EN 13964:2014

CLASS	CONDITIONS
A	Building components exposed to varying relative humidity up to 70 % and varying temperature up to 25 °C but without corrosive pollutants.
B	Building components exposed to varying relative humidity up to 90 % and varying temperature up to 30 °C but without corrosive pollutants.
C	Building components exposed to varying relative humidity up to 95 % and varying temperature up to 30 °C and accompanied by a risk of condensation but without corrosive pollutants.
D	More severe than the above.

VISUAL APPEARANCE

Visual appearance and light have a strong impact on the overall look and feel of a room. Lighter surfaces also create good conditions for costefficient lighting.

Light reflectance values for ceilings
The light reflectance of a surface is expressed as a percentage, and states how much of the light is reflected back. In order to get the best efficiency, both for incident daylight and lighting, the ceiling's light reflectance should be high.

Light Reflectance Values are measured in accordance with the standard BS 8493:2008+A1:2010. Measurement values are evaluated with CIE 10-degree Standard Observer (1964) and CIE Standard Illuminant D65.

Gloss
The gloss of a surface means to what extent the surface will reflect impinging light without scattering it. Gloss is expressed as a value for a specific angle of incidence: 20°, 60° or 85°. The gloss value is normally between 0 and 100, where under 10 is low gloss, 10-70 is medium gloss and above 70 is high gloss. Gloss is evaluated according to relevant standards such as ISO 2813 and ASTM D 523.

SURFACE ENDURANCE

To ensure the durability of the surface after repeated cleaning, specific Ecophon products are evaluated according to ISO 11998:2006 (Determination of wet-scrub resistance and cleanability of coatings). The evaluation is done after 200 scrubbing cycles with a soft microfibre cloth made of minimum 70% polyester.

MOULD AND BACTERIA RESISTANCE

Ecophon products are tested to ensure they do not serve as a natural breeding medium for mould and bacteria. The tests are done according to ISO 846:1997 methods A (fungal growth) and C (bacteria). The ISO 846 standard classifies materials from Class 0 (no growth of microorganisms) to Class 5 (heavy growth of microorganisms). All Ecophon Hygiene™ products are compliant with Class 0 or Class 1. Specific product information can be found on the respective product pages at ecophon.com.

ISO 846, Method A
This is a method for testing fungal growth. The material is exposed to the elements below, and then evaluated and measured.

- **Paecilomyces variotii**
- **Penicillium funiculosum**
- **Aspergillus niger**
- **Gliocladium virens**
- **Chaetomium globosum**

ISO 846, Method C
This is a method for testing resistance to bacteria. The material is exposed to the element below, and then evaluated and measured.

- **Pseudomonas aeruginosa**

CLEAN ROOM

All Ecophon Hygiene™ products are classified according to ISO 14644-1:2015 (Classification of air cleanliness by particle concentration). This is to ensure their compatibility with clean room requirements, in terms of the number of airborne particles.

DEFINITION OF CLASSES ACCORDING TO ISO 14644-1:2015

ISO CLASS	PARTICLE SIZE					
	> 0.1 µm	> 0.2 µm	> 0.3 µm	> 0.5 µm	> 1 µm	> 5 µm
ISO Class 1	10	2	–	–	–	–
ISO Class 2	100	24	10	4	–	–
ISO Class 3	1,000	237	102	35	8	–
ISO Class 4	10,000	2,370	1,020	352	83	–
ISO Class 5	100,000	23,700	10,200	3,520	832	29
ISO Class 6	1,000,000	237,000	102,000	35,200	8,320	293
ISO Class 7	–	–	–	352,000	83,200	2,930
ISO Class 8	–	–	–	3,520,000	832,000	29,300
ISO Class 9	–	–	–	35,200,000	8,320,000	293,000

All Ecophon Hygiene™ products are also tested to ensure their compatibility with the requirements of the standard NF S 90-351 (Healthcare institutions — Controlled environment areas — Requirements for airborne contamination control).

The standard defines several risk zones, where zone 4 has the highest demands. For a product to be classified for use in a certain risk zone, it needs to be tested for particle emission according to ISO 14644-1, particle elimination kinetics and air microbiology control.

DEFINITION OF CLASSES ACCORDING TO NF S 90-351

CLASS RISK	ISO CLASS	PARTICLE ELIMINATION KINETIC	MICROBIOLOGICAL CLEANLINESS CLASS
4	ISO 5	$CP_{(0.5)}5$	M1
3	ISO 7	$CP_{(0.5)}10$	M10
2	ISO 8	$CP_{(0.5)}20$	M100

All Ecophon Hygiene™ products are applicable in risk zone 4 areas.

Particle elimination kinetics (particular classes)
Particle elimination has to do with how quickly particles are released after making contact with the product. For instance, CP(0.5)5 means that when particles with a 0.5µm diameter are projected onto the product, 90% of them are released within 5 minutes.

The standard NF S 90-351 defines three classes, according to whether it takes 5, 10 or 20 minutes to release 90% of the particles.

However, some of our Ecophon Hygiene™ products meet requirements that would be “CP(0.5)1”, meaning 90% of the particles are released within one minute. This indicates premium particle repellence properties.

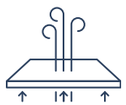
CLASSES KINETICS OF PARTICLE REMOVAL OF 0,5µm	TIME REQUIRED TO OBTAIN 90% OF REDUCTION (MIN)
$CP_{(0.5)}20$	≤ 20
$CP_{(0.5)}10$	≤ 10
$CP_{(0.5)}5$	≤ 5

Air microbiology control
The testing is done by contaminating the material and then, after incubation, sampling air and surface to check that the material does not allow microbial proliferation. Ecophon Hygiene™ products have been tested for the following species:

- **Staphylococcus aureus MRSA**
- **Escherichia coli**
- **Candida albicans**
- **Aspergillus brasiliensis**

DEFINITION OF MICROBIOLOGICAL CLEANLINESS CLASSES

MICROBIOLOGICAL CLEANLINESS CLASS	MAXIMUM CONCENTRATION IN NUMBER OF VIABLE PARTICLES PER CUBIC METER OF AIR (UFC/M3)
M1	≤1
M10	10
M100	100

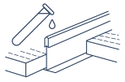


AIR PERMEABILITY

Some areas, such as clean rooms, require the indoor air pressure to be controlled. Some Ecophon systems are designed to limit air leakage at pressure differentials. The declared values are valid for pressure differentials up to 50 Pa at both overpressure and negative pressure, when installed according to the recommended installation diagram. EN ISO 9972:2015 (Thermal performance of buildings. Determination of air permeability of buildings. Fan pressurization method).

CE-MARKING

In compliance with the Construction Product Regulation (CPR 305/2011), Ecophon ceiling systems are CE marked according to the European harmonised standard EN13964:2014. This standard consolidates methods for product testing, product classification and performance declaration for suspended ceilings. To improve transparency in terms of product performance, CE marked construction products all have their own Declaration of Performance (DOP). This enables customers and users to easily compare performance of products available on the European market.



CORROSION

The corrosion level of the environment to which building structures are exposed, is classified according to ISO 12944-2 (Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 2: Classification of environments).

All Ecophon grid systems are developed to meet the basic level of requirements (C1). Specific products meet higher requirements of the standard (C3 and/or C4):

- **C1: dry and ventilated environments**
- **C3: humid environments with low pollution**
- **C4: wet environments with high pollution**

Connect™ items are classified according to ISO 12944-2, after tests are performed in accordance with NORDTEST method NT MAT 003. This method specifies stricter testing than ISO 12944-2 requirements.

Additionally, Ecophon grid systems are classified according to EN 13964:2014 to ensure their compatibility with the different classes of exposure defined by the standard. This information can be found in the Declaration of Performance for the Connect products.

Always ensure that the corrosion class of the ceiling grids is compatible with the desired cleaning protocol and the cleaning products used for the ceiling system.

A SOLUTION
FOR EVERY ROOM

Spaces requiring a high level of cleanliness can vary much in type. A hospital has very different needs compared to a Clean Room Industry. And the Pharmaceutical Industry varies from the Food & Beverage Industry.

However, if the acoustics are not well-designed in any of these environments, they all have one thing in common: a poor sound environment. If the ceiling, floor, and walls of a space consist of hard, sound-reflecting surfaces, there is nothing to stop sound from spreading. The sound will bounce off all the hard surfaces and spread far creating a background noise that is stressful and tiring for everyone in the space. Being able to communicate clearly can become challenging and both the speaker and the listener's comfort will be compromised.

Since all these spaces differ from one another, appropriate solutions to the noise can vary. For instance, in a bottling factory, the main goal will probably be to reduce noise levels dramatically, while the most important thing in an operating room is to increase speech clarity so medical staff can communicate clearly.

EASY METHOD FOR REACHING THE OPTIMAL SOLUTION

In order to design spaces where people can perform a given activity to the best of their ability and feel comfortable while doing it, Ecophon has developed Activity Based Acoustic Design. In practice, this is a method that defines spaces from three perspectives – activity, people and space – and finds the common ground where all these perspectives benefit. The optimal acoustic products are then identified to meet the acoustic and hygiene needs in the space.

On the following pages you will find product recommendations for some areas where both acoustics and hygiene are important. The hygiene demands presented are not complete, and should be seen as guidelines. For all product properties, please see the respective product pages.

1 ACTIVITY

What sound environment is needed to support the activities in this space? Will concentrated focus work be important, or spoken communication? Or perhaps lively interaction between people? Consider how the activities may require different acoustic support.

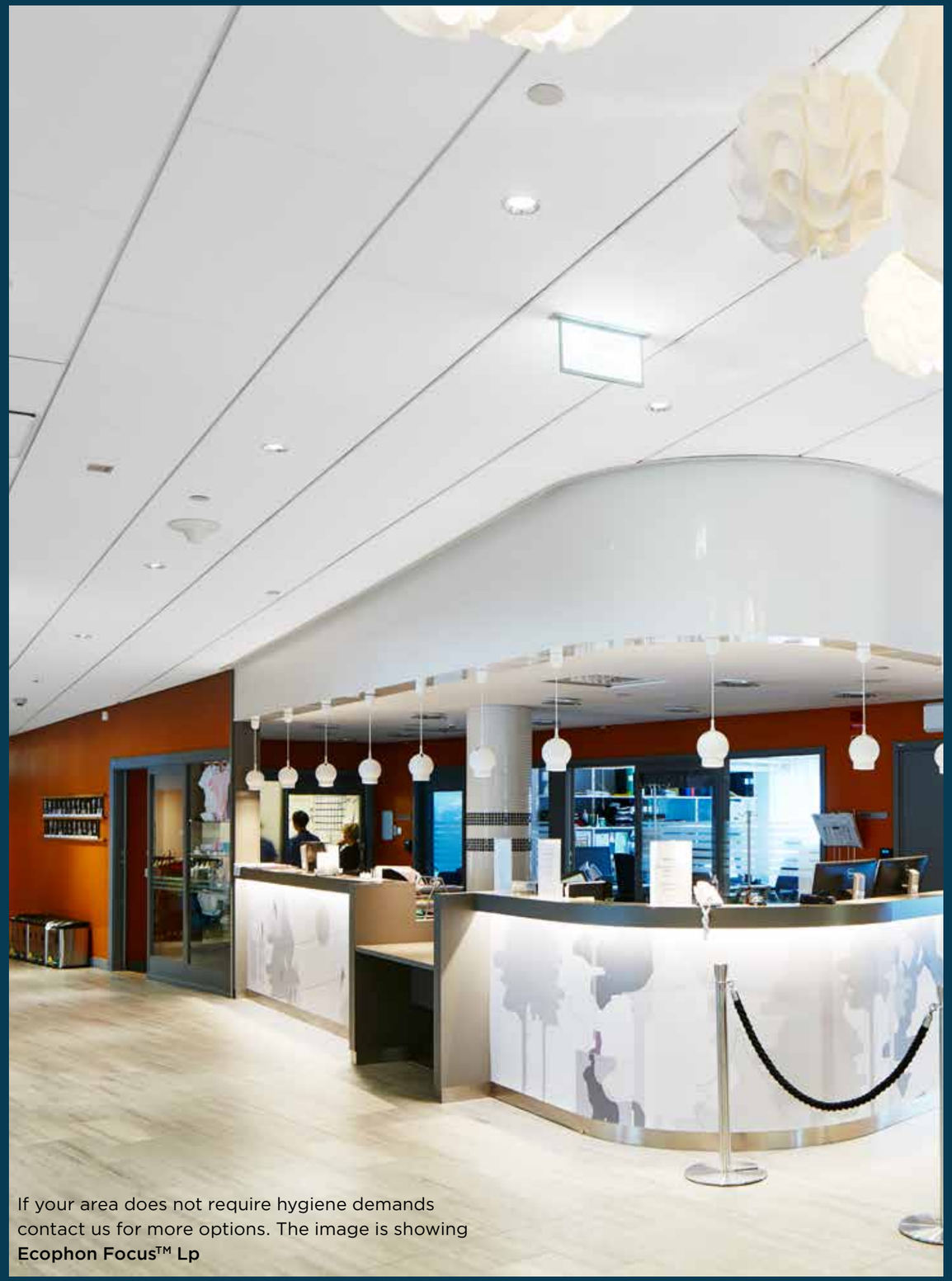
2 PEOPLE

What considerations should be taken for the people using this space? Age may play a role. Will they have challenging hearing impairments, be very young or not be fluent in the language spoken? Is it probable that they will be stressed or feeling anxious? A calming environment can influence their levels of stress or feelings of security.

3 SPACE

How will the sound environment be affected by the space outlining and adjacent rooms? Will there be a need for various acoustic zones, or will the space be situated close to noisy activities? Consider how the space may challenge or support a good sound environment.

If your area does not require hygiene demands contact us for more options. The image is showing **Ecophon Focus™ Line & Ecophon Focus™ Ds.**



If your area does not require hygiene demands contact us for more options. The image is showing **Ecophon Focus™ Lp**

PUBLIC AREAS

The ideal entrance to a healthcare facility is inviting, comfortable and stress-free. Visitors, patients and their relatives, and staff should easily find their way and orient themselves. The sound environment should allow for having conversations and asking for directions and not be overwhelming and disturbing. Waiting areas and public corridors should be acoustically designed to secure comfort and privacy.

A canteen or cafeteria should offer a calming space to find relief in, a pause to relax with refreshments and perhaps the company of others. Speaking and listening comfort must be inclusive so that everyone, including people with hearing impairments, can participate in the conversation.

The hospital's main entrance is typically intended to receive the most traffic of people and ensure acoustic comfort and calming environments matter to the experience of the visit.

- ENTRANCES
- WAITING AREAS
- PUBLIC CORRIDORS
- CAFETERIAS

PRODUCT RECOMMENDATION

Ecophon Hygiene Clinic™ A	Mould & bacteria resistant, UV-C Cleaning	42
Ecophon Hygiene Clinic™ E		
Ecophon Hygiene Meditec™ A	Mould & bacteria resistant, resist disinfection chemicals	46
Ecophon Hygiene Meditec™ E		
Ecophon Hygiene Performance™ A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof, endure wet cleaning including high pressure	58
Ecophon Hygiene Performance™ B	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof	
Ecophon Hygiene Performance™ Care Wall		

If your room specifications do not include specific hygiene properties, visit www.ecophon.com for other options.

CLINICAL AREAS

Patients need a peaceful, stress-free environment to promote healing, rest, and recovery. Undergoing examinations or treatments can be challenging and a feeling of security and privacy can support and strengthen a person during stressful times. Enabling good sleep to enhance wellbeing and recovery is a priority and the acoustic design needs to promote such an environment.

Nurse stations are often placed in an open setting in conjunction with corridors and waiting areas. It requires both openness to patients and visitors as well as a need for privacy as sensitive information is being handled during staff meetings and handovers.

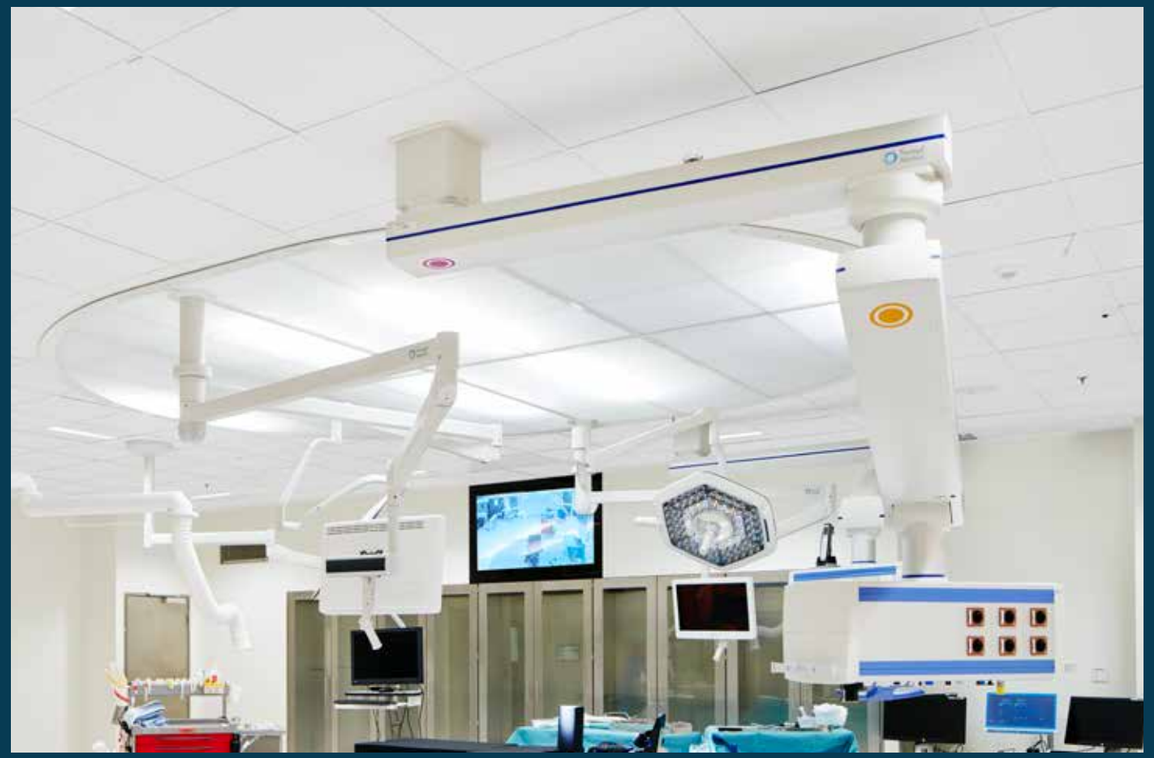
In corridors and waiting areas attention needs to be given to not only lowering sound levels but also sound propagation. The use of sound-absorbing wall application should be considered as a supplement to a ceiling installation.

- PATIENT & TREATMENT ROOMS
- NURSE STATIONS
- CORRIDORS
- WAITING AREAS

PRODUCT RECOMMENDATION

Ecophon Hygiene Clinic™ A	Mould & bacteria resistant, UV-C Cleaning	42
Ecophon Hygiene Clinic™ E		
Ecophon Hygiene Meditec™ A	Mould & bacteria resistant, resist disinfection chemicals	46
Ecophon Hygiene Meditec™ E		
Ecophon Hygiene Protec™ A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, particle repellence	50
Ecophon Hygiene Protec™ Ds		
Ecophon Hygiene Performance™ A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof, endure wet cleaning including high pressure	56
Ecophon Hygiene Performance™ B	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof	
Ecophon Hygiene Performance™ Ds		
Ecophon Hygiene Performance™ Care Wall		

If your room specifications do not include specific hygiene properties, visit www.ecophon.com for other options.



SPECIALIST AREAS

Specialist areas may require even higher hygiene standards and the strain on both patients and staff can be significantly more demanding. The acoustic challenges can be profound and need appropriate attention.

Operating rooms may encounter both repetitive high levels of noise and speech intelligibility can be compromised. Patients in intensive care units are often very vulnerable and exposed to sound and noise both day and night. In the emergency room decisions and treatment must be made quickly without hesitation and a quieter sound environment can reduce the overall stress on all.

Laboratories can require a high level of cleanliness and the technical equipment contributes to increasing the sound pressure levels. To enable a good sound environment the product choice needs proper consideration.

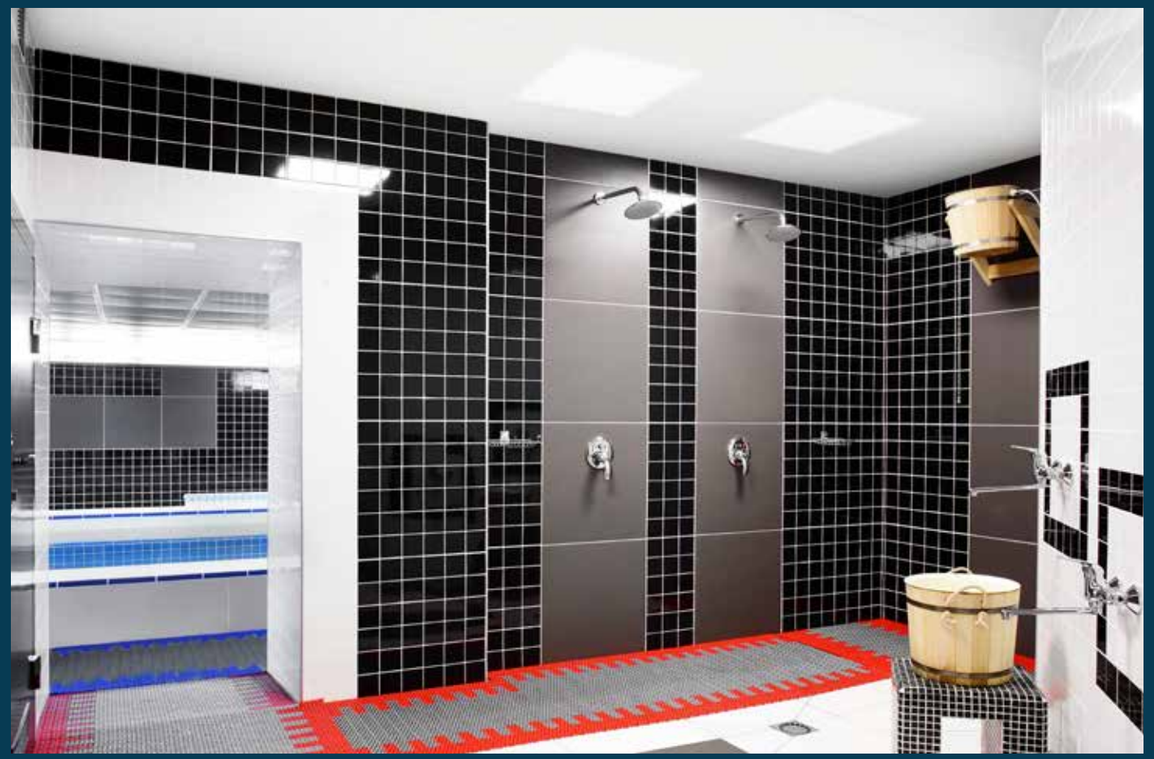
- OPERATING THEATRES
- INTENSIVE CARE
- EMERGENCY ROOMS
- LABORATIORIES

PRODUCT RECOMMENDATION

Ecophon Hygiene Protec™ A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, particle repellence	50
Ecophon Hygiene Protec™ Ds		
Ecophon Hygiene Protec™ Air A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, particle repellence, air pressure demands	
Ecophon Hygiene Performance™ A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof, endure wet cleaning including high pressure	56
Ecophon Hygiene Performance™ Plus A		
Ecophon Hygiene Performance™ B	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof	
Ecophon Hygiene Performance™ Ds		
Ecophon Hygiene Performance™ Care Wall		
Ecophon Hygiene Advance™ A	Mould & bacteria resistant, resist wide range of disinfection chemicals, steam cleaning, easy to clean, splash proof, endure daily wet cleaning including high pressure, UV-C cleaning, air pressure demands*	70
Ecophon Hygiene Advance™ Wall		

* Ecophon Hygiene Advance™ A

If your room specifications do not include specific hygiene properties, visit www.ecophon.com for other options.



HUMID ENVIRONMENTS

- SWIMMINGPOOL AREAS
- HUMID AREAS & SHOWERS

Swimming pool areas are often very lively and noisy places where sound builds up and bounces off the surrounding hard surfaces. These environments are not only for fun and games but are also workplaces for the staff and using sound absorption will provide a more comfortable sound environment.

These environments can be highly corrosive due to chloride pollution. Therefore, all grids and accessories must be designed and tested to be suitable for areas classified as C4 according to the corrosion standards in EN-ISO 12944-2.

Other areas need solutions with a tolerance for high humidity, such as showers, disinfection rooms or sterile units.

PRODUCT RECOMMENDATION

Ecophon Hygiene Performance™ A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof, endure wet cleaning including high pressure	56
Ecophon Hygiene Performance™ Ds	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof	
Ecophon Hygiene Performance™ Baffle	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof, endure wet cleaning including high pressure	
Ecophon Hygiene Performance™ Wall		
Ecophon Hygiene Advance™ A	Mould & bacteria resistant, resist wide range of disinfection chemicals, steam cleaning, easy to clean, splash proof, endure daily wet cleaning including high pressure, UV-C cleaning	70
Ecophon Hygiene Advance™ Baffle		
Ecophon Hygiene Advance™ Wall		

Additional swimming pool offers can be found in our application guide for pool environment on Ecophon.com

If your room specifications do not include specific hygiene properties, visit www.ecophon.com for other options.

FOOD HANDLING

- PREPARATION, STORAGE, PORTIONING
- FRYING & BOILING
- FOOD INDUSTRY

Food needs to be safely prepared under hygiene conditions. Depending on the space being used for cooking food or merely reheating and handling prepared food the need for cleaning agents and methods on the absorbing tiles can differ.

Kitchens and restaurants often struggle with high noise levels in the preparation areas. And located close to the diner area noise from the kitchen can disturb the diners. Acoustic tiles need to be chosen to meet both appropriate cleaning methods and be highly efficient in reducing noise. Consistent high levels of noise can increase stress for the employees, cause fatigue and create communication problems.

Production environments in the food industry typically contain hard surfaces and open spaces to permit good food hygiene practices. The production lines for preparation, filling, packing, freezing and preservation of food generate a high level of noise, which builds up by the hard surface materials used. Sound absorption should also include wall-mounted tiles as complementary to ceiling and/or free-hanging units.

PRODUCT RECOMMENDATION

Ecophon Hygiene Performance™ A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof, endure wet cleaning including high pressure	56
Ecophon Hygiene Performance™ Plus A		
Ecophon Hygiene Performance™ Baffle		
Ecophon Hygiene Performance™ Wall		
Ecophon Hygiene Advance™ A	Mould & bacteria resistant, resist wide range of disinfection chemicals, steam cleaning, easy to clean, splash proof, endure daily wet cleaning including high pressure, UV-C cleaning, air pressure demands*	70
Ecophon Hygiene Advance™ Baffle		
Ecophon Hygiene Advance™ Wall		

* Ecophon Hygiene Advance™ A

If your room specifications do not include specific hygiene properties, visit www.ecophon.com for other options.

INDUSTRY

- ELECTRONIC
- PHARMACEUTICAL
- BEVERAGE

In electronics factories, the walls, floors, and ceilings consist of hard surfaces to facilitate cleaning. Sound pressure levels are often high, and the continuous noise affects employees negatively, resulting in reduced concentration and lowered productivity. When installing sound-absorbing products they need to comply with the ISO 14644-1 standard regarding air particle levels. Also, possible particle repellency features, cleaning agents and cleaning methods used.

Effective cleaning of premises is also crucial in the pharmaceutical industry. The hard, bare surfaces and materials combined with loud mechanical processes create a noisy environment. At the same time, any sound absorbing system installed must meet the high hygiene requirements and comply with GMP classifications and ISO 14644-1.

In beverage factories very demanding acoustic conditions may occur with bottling lines, filling lines and conveyor belts in open spaces as it generates very high levels of noise. These settings have hard, sound-reflecting surfaces that add to the noisy environment. High levels of cleanability of sound absorbers apply.

PRODUCT RECOMMENDATION

Ecophon Hygiene Protec™ A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, particle repellence	50
Ecophon Hygiene Protec™ Ds		
Ecophon Hygiene Protec™ Air A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, particle repellence, air pressure demands	
Ecophon Hygiene Performance™ A	Mould & bacteria resistant, resist disinfection chemicals, steam cleaning, easy to clean, splash proof, endure wet cleaning including high pressure	56
Ecophon Hygiene Performance™ Plus A		
Ecophon Hygiene Performance™ Baffle		
Ecophon Hygiene Performance™ Wall		
Ecophon Hygiene Advance™ A	Mould & bacteria resistant, resist wide range of disinfection chemicals, steam cleaning, easy to clean, splash proof, endure daily wet cleaning including high pressure, UV-C cleaning, air pressure demands*	70
Ecophon Hygiene Advance™ Baffle		
Ecophon Hygiene Advance™ Wall		

* Ecophon Hygiene Advance™ A

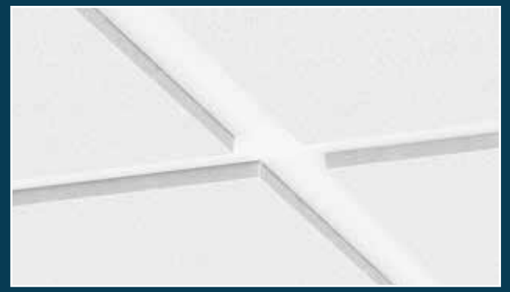
If your room specifications do not include specific hygiene properties, visit www.ecophon.com for other options.

If your area does not require hygiene demands contact us for more options.
The image is showing **Ecophon Solo™ Rectangle.**
© www.makowski.co

PRODUCTS
& SYSTEM PROPERTIES

ACOUSTICS, TECHNICAL PROPERTIES AND INSTALLATION DIAGRAMS

ECOPHON
HYGIENE CLINIC™



DRY AREAS – DRY AND WET WIPING

Ecophon Hygiene Clinic™ are class A sound-absorbing ceilings for dry areas.

The absorbers have low emission levels, thus ensuring high indoor air quality. They are resistant to mould and bacteria growth and withstand HPV cleaning.

SHARED PROPERTIES – ECOPHON HYGIENE CLINIC™

Accessibility	Minimum demounting depth according to installation diagrams	Demountable
Visual appearance	Surface: Akutex™ T	White 500, nearest NCS colour sample S 0500-N, Light reflectance: 84%
Fire safety	Classification (EN 13501-1)	Class: A2-s1,d0

DIFFERENTIATING PROPERTIES – ECOPHON HYGIENE CLINIC™

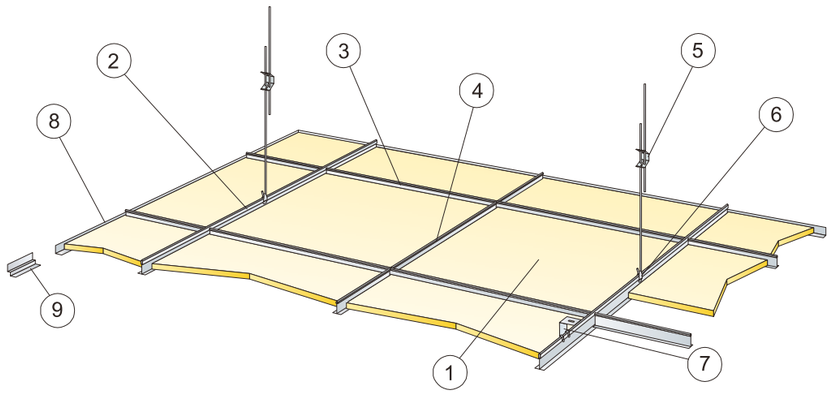
		A	E
Range	Installation methods		
	Size, thickness (mm)	600x600x15 1200x600x15	600x600x15 1200x600x15
	Visual experience	Visual grid	Recessed grid
	Edge treatment	Primed	Painted
	Weight of system (approx.)	2.5 kg/m²	2.5 kg/m²
	Back treatment of the tile	Glass tissue	Glass tissue
Acoustic	Sound absorption (α_w)	0.95	1.00
Cleanability	Dusting & vacuum cleaning	Daily	Daily
	Wet wiping	Weekly	Weekly
Advanced cleanability	Hydrogen peroxide vapour	●	●
	Compatible with UV-C disinfection (BIFMA HCF 8.1-2019)	●	●
EPD life cycle stages A1-C4	Kg CO_2 equiv/m² (ISO 14025, EN 15804)	2,55	2,19
Humidity resistance	Dry area system, compatible with corrosion class C1 areas	●	●
Clean room		Clean room classification ISO 4 (ISO 14644-1)	
		Zone 4 (NF S 90-351)	
		Bacteriological class M1 (NF S 90-351)	
		Kinetic class for particle elimination $CP_{(0,5)}5$ (NF S 90-351)	
Mould and bacteria resistance		Mould, Class 0, method A (ISO 846)	
		Bacteria, Class 0, method C (ISO 846)	

ÉMISSIONS DANS L'AIR INTÉRIEUR A+ A+ A B C

INDOOR AIR COMFORT eurofins GOLD CERTIFIED PRODUCT

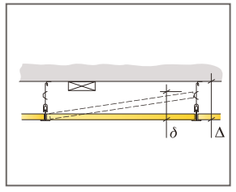
For the latest information go to www.ecophon.com or contact your nearest Ecophon representative.

INSTALLATION DIAGRAM (M338) FOR ECOPHON HYGIENE CLINIC™ A

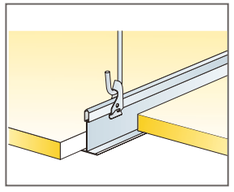


QUANTITY SPECIFICATION (EXCL. WASTAGE)

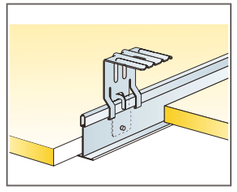
		Size, mm	
		600x600	1200x600
1	Hygiene Clinic A	2,8/m²	1,4/m²
2	Connect T24 Main Runner, installed at 1200 mm centres (max distance from wall 300 mm)	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee, L=1200 mm, installed at 600 mm centres	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee, L=600 mm	0,9m/m²	-
5	Connect Adjustable Hanger, installed at 1200 mm centres (max. distance from wall 600 mm)	0,7/m²	0,7/m²
6	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
7	For direct installation: Connect Direct Bracket, installed at 1200 mm centres	0,7/m²	0,7/m²
8	Connect Angle Trim, fixed at 300 mm centres	as required	as required
9	Connect Shadow-line Trim, fixed at 300 mm centres	as required	as required
	Δ Min. overall depth of system, with adjustable hanger: 100 mm, with direct bracket: 50 mm	-	-
	δ Min. demounting depth: 120 mm	-	-



See Quantity Specification



Suspension with Connect Adjustable Hanger and Connect Hanger Clip

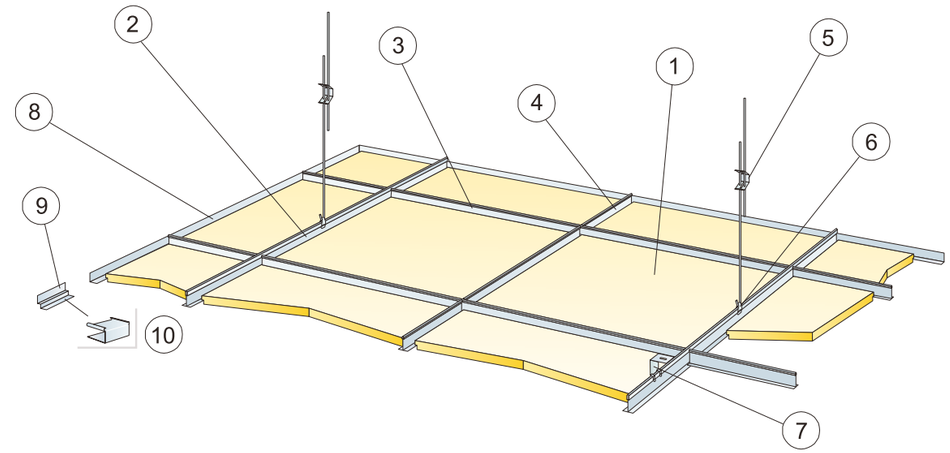


Suspension with Connect Direct Bracket

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x15	50	160
1200x600x15	50	160

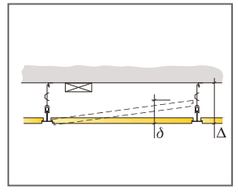
Live load/load bearing capacity

INSTALLATION DIAGRAM (M339) FOR ECOPHON HYGIENE CLINIC™ E

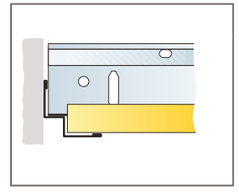


QUANTITY SPECIFICATION (EXCL. WASTAGE)

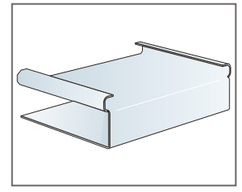
		Size, mm	
		600x600	1200x600
1	Hygiene Clinic E	2,8/m²	1,4/m²
2	Connect T24 Main Runner, installed at 1200 mm centres (max distance from wall 300 mm)	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee, L=1200 mm, installed at 600 mm centres	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee, L=600 mm	0,9m/m²	-
5	Connect Adjustable Hanger, installed at 1200 mm centres (max. distance from wall 600 mm)	0,7/m²	0,7/m²
6	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
7	For direct installation: Connect Direct Bracket, installed at 1200 mm centres	0,7/m²	0,7/m²
8	Connect Angle Trim, fixed at 300 mm centres	as required	as required
9	Connect Shadow-line Trim, fixed at 300 mm centres	as required	as required
10	Connect E-plug (for Connect Shadow-line Trim)	as required	as required
	Δ Min. overall depth of system, with adjustable hanger: 110 mm, with direct bracket: 60 mm	-	-
	δ Min. demounting depth: T15: 110 mm, T24: 90 mm	-	-



See Quantity Specification



Straight cut and T-profile on top of Connect Shadow-line Trim



Connect E-plug

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x15	50	160
1200x600x15	50	160

Live load/load bearing capacity

ECOPHON

HYGIENE MEDITEC™

DRY AREAS – DISINFECTION ON A REGULAR BASIS

Ecophon Hygiene Meditec™ are class A sound-absorbing ceilings for dry areas where disinfection and/or cleaning is required regularly.

The surface is resistant to common detergents and disinfectants. The absorbers have low emission levels, thus ensuring high indoor air quality. They are resistant to mould and bacteria growth and withstand HPV cleaning.

SHARED PROPERTIES – ECOPHON HYGIENE MEDITEC™

Accessibility	Minimum demounting depth according to installation diagrams	Demountable
Visual appearance	Surface: Akutex™ TH	White 500, nearest NCS colour sample S 0500-N, Light reflectance: 84%
Fire safety	Classification (EN 13501-1)	Class: A2-s1,d0

DIFFERENTIATING PROPERTIES – ECOPHON HYGIENE MEDITEC™

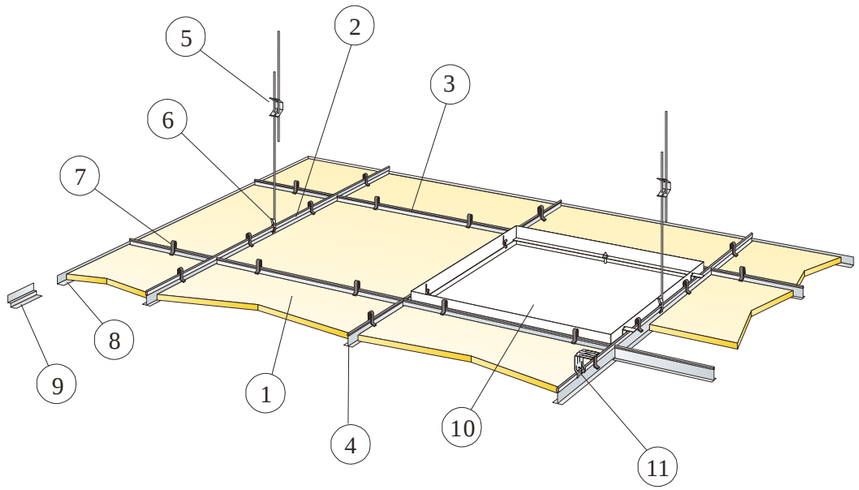
		A	E
Range	Installation methods		
	Size, thickness (mm)	600x600x15 1200x600x15	600x600x15 1200x600x15
	Visual experience	Visual grid	Recessed grid
	Edge treatment	Primed	Painted
	Weight of system (approx.)	2.5 kg/m²	2.5 kg/m²
	Back treatment of the tile	Glass tissue	Glass tissue
Acoustic	Sound absorption (α_w)	0.95	1.00
Cleanability	Dusting & vacuum cleaning	Daily	Daily
	Wet wiping	Weekly	Weekly
Advanced cleanability	Hydrogen peroxide vapour	●	●
Surface endurance	Withstand 200 cycles (ISO 11998)	●	●
Chemical resistance	Resistant to disinfection chemicals (ISO 11998)	2/year	2/year
EPD life cycle stages A1-C4	Kg CO_2 equiv/m² (ISO 14025, EN 15804)	2,71	2,37
Humidity resistance	Dry area system, compatible with corrosion class C1 areas	●	●
Clean room		Clean room classification ISO 4 (ISO 14644-1) and Zone 4 (NF S 90-351)	
		Bacteriological class M1 (NF S 90-351)	
		Kinetic class for particle elimination $CP_{(0,5)}5$ (NF S 90-351)	
Mould and bacteria resistance		Mould, Class 0, method A (ISO 846)	
		Bacteria, Class 0, method C (ISO 846)	

CHEMICALS & CONCENTRATION (TESTED ACCORDING TO ISO 11998)

CHEMICALS	Ethanol	Chlorine	Virkon S	Isopropanol
CONCENTRATION	70%	2,5%	1%	70%

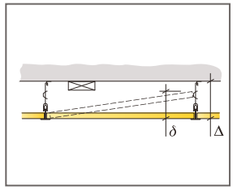
For the latest information go to www.ecophon.com or contact your nearest Ecophon representative.

INSTALLATION DIAGRAM (M255) FOR ECOPHON HYGIENE MEDITEC™ A

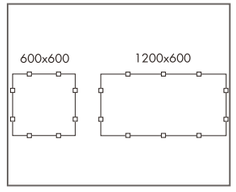


QUANTITY SPECIFICATION (EXCL. WASTAGE)

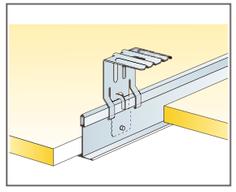
		Size, mm	
		600x600	1200x600
1	Hygiene Meditec A	2,8/m²	1,4/m²
2	Connect T24 Main Runner, installed at 1200 mm centres (max distance from wall 300 mm)	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee, L=1200 mm, installed at 600 mm centres	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee, L=600 mm	0,9m/m²	-
5	Connect Adjustable Hanger, installed at 1200 mm centres (max. distance from wall 600 mm)	0,7/m²	0,7/m²
6	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
7	Connect Universal Clip	11/m²	7/m²
8	Alt. Connect Angle Trim, fixed c300	as required	as required
9	Alt. Connect Shadow-line Trim, fixed c300	as required	as required
10	Connect Inspection Hatch	as required	as required
11	For direct installation: Connect Direct Bracket, installed at 1200 mm centres	0,7/m²	0,7/m²
	Δ Min. overall depth of system, with adjustable hanger and clip: 150 mm, with direct fixing without clip: 50 mm.	-	-
	δ Min. demounting depth: With clip: 150 mm. Without clip: 100 mm.	-	-



See Quantity Specification



Arrangement of clips

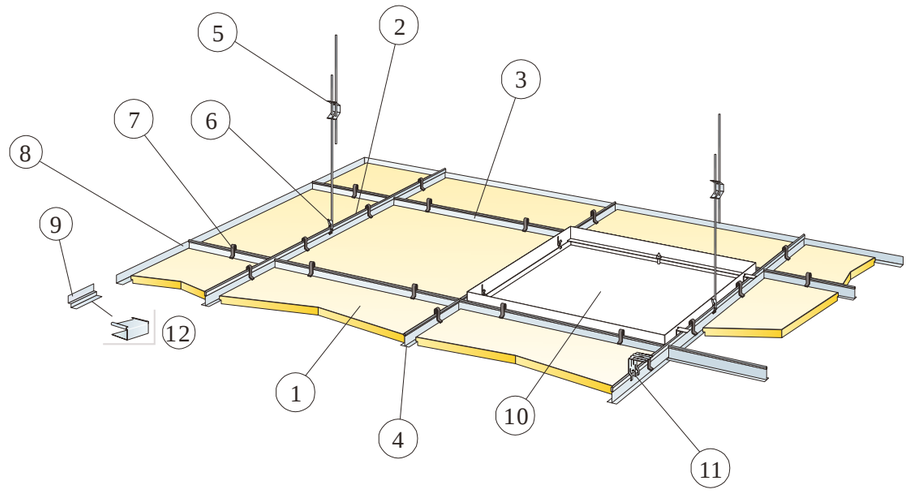


Suspension with Connect Direct Bracket

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x15	50	160
1200x600x15	50	160

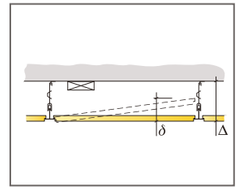
Live load/load bearing capacity

INSTALLATION DIAGRAM (M256) FOR ECOPHON HYGIENE MEDITEC™ E

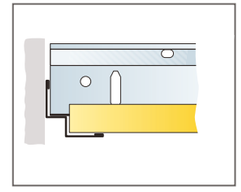


QUANTITY SPECIFICATION (EXCL. WASTAGE)

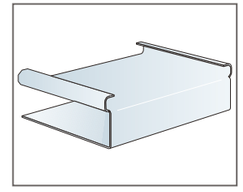
		Size, mm	
		600x600	1200x600
1	Hygiene Meditec E	2,8/m²	1,4/m²
2	Connect T24 Main Runner, installed at 1200 mm centres (max distance from wall 300 mm)	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee, L=1200 mm, installed at 600 mm centres	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee, L=600 mm	0,9m/m²	-
5	Connect Adjustable Hanger, installed at 1200 mm centres (max. distance from wall 600 mm)	0,7/m²	0,7/m²
6	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
7	Connect Universal Clip	11/m²	7/m²
8	Alt. Connect Angle Trim, fixed c300	as required	as required
9	Alt. Connect Shadow-line Trim, fixed c300	as required	as required
10	Connect Inspection Hatch	as required	as required
11	For direct installation: Connect Direct Bracket, installed at 1200 mm centres	0,7/m²	0,7/m²
12	Connect E-plug (for Connect Shadow-line Trim)	as required	as required
	Δ Min. overall depth of system, with adjustable hanger and clip: 160 mm, with direct fixing wituout clip: 60 mm.	-	-
	δ Min. demounting depth: With clip: 160 mm. Without clip: 110 mm.	-	-



See Quantity Specification



Straight cut and T-profile on top of Connect Shadow-line Trim



Connect E-plug

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x15	50	160
1200x600x15	50	160

Live load/load bearing capacity

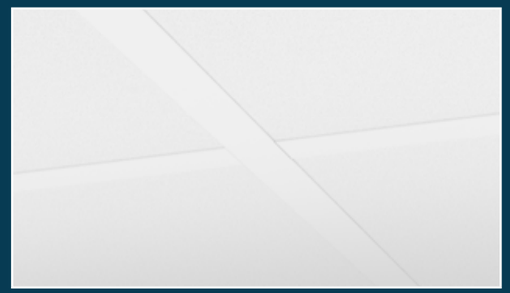
ECOPHON

HYGIENE PROTEC™

CLEAN ROOMS – DISINFECTION ON A REGULAR BASIS

Ecophon Hygiene Protec™ are particle repellent sound-absorbing ceilings for clean rooms where disinfection and/or cleaning is required regularly.

The ceilings are classified ISO 3 according to ISO 14644-1. The surface is resistant to common detergents and disinfectants. The absorbers have low emission levels, thus ensuring high indoor air quality. They are resistant to mould and bacteria growth and withstand HPV cleaning. Ecophon Hygiene Protec™ Air A is specifically designed for areas where air pressure control is required.



SHARED PROPERTIES – ECOPHON HYGIENE PROTEC™

Accessibility	Minimum demounting depth according to installation diagrams	Demountable
Visual appearance	Surface: Akutex™ HP	White 500, nearest NCS colour sample S 0500-N, Light reflectance: 84%
Fire safety	Classification (EN 13501-1)	Class: A2-s1,d0

DIFFERENTIATING PROPERTIES – ECOPHON HYGIENE PROTEC™

		A	DS	AIR A
Range	Installation methods			
	Size, thickness (mm)	600x600x20 625x625x20 1200x600x20	600x600x20 1200x600x20	600x600x20 1200x600x20 600x600x40 1200x600x40
	Visual experience	Visual grid	Concealed grid	Visual grid
	Edge treatment	Painted	Painted	Painted
	Weight of system (approx.)	3-4 kg/m²	3-4 kg/m²	3.5 kg/m², 20 mm 4.5 kg/m², 40 mm
	Back treatment of the tile	Hygiene surface	Hygiene surface	Air pressure control surface
Acoustic	Sound absorption (α_w)	0.9	0.85	0.80, 20 mm 0.90, 40 mm
Cleanability	Dusting & vacuum cleaning	Daily	Daily	Daily
	Wet wiping	Weekly	Weekly	Weekly
Advanced cleanability	Hydrogen peroxide vapour	●	●	●
	Steam cleaning	●	●	●
x200 Surface endurance	Withstand 200 cycles (ISO 11998)	●	●	●
	Back of tile withstand 200 cycles (ISO 11998)	●	●	–
Chemical resistance	Resistant to disinfection chemicals (ISO 11998)	2/year	2/year	2/year
EPD life cycle stages A1-C4	Kg CO_2 equiv/m² (ISO 14025, EN 15804)	-	7,06	4,45
Humidity resistance	Dry area system, compatible with corrosion class C1 areas	●	●	●
Clean room (Advanced)		Clean room classification ISO 3 (ISO 14644-1) and Zone 4 (NF S 90-351)		
		Bacteriological class M1 (NF S 90-351)		
		Kinetic particle elimination, $CP_{(0,5)}1$ (NF S 90-351)		
Mould and bacteria resistance		Mould, Class 0, method A (ISO 846)		
		Bacteria, Class 0, method C (ISO 846)		

Air permeability EN ISO 9972:2015	Differential pressure **(Pa)**	10 / -10	20 / -20	30 / -30	40 / -40	50 / -50
	Protec Air, A 20mm Air leak rate **m³/h/m²**	16,1 / 15,0	27,9 / 22,1	38,5 / 27,7	48,4 / 32,5	57,8 / 36,8
	Protec Air, A 40mm Air leak rate **m³/h/m²**	14,6 / 16,9	25,7 / 26,5	35,8 / 34,4	45,2 / 41,4	54,3 / 47,8

Differential pressure **(Pa)**	10 / -10	20 / -20	30 / -30	40 / -40	50 / -50
Protec Air, A 20mm Air leak rate **L/s/m²**	4,5 / 4,2	7,8 / 6,1	10,7 / 7,7	13,4 / 9,0	16,1 / 10,2
Protec Air, A 40mm Air leak rate **L/s/m²**	4,0 / 4,7	7,1 / 7,4	9,9 / 9,6	12,6 / 11,5	15,1 / 13,3

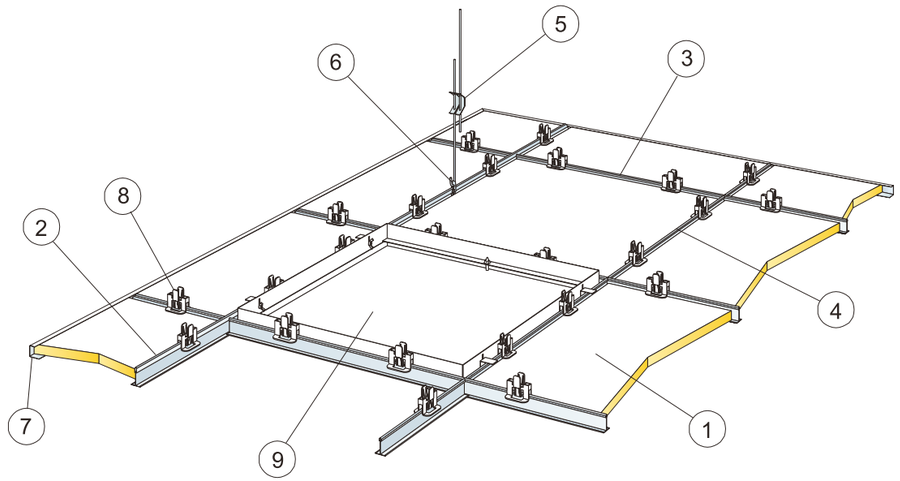
CHEMICALS & CONCENTRATION (TESTED ACCORDING TO ISO 11998)

CHEMICALS	Ethanol	Chlorine	Virkon S	Isopropanol
CONCENTRATION	70%	2,5%	1%	70%

For the latest information go to www.ecophon.com or contact your nearest Ecophon representative.

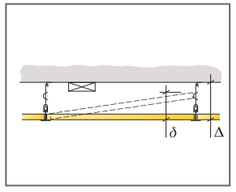
M257

INSTALLATION DIAGRAM (M257) FOR ECOPHON HYGIENE PROTEC™ A

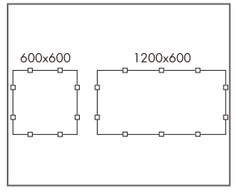


QUANTITY SPECIFICATION (EXCL. WASTAGE)

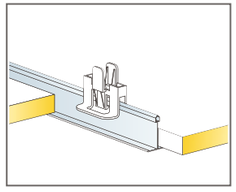
		Size, mm	
		600x600	1200x600
1	Hygiene Protec A	2,8/m²	1,4/m²
2	Connect T24 Main Runner, installed at 1200 mm centres (max distance from wall 300 mm)	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee, L=1200 mm, installed at 600 mm centres	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee, L=600 mm	0,9m/m²	-
5	Connect Adjustable Hanger, installed at 1200 mm centres (max. distance from wall 600 mm)	0,7/m²	0,7/m²
6	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
7	Connect Channel Trim, fixed c300	as required	as required
8	Connect Hygiene Clip 20	11/m²	7/m²
9	Connect Inspection Hatch	as required	as required
	Δ Min. overall depth of system: 150 mm	-	-
	δ Min. demounting depth: 150 mm	-	-



See Quantity Specification



Arrangement of clips



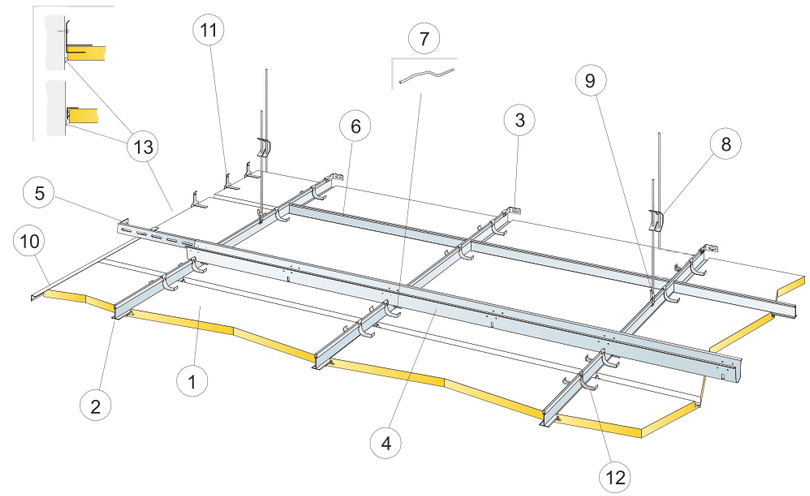
Connect Hygiene Clips for keeping tiles in position

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x20	50	160
1200x600x20	50	160

Live load/load bearing capacity

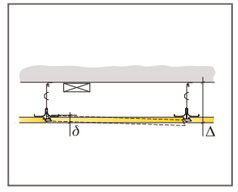
M615

INSTALLATION DIAGRAM (M615) FOR ECOPHON HYGIENE PROTEC™ DS. SUSPENDED INSTALLATION

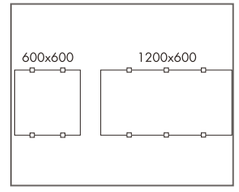


QUANTITY SPECIFICATION (EXCL. WASTAGE)

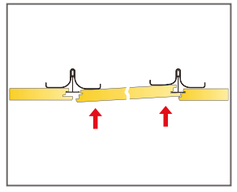
		Size, mm	
		600x600	1200x600
1	Hygiene Protec Ds	2,8/m²	1,4/m²
2	Connect Wall Bracket for T-profiles	1/suspended row of Main runner	
3	Connect Space Bar, installed at 1500 mm centres (max. distance from wall 300 mm)	0,7m/m²	0,7m/m²
4	Connect Wall Bracket, L=700 mm, for Connect Space Bar	1/row of Space bar	
5	Connect T24 Cross Tee, L=600 mm	2/row of Main runner	
6	Connect Space Bar Winch, installed one per joint Connect Main Runner/Connect Space Bar	1,4/m²	1,4/m²
7	Connect Adjustable Hanger, installed at 1200 mm centres (max. distance from wall 600 mm)	0,7/m²	0,7/m²
8	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
9	Alt. Connect Frieze Trim, fixed c300 mm	as required	as required
10	Connect Frieze Bracket, installed at 500 mm centre. Minimum free depth above tile 150 mm.	2/cut tile with one bearing edge	3/cut tile with one bearing edge
11	Connect Hold Down Clip Ds	2/tile, 50-100 mm from corners	3/tile, 50-100 mm from corners
12	Joint sealant (not supplied by Ecophon)	as required	as required
	Δ Min. overall depth of system: 170 mm	-	-
	δ Min. demounting depth: 30 mm	-	-



See Quantity Specification



Arrangement of clips

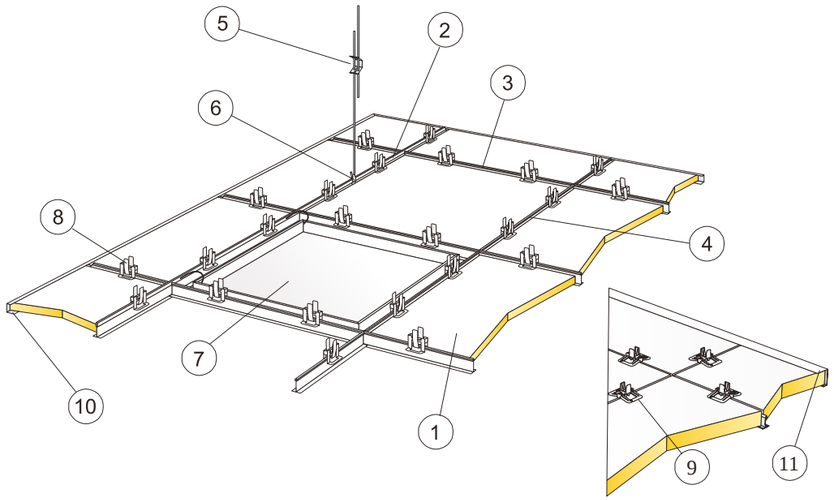


Demounting of tile from below

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x20	30	160
1200x600x20	30	160

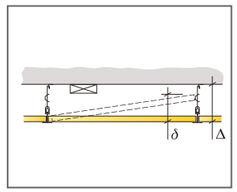
Live load/load bearing capacity

INSTALLATION DIAGRAM (M469) FOR ECOPHON HYGIENE PROTEC™ AIR A

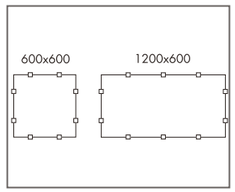


QUANTITY SPECIFICATION (EXCL. WASTAGE)

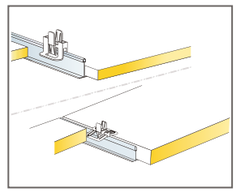
		Size, mm	
		600x600	**1200x600**
1	Hygiene Protec Air A	2,8/m²	2,8/m²
2	Connect T24 Main Runner, installed at 1200 mm centres (max distance from wall 300 mm)	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee, L=1200 mm, installed at 600 mm centres	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee, L=600 mm	0,9m/m²	0,9m/m²
5	Connect Adjustable Hanger, installed at 1200 mm centres (max. distance from wall 600 mm)	0,7/m²	0,7/m²
6	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
7	Connect Inspection Hatch C3	as required	as required
8	Connect Hygiene Clip 20	11/m²	11/m²
9	Connect Hygiene Clip 40	11/m²	11/m²
10	Connect Channel Trim, fixed c300 (for 20 mm thickness)	as required	as required
11	Connect Channel Trim, fixed c300 (for 40 mm thickness)	as required	as required
	Connect Edge Sealant	as required	as required
	Δ Min. overall depth of system: 150 mm	-	-
	δ Min. demounting depth 20 mm: 150 mm	-	-
	δ Min. demounting depth 40 mm: 170 mm	-	-



See Quantity Specification



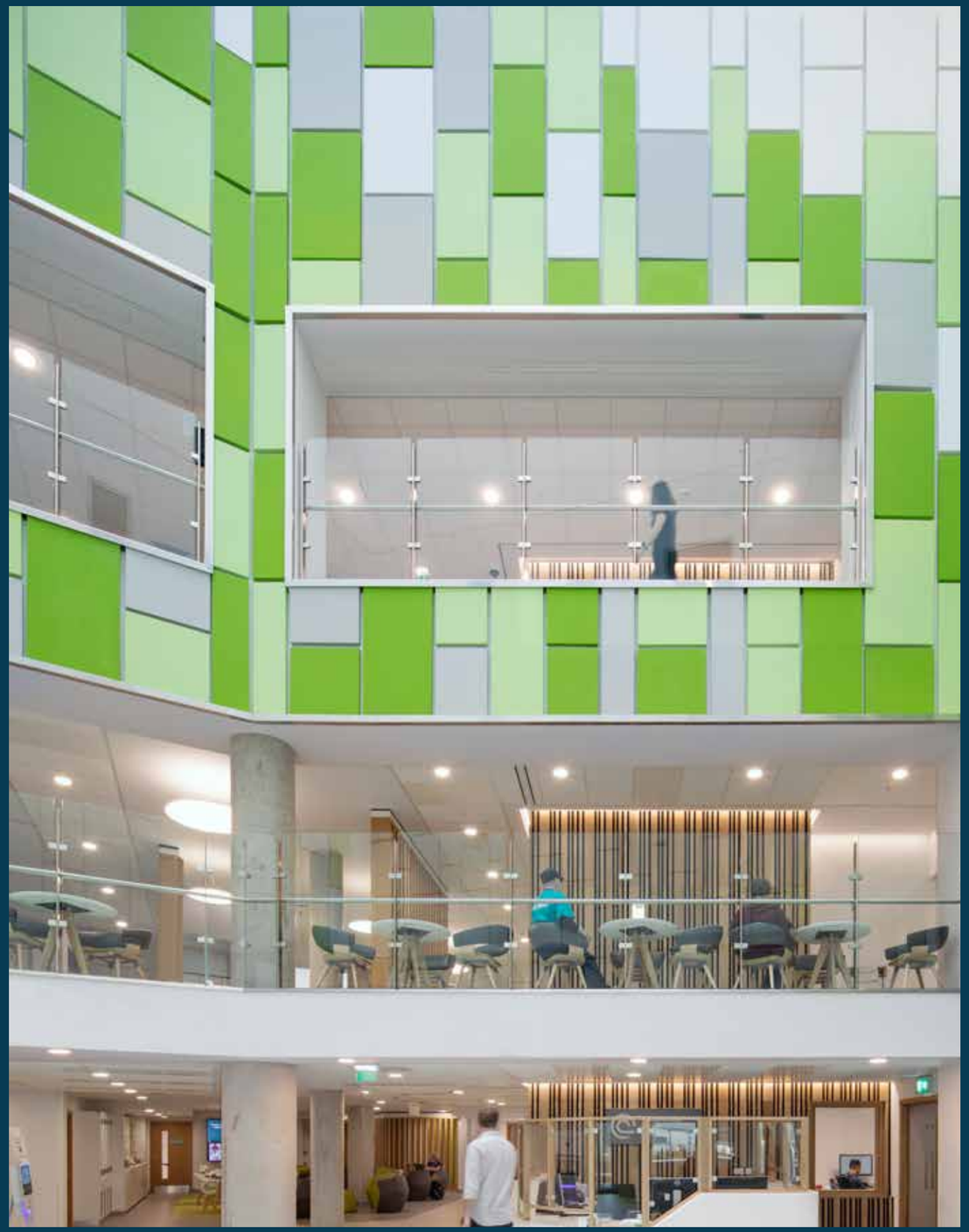
Arrangement of clips



Clip for keeping tiles in place for 40 mm tiles

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x20	50	160
600x600x40	50	160
1200x600x20	50	160
1200x600x40	50	160

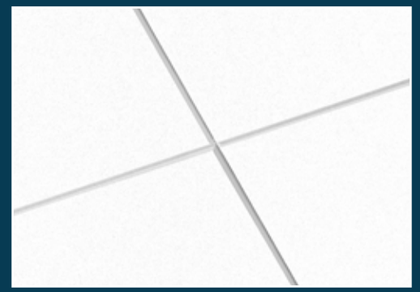
Live load/load bearing capacity



If your area does not require hygiene demands contact us for more options.
The image is showing **Ecophon Akusto™ Wall.**

ECOPHON

HYGIENE PERFORMANCE™



DRY & HUMID AREAS – ADVANCED CLEANING

Ecophon Hygiene Performance™ are easy-to-clean, sound-absorbing ceilings, wall panels and baffles for humid areas.

They withstand regular cleaning using advanced methods such as steam or high/low pressure washing. Their surface is resistant to common detergents and disinfectants. The absorbers have low emission levels, thus ensuring high indoor air quality. They are resistant to mould and bacteria growth and withstand HPV cleaning.

SHARED PROPERTIES – ECOPHON HYGIENE PERFORMANCE™

Accessibility	Minimum demounting depth according to installation diagrams	Demountable
Visual appearance	Surface: Akutex™ HS	White 500, nearest NCS colour sample S 0500-N, Light reflectance: 84%
Fire safety	Classification (EN 13501-1)	Class: A2-s1,d0

DIFFERENTIATING PROPERTIES – ECOPHON HYGIENE PERFORMANCE™

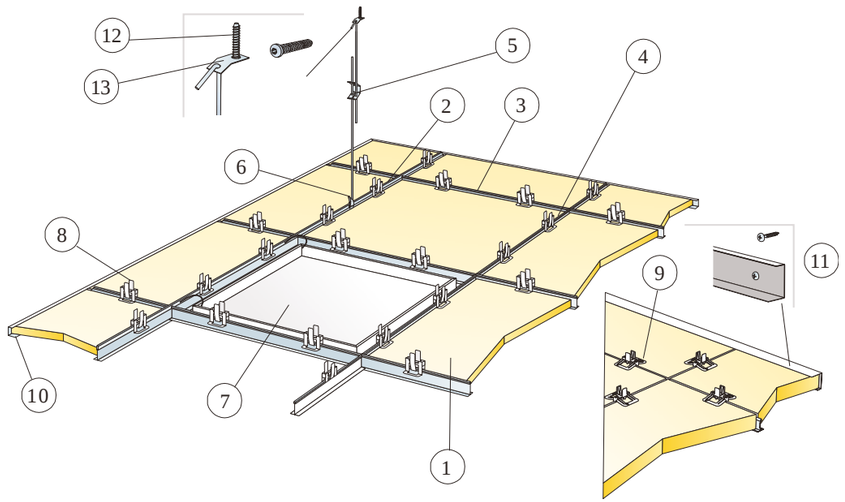
		A	B	DS	PLUS A	BAFFLE	WALL	CARE WALL
Range	Installation methods							
	Size, thickness (mm)	600x600x20 1200x600x20 600x600x40 1200x600x40	600x600x40 1200x600x40	600x600x20 1200x600x20	600x600x20 1200x600x20 600x600x40 1200x600x40	1200x600x50	1200x600x40	2700x1200x40
	Visual experience	Visual grid	Direct fix	Concealed grid	Visual grid	Semi concealed grid	Visual bracket	Visual frame
	Edge treatment	Primed	Painted	Painted	Painted	Painted	Painted	Primed
	Weight of system (approx.)	3-4 kg/m², 20 mm 5 kg/m², 40 mm	5 kg/m²	3-4 kg/m²	3.5 kg/m², 20 mm 5 kg/m², 40 mm	5 kg/m²	3 kg/pcs	5 kg/m²
	Back treatment of the tile	Glass tissue	Painted	Glass tissue	Hygiene Surface	Akutex™ HS	Akutex™ HS	Glass Tissue
Acoustic	Sound absorption (α_w)	0.95, 20 mm 1.00, 40 mm	1.00	0.90	0.90, 20 mm 0.95, 40 mm	0.70, rows 0.75, rectangles	1.0	1.0
Cleanability	Dusting & vacuum cleaning	Daily	Daily	Daily	Daily	Daily	Daily	Daily
	Wet wiping	Weekly	Weekly	Weekly	Weekly	Weekly	Weekly	Weekly
Advanced cleanability	Steam cleaning	4/year	4/year	4/year	4/year	4/year	4/year	4/year
	Wet cleaning	2/year	–	–	2/year	2/year	2/year	–
	High pressure washing	2/year	–	–	2/year	2/year	2/year	–
	Hydrogen peroxide vapour	●	●	●	●	●	●	●
x200 Surface endurance	Withstand 200 cycles (ISO 11998)	●	●	●	●	●	●	●
	Back of tile withstand 200 cycles (ISO 11998)	–	N/A	–	●	N/A	N/A	N/A
Chemical resistance	Resistant to disinfection chemicals (ISO 11998)	2/year	2/year	2/year	2/year	2/year	2/year	2/year
EPD life cycle stages A1-C4	Kg CO_2 equiv/m² (ISO 14025, EN 15804)	2,43, 20 mm 4,22 40 mm	–	4,46	3,22, 20 mm 5,19, 40 mm	8,30	7,13	–
Humidity resistance	Dry area system, compatible with corrosion class C1 areas	●	●	●	●	●	●	●
	High humidity area system, compatible with corrosion class C3 areas	●	–	●	●	●	●	–
	Swimming pool area system, compatible with corrosion class C4 areas	●	–	●	–	●	–	–
Clean room	Clean room classification ISO 4 (ISO 14644-1) and Zone 4 (NF S 90-351)							
	Bacteriological class M1 (NF S 90-351)							
	Kinetic class for particle elimination $CP_{(0,5)}5$ (NF S 90-351)							
Mould and bacteria resistance	Mould, Class 0, method A (ISO 846)							
	Bacteria, Class 0, method C (ISO 846)							

CHEMICALS & CONCENTRATION (TESTED ACCORDING TO ISO 11998)

CHEMICALS	Actichlor plus	LifeClean	Etanol	Chlorine	Virkon S	Isopropanol	Oxivir Excel	Sumabac D10	Suredis VT1	Enduro Chlor VE5	Aciplusfoam VF59
CONCENTRATION	1%	Undiluted	70%	2,5%	1%	70%	0,5%	1%	1%	1,5%	5%

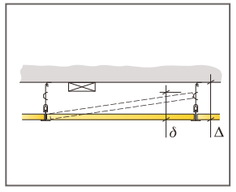
M395C3

INSTALLATION DIAGRAM (M395) FOR ECOPHON HYGIENE PERFORMANCE™ A C3

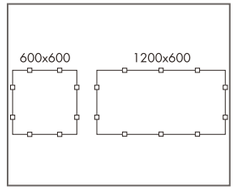


QUANTITY SPECIFICATION (EXCL. WASTAGE)

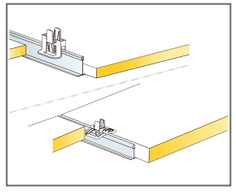
		Size, mm	
		600x600	1200x600
1	Hygiene Performance A	2,8/m²	2,8/m²
2	Connect T24 Cross Tee C3, L=600 mm	0,9m/m²	0,9m/m²
3	Connect T24 Main Runner C3, installed at 1200 mm centres	0,9m/m²	0,9m/m²
4	Connect T24 Cross Tee C3, L=1200 mm, installed at 600 mm centres	1,7m/m²	1,7m/m²
5	Connect Adjustable Hanger C3, c1200 (max distance from wall 600 mm)	0,7/m²	0,7/m²
6	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
7	Connect Inspection Hatch C3	as required	as required
8	Connect Hygiene Clip 20	11/m²	11/m²
9	Connect Hygiene Clip 40	11/m²	11/m²
10	Connect Channel Trim C3, fixed c300 (for 20 mm thickness)	as required	as required
11	Connect Channel Trim C3, fixed c300 (for 40 mm thickness)	as required	as required
12	Connect Anchor Screw C4	0,7/m²	0,7/m²
13	Connect Fixing Plate C4	0,7/m²	0,7/m²
	Δ Min. overall depth of system: 150 mm	-	-
	δ Min. demounting depth 20 mm: 150 mm	-	-
	δ Min. demounting depth 40 mm: 170 mm	-	-



See Quantity Specification



Arrangement of clips



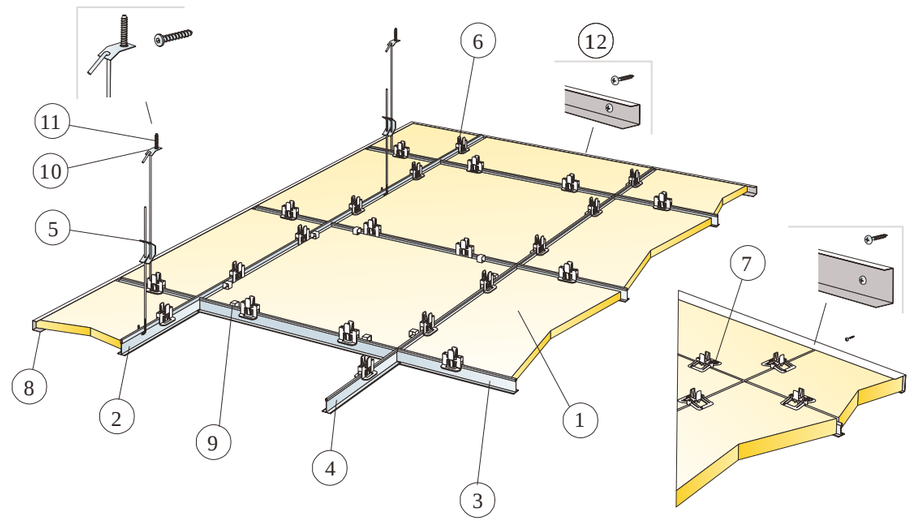
Clip for keeping tiles in place for 40 mm tiles

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x20	50	160
600x600x40	50	160
1200x600x20	50	160
1200x600x40	50	160

Live load/load bearing capacity

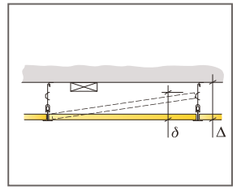
M266C4

INSTALLATION DIAGRAM (M266C4) FOR ECOPHON HYGIENE PERFORMANCE™ A C4

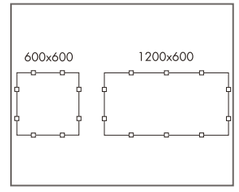


QUANTITY SPECIFICATION (EXCL. WASTAGE)

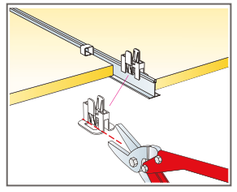
		Size, mm	
		600x600	1200x600
1	Hygiene Performance A	2,8/m²	2,8/m²
2	Connect T24 Main Runner C4, c1200	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee C4, L=1200, c600	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee C4, L=600	0,9m/m²	0,9m/m²
5	Connect Adjustable Hanger C4, c1200, (max 600 mm distance from wall)	0,7/m²	0,7/m²
6	Connect Hygiene Clip 20	11/m²	11/m²
7	Connect Hygiene Clip 40 C4	11/m²	11/m²
8	Connect Channel Trim C4, fixed at c300 mm	as required	as required
9	Connect Demo Clip 20 C4, (where access is needed)	as required	as required
10	Connect Fixing Plate C4	0,7/m²	0,7/m²
11	Connect Anchor Screw C4	0,7/m²	0,7/m²
12	Connect Installation Screw C4	3,4/lm Channel trim C4	
	Δ Min. overall depth of system: 150 mm	-	-
	δ Min. demounting depth: 150 mm	-	-
	δ Min. demounting depth 40 mm: 170 mm	-	-



See Quantity Specification



Arrangement of clips

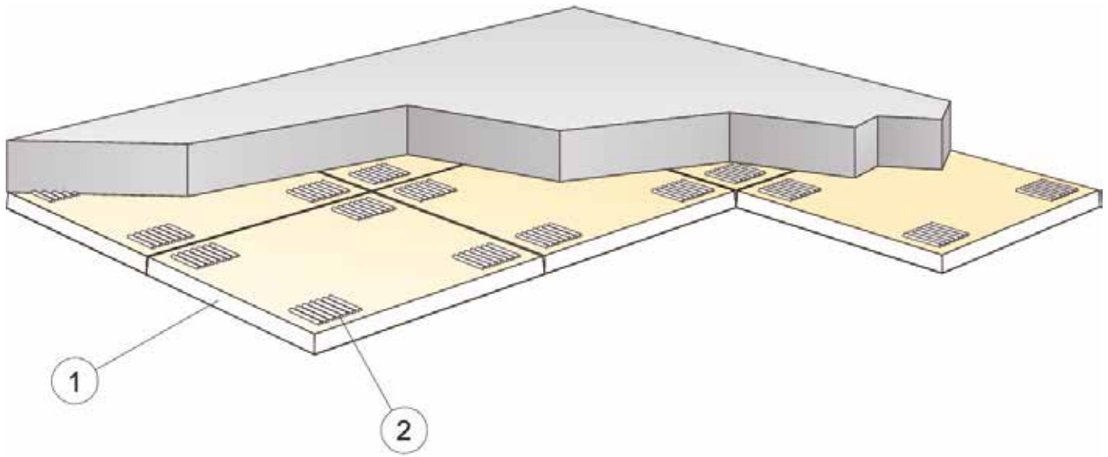


Cutting of Connect Hygiene Clip 20 at the inspection tile

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x20	50	160
600x600x40	50	160
1200x600x20	50	160
1200x600x40	50	160

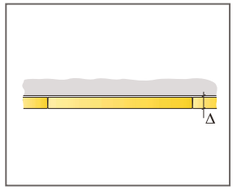
Live load/load bearing capacity

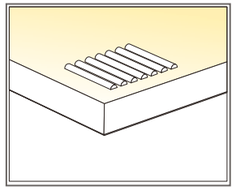
INSTALLATION DIAGRAM (M638) FOR ECOPHON HYGIENE PERFORMANCE B, WITH GLUE



QUANTITY SPECIFICATION (EXCL. WASTAGE)

		Size, mm	
		600x600	1200x600
1	Hygiene Performance™ B	2,8/m²	1,4/m²
2	Connect Absorber glue (0,25 l/m² - 0,4 l/m² depending on installation conditions)	as required	as required
	Use Connect Notched spatula to apply the glue.	-	-
	Δ Min. overall depth of system: 43 mm	-	-
	δ Min. demounting depth: The system is not demountable	-	-
	Cut visible edges should be painted	-	-



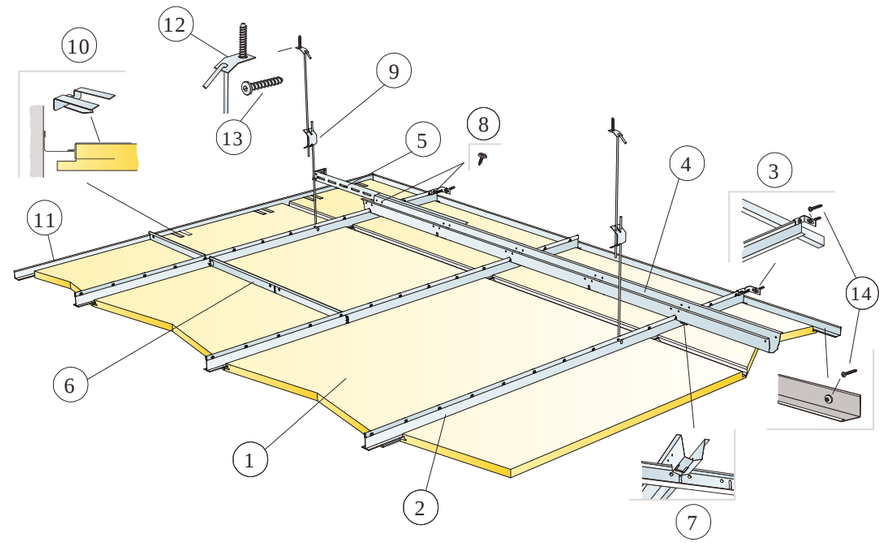


Application of glue

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x40	-	-
1200x600x40	-	-

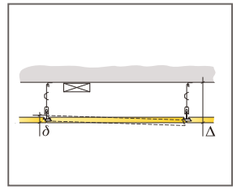
Live load/load bearing capacity

INSTALLATION DIAGRAM (M616C4) FOR ECOPHON PERFORMANCE™ DS C4. SUSPENDED INSTALLATION

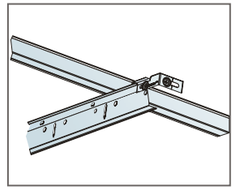


QUANTITY SPECIFICATION (EXCL. WASTAGE)

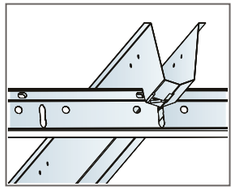
		Size, mm	
		600x600	1200x600
1	Hygiene Performance Ds	2,8/m²	1,4/m²
2	Connect T24 Main Runner C4, installed at 600 mm centres	1,7m/m²	1,7m/m²
3	Connect Wall Bracket C4 for T-profiles C4	1/suspended row of Main runner	
4	Connect Space Bar C4, installed at 1500 mm centres (max. distance from wall 300 mm) for winch	0,7m/m²	0,7m/m²
5	Connect Wall Bracket C4, L=700 mm, for Connect Space Bar	1/row of Space bar	
6	Connect T24 Cross Tee C4, L=600 mm	2/row of Main runner	
7	Connect Space Bar Winch C4, installed one per joint Connect Main Runner/Connect Space Bar	1,4/m²	1,4/m²
8	C4 screw for wall brackets(included in products)	-	-
9	Connect Adjustable Hanger C4, installed at 1200 mm centres (max. distance from wall 600 mm)	0,7/m²	0,7/m²
10	Connect Support Clip Dg20 C4	1pc/300-400 mm on every cut perimeter tile with only 1 supporting edge	
11	Connect Angle Trim 15/22 C4, fixed at 300 mm centres	as required	as required
12	Connect Fixing Plate C4	0,7/m²	0,7/m²
13	Connect Anchor Screw C4	0,7/m²	0,7/m²
14	Connect Installation Screw C4	3,4/lm Channel trim C4	
	Δ Min. overall depth of system: 385 mm	-	-
	δ Min. demounting depth: 30 mm	-	-



See Quantity Specification



Secured Connect Main Runner C4 at wall with Connect Wall Bracket C4



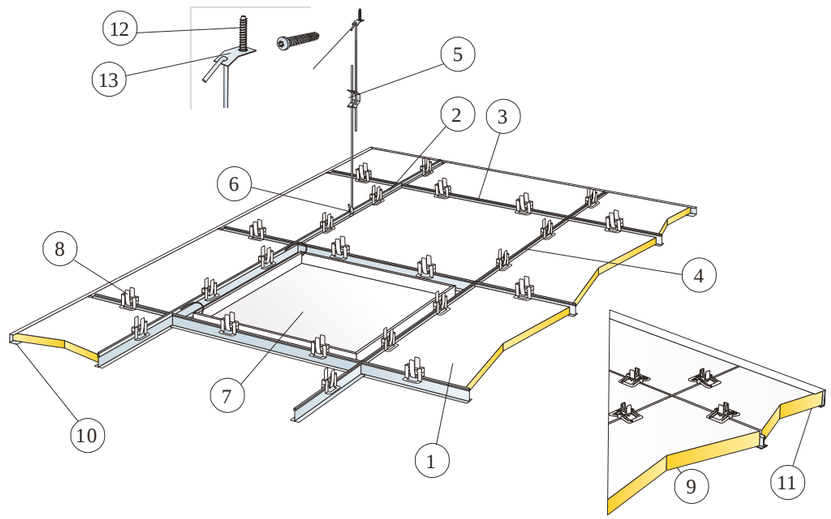
Connection between profiles with space bar winch

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x20	40	160
1200x600x20	40	160

Live load/load bearing capacity

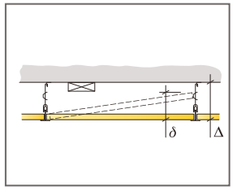
M466

INSTALLATION DIAGRAM (M466) FOR ECOPHON HYGIENE PERFORMANCE™ PLUS A C3

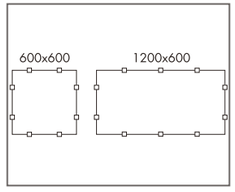


QUANTITY SPECIFICATION (EXCL. WASTAGE)

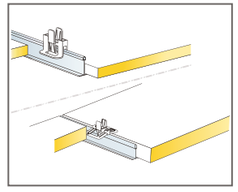
		Size, mm	
		600x600	1200x600
1	Hygiene Performance Plus A	2,8/m²	2,8/m²
2	Connect T24 Main Runner C3, installed at 1200 mm centres	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee C3, L=1200 mm, installed at 600 mm centres	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee C3, L=600 mm	0,9m/m²	0,9m/m²
5	Connect Adjustable Hanger C3, c1200 (max distance from wall 600 mm)	0,7/m²	0,7/m²
6	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
7	Connect Inspection Hatch C3	as required	as required
8	Connect Hygiene Clip 20	11/m²	11/m²
9	Connect Hygiene Clip 40	11/m²	11/m²
10	Connect Channel Trim C3, fixed c300 (for 20 mm thickness)	as required	as required
11	Connect Channel Trim C3, fixed c300 (for 40 mm thickness)	as required	as required
12	Connect Anchor Screw C4	0,7/m²	0,7/m²
13	Connect Fixing Plate C4	0,7/m²	0,7/m²
	Δ Min. overall depth of system: 150 mm	-	-
	δ Min. demounting depth 20 mm: 150 mm	-	-
	δ Min. demounting depth 40 mm: 170 mm	-	-



See Quantity Specification



Arrangement of clips



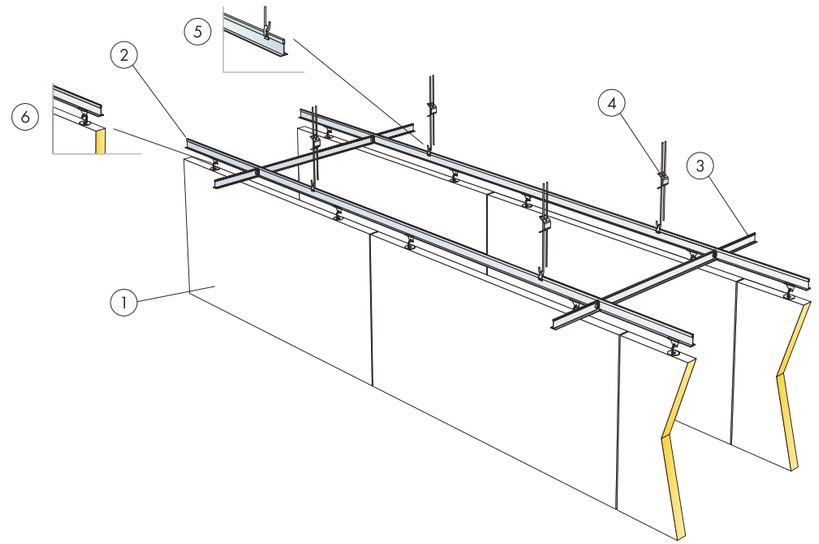
Clip for keeping tiles in place for 40 mm tiles

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x20	50	160
600x600x40	50	160
1200x600x20	50	160
1200x600x40	50	160

Live load/load bearing capacity

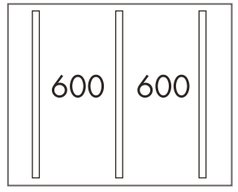
M492C3

INSTALLATION DIAGRAM (M492C3) FOR ECOPHON HYGIENE PERFORMANCE™ BAFFLE C3 (IN ROWS)

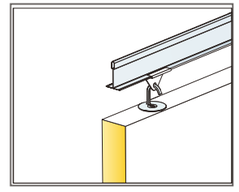


QUANTITY SPECIFICATION (EXCL. WASTAGE)

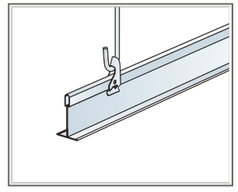
		Size, mm
		1200x600
1	Hygiene Performance Baffle	1,4/m²
2	Connect T24 Main Runner C3, installed at 600 mm centres	1,7m/m²
3	Connect T24 Cross Tee C3, L=600 mm, installed at 1800 mm centres	0,6m/m²
4	Connect Adjustable Hanger C3 c1200	1,4/m²
5	Connect Hanger Clip	1,4/m²
6	Connect Baffle Clip C3	2,8/m²



Installation in rows



Detail of suspension



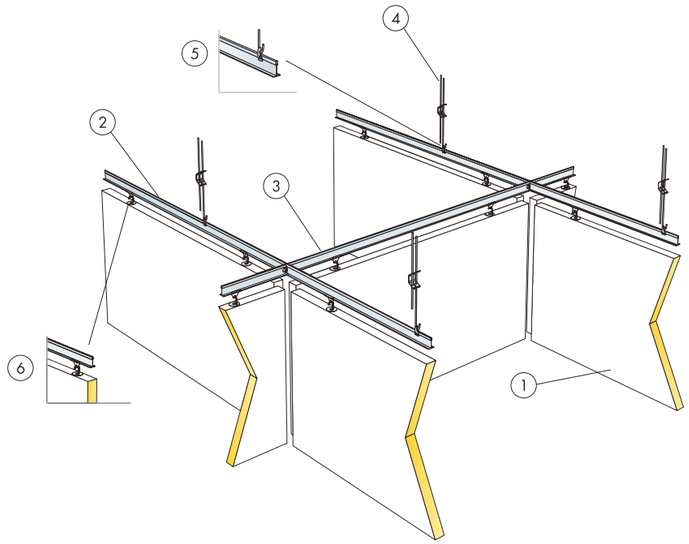
Suspension with Connect Adjustable Hanger and Connect Hanger Clip

Size, mm	Max live load (N)	Min load bearing capacity (N)
1200x600x50	0	160

Live load/load bearing capacity

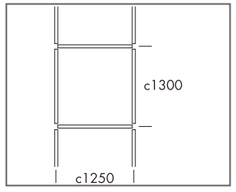
M493C3

INSTALLATION DIAGRAM (M493C3) FOR ECOPHON HYGIENE PERFORMANCE™ BAFFLE C3 (IN RECTANGLES)

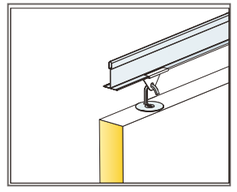


QUANTITY SPECIFICATION (EXCL. WASTAGE)

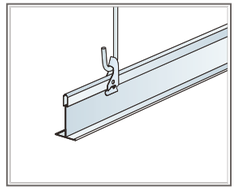
		Size, mm
		1200x600
1	Hygiene Performance Baffle	1,3/m²
2	Connect T24 Main Runner C3, installed at 1250 mm centres	0,8m/m²
3	Connect T24 Cross Tee C3, L=1250 mm, installed at 1300 mm centres	0,8m/m²
4	Connect Adjustable Hanger C3	0,7/m²
5	Connect Hanger Clip	0,7/m²
6	Connect Baffle Clip C3	2,5/m²



Installation in rectangles



Detail of suspension



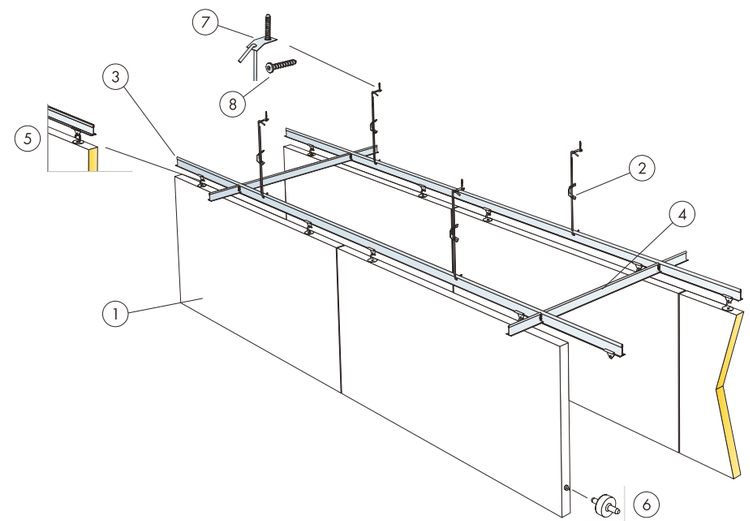
Suspension with Connect Adjustable Hanger and Connect Hanger Clip

Size, mm	Max live load (N)	Min load bearing capacity (N)
1200x600x50	0	160

Live load/load bearing capacity

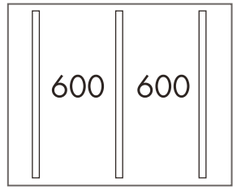
M494C4

INSTALLATION DIAGRAM (M494C4) FOR ECOPHON HYGIENE PERFORMANCE™ BAFFLE C4 (IN ROWS)

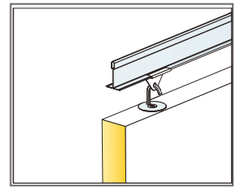


QUANTITY SPECIFICATION (EXCL. WASTAGE)

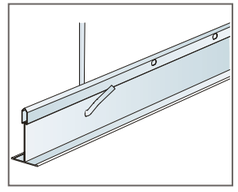
		Size, mm
		1200x600
1	Hygiene Performance Baffle	1,4/m²
2	Connect Adjustable Hanger C4 c1200	1,4/m²
3	Connect T24 Main Runner C4, installed at 600 mm centres	1,7m/m²
4	Connect T24 Cross Tee C4, L=600 mm, installed at 1800 mm centres	0,6m/m²
5	Connect Baffle Clip C4	2,8/m²
6	Connect Guiding Pin, installed at 1200/1800 mm centres	2,8/m²
7	Connect Fixing Plate C4	1,4/m²
8	Connect Anchor Screw C4	1,4/m²



Installation in rows



Detail of suspension



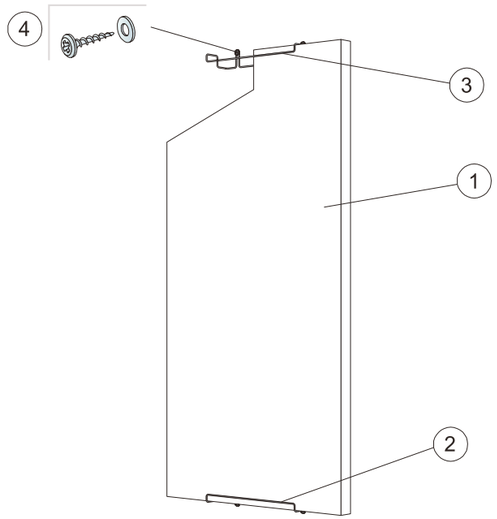
Suspension with Connect Adjustable Hanger C4

Size, mm	Max live load (N)	Min load bearing capacity (N)
1200x600x50	0	160

Live load/load bearing capacity

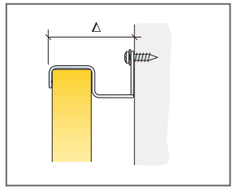
M467

INSTALLATION DIAGRAM (M467) FOR ECOPHON HYGIENE PERFORMANCE™ WALL C3

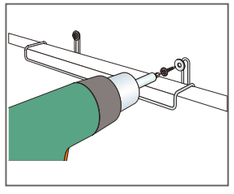


QUANTITY SPECIFICATION (EXCL. WASTAGE)

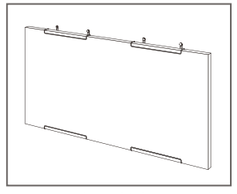
		Size, mm
		1200x600
1	Hygiene Performance Wall	1,4/m²
2	Connect Wall Fixing C3, vertical installation	2/panel
3	Connect Wall Fixing C3, horisontal installation	4/panel
4	Wall screw, A2 material (not supplied by Ecophon)	2/wall fixing
	Δ Min. overall depth of system: 90 mm	-



See Quantity Specification



Installation with wall screw in stainless steel (A2) material



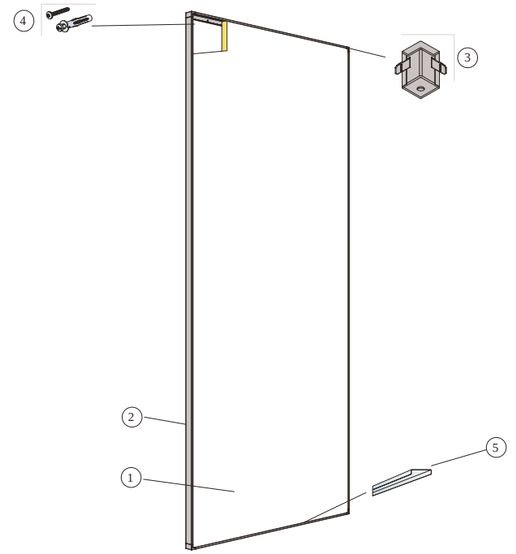
Horisontal installation of Performance Wall C3

Size, mm	Max live load (N)	Min load bearing capacity (N)
1200x600x40	0	-

Live load/load bearing capacity

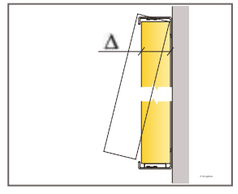
M610

INSTALLATION DIAGRAM (M610) FOR ECOPHON HYGIENE PERFORMANCE™ CARE WALL INSTALLATION WITH CONNECT THINLINE PROFILE.

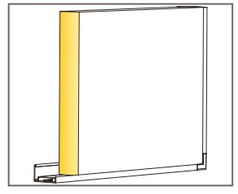


QUANTITY SPECIFICATION (EXCL. WASTAGE)

		Size, mm
		2700x1200
1	Hygiene Performance Care Wall	0,31/m²
2	Connect Thinline Profile, L=2658 mm	as required
3	Connect Thinline Corner	as required
4	Installation screw, installed at 200 mm centres (select fastener according to wall material)	as required
5	Connect Thinline Space Bar	as required
	Δ Overall depth of system: 45 mm	-



See Quantity specification



Detail of panel with Thinline system

ECOPHON

HYGIENE ADVANCE™

DRY & WET AREAS – DAILY CLEANING WITH STRONG CHEMICALS

Ecophon Hygiene Advance™ are sound-absorbing ceilings, wall panels and baffles for the most demanding conditions, including airborne grease and dirt particles.

They withstand daily advanced cleaning and disinfection with strong chemicals. The absorbers have low emission levels, thus ensuring high indoor air quality, and they withstand HPV cleaning. For areas where air pressure control is required, Ecophon Hygiene Advance™ A is available.

SHARED PROPERTIES – ECOPHON HYGIENE ADVANCE™

Accessibility	Minimum demounting depth according to installation diagrams	Demountable
Visual appearance	Surface: Advance	White 141, Nearest NCS colour sample: NCS S 1000-N. Light reflectance: 73%
Fire safety	Classification (EN 13501-1)	Class: A2-s1,d0

DIFFERENTIATING PROPERTIES – ECOPHON HYGIENE ADVANCE™

		A	BAFFLE	WALL
Range	Installation methods			
	Size, thickness (mm)	600x600x20 1200x600x20 600x600x40 1200x600x40	1200x600x40	1200x600x40
	Visual experience	Visual grid	Semi concealed grid	Visual bracket
	Edge treatment	Advance	Advance	Advance
	Weight of system (approx.)	3 kg/m², 20 mm 4.5 kg/m², 40 mm	4 kg/m²	3 kg/pcs
	Back treatment of the tile	Advance	Advance	Advance
Acoustic	Sound absorption (α_w)	0.85, 20 mm 0.90, 40 mm	0.60	0.85
Cleanability	Dusting & vacuum cleaning	Daily	Daily	Daily
	Wet wiping	Daily	Daily	Daily
Advanced cleanability	Steam cleaning	Daily	Daily	Daily
	Wet cleaning	Daily	Daily	Daily
	High pressure washing	Daily	Daily	Daily
	Hydrogen peroxide vapour	●	●	●
	Compatible with UV-C disinfection	●	●	●
Surface endurance	Withstand 200 cycles (ISO 11998)	●	●	●
Chemical resistance	Resistant to strong chemicals (ISO 2812-1)	Daily	Daily	Daily
EPD life cycle stages A1-C4	Kg CO_2 equiv/m² (ISO 14025, EN 15804)	9,32, 20 mm 16,23, 40 mm	16,23	16,23
Humidity resistance	High humidity area system, compatible with corrosion class C3 areas	●	●	●
	Swimming pool area system, compatible with corrosion class C4 areas	●	–	–
	Constant wet area system, compatible with corrosion class C4 areas	●	–	–
Clean room (Advanced)		Clean room classification ISO 3 (ISO 14644-1) and Zone 4 (NF S 90-351)		
		Bacteriological class M1 (NF S 90-351)		
		Kinetic particle elimination, $CP_{(0,5)}1$ (NF S 90-351)		
Mould and bacteria resistance		Mould, Class 1, method A (ISO 846)		
		Bacteria, Class 0, method C (ISO 846)		

ÉMISSIONS DANS L'AIR INTÉRIEUR A+ A+ A B C

Air permeability EN ISO 9972:2015	Differential pressure **(Pa)**	10 / -10	20 / -20	30 / -30	40 / -40	50 / -50
	Advance, A 20mm Air leak rate **m³/h/m²**	13,1 / 12,5	20,9 / 17,9	27,5 / 22,0	33,4 / 25,5	38,8 / 28,6
	Advance, A 40mm Air leak rate **m³/h/m²**	4,2 / 4,4	6,1 / 6,3	7,7 / 7,7	9,1 / 8,9	10,3 / 10,0

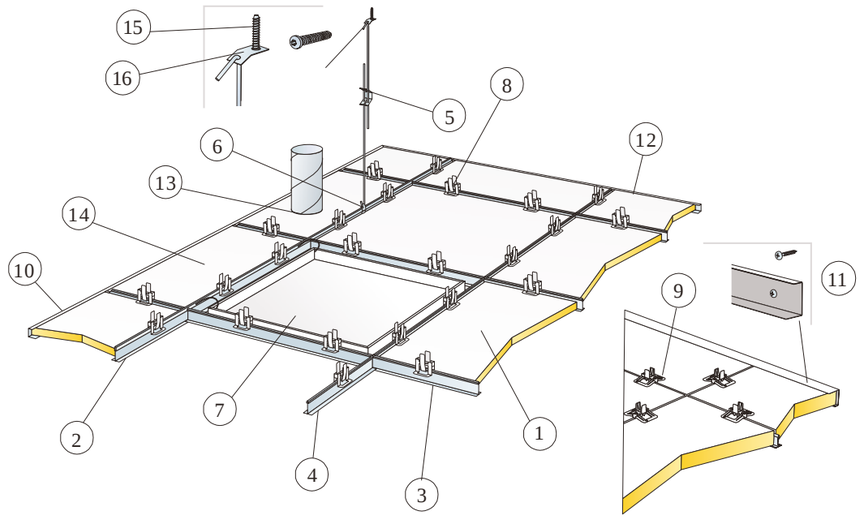
Differential pressure **(Pa)**	10 / -10	20 / -20	30 / -30	40 / -40	50 / -50
Advance, A 20mm Air leak rate **L/s/m²**	3,6 / 3,5	5,8 / 5,0	7,6 / 6,1	9,3 / 7,1	10,8 / 8,0
Advance, A 40mm Air leak rate **L/s/m²**	1,2 / 1,2	1,7 / 1,7	2,1 / 2,1	2,5 / 2,5	2,9 / 2,8

CHEMICALS & CONCENTRATION (TESTED ACCORDING TO ISO 11998)

CHEMICALS	Formalin	Ammoniac	Hydrogen peroxide	Sulfuric acid	Phosphoric acid	Peracetic acid	Hydrochloric acid	Isopropanol	Sodium hydroxide	Sodium hypochlorite
CONCENTRATION	37%	25%	30%	5%	30%	15%	5%	100%	5%	5%

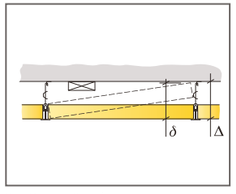
For the latest information go to www.ecophon.com or contact your nearest Ecophon representative.

INSTALLATION DIAGRAM (M252) FOR ECOPHON HYGIENE ADVANCE™ A C3

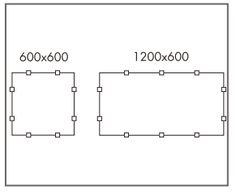


QUANTITY SPECIFICATION (EXCL. WASTAGE)

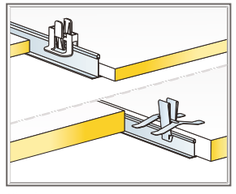
		Size, mm	
		600x600	1200x600
1	Hygiene Advance A	2,8/m²	2,8/m²
2	Connect T24 Main Runner C3, installed at 1200 mm centres	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee C3, L=1200 mm, installed at 600 mm centres	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee C3, L=600 mm	0,9m/m²	0,9m/m²
5	Connect Adjustable Hanger C3, c1200 (max distance from wall 600 mm)	0,7/m²	0,7/m²
6	Connect Hanger Clip (not to be used in swimming hall environments)	0,7/m²	0,7/m²
7	Connect Inspection Hatch C3	as required	as required
8	Connect Hygiene Clip 20	11/m²	11/m²
9	Connect Hygiene Clip 40	11/m²	11/m²
10	Connect Channel Trim C3, fixed c300 (for 20 mm thickness)	as required	as required
11	Connect Channel Trim C3, fixed c300 (for 40 mm thickness)	as required	as required
12	Connect Hygiene Advance Tape	as required	as required
13	Joint sealant (not supplied by Ecophon)	as required	as required
14	Hygiene Advance Technical Tile	as required	as required
15	Connect Anchor Screw C4	0,7/m²	0,7/m²
16	Connect Fixing Plate C4	0,7/m²	0,7/m²
	Δ Min. overall depth of system: 150 mm	-	-
	δ Min. demounting depth 20 mm: 150 mm	-	-
	δ Min. demounting depth 40 mm: 170 mm	-	-



See Quantity Specification



Arrangement of clips

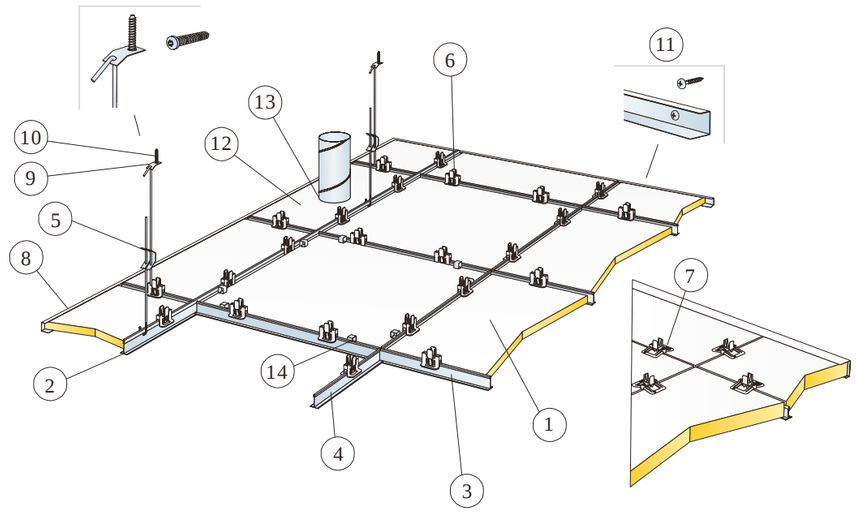


Clips for keeping tiles in place

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x20	40	160
600x600x40	40	160
1200x600x20	40	160
1200x600x40	40	160

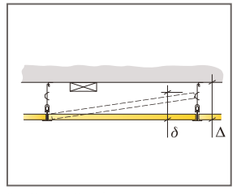
Live load/load bearing capacity

INSTALLATION DIAGRAM (M246) FOR ECOPHON HYGIENE ADVANCE™ A C4

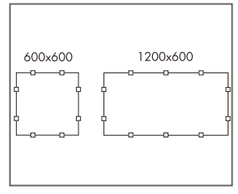


QUANTITY SPECIFICATION (EXCL. WASTAGE)

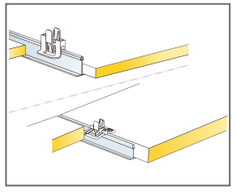
		Size, mm	
		600x600	1200x600
1	Hygiene Advance A	2,8/m²	2,8/m²
2	Connect T24 Main Runner C4, c1200	0,9m/m²	0,9m/m²
3	Connect T24 Cross Tee C4, L=1200, c600	1,7m/m²	1,7m/m²
4	Connect T24 Cross Tee C4, L=600	0,9m/m²	0,9m/m²
5	Connect Adjustable Hanger C4, c1200, (max 600 mm distance from wall)	0,7/m²	0,7/m²
6	Connect Hygiene Clip 20	11/m²	11/m²
7	Connect Hygiene Clip 40 C4	11/m²	11/m²
8	Connect Channel Trim C4, fixed at c300 mm	as required	as required
9	Connect Fixing Plate C4	0,7/m²	0,7/m²
10	Connect Anchor Screw C4	0,7/m²	0,7/m²
11	Connect Installation Screw C4	3,4/lm Channel trim C4	
12	Hygiene Advance Technical Tile	as required	as required
13	Joint sealant (not supplied by Ecophon)	as required	as required
14	Connect Demo Clip 20 C4, (where access is needed)	as required	as required
15	Connect Hygiene Advance Tape	as required	as required
	Δ Min. overall depth of system: 150 mm	-	-
	δ Min. demounting depth: 150 mm	-	-



See Quantity Specification



Arrangement of clips

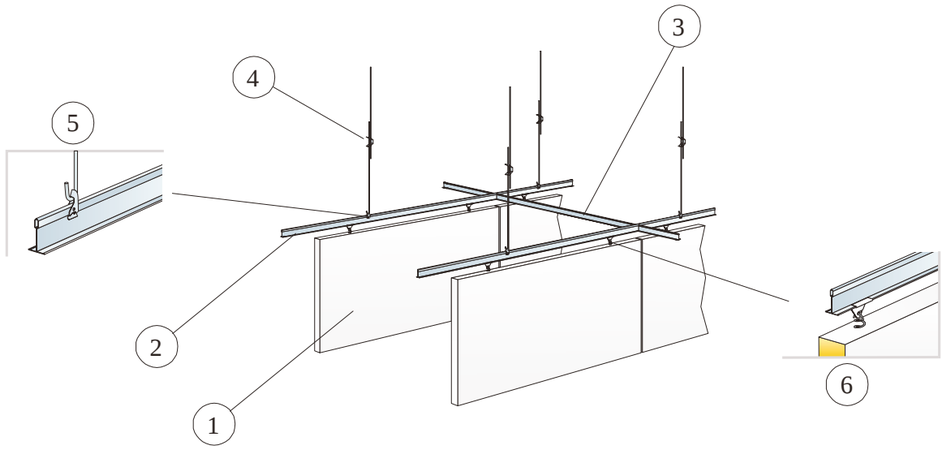


Clip for keeping tiles in place for 40 mm tiles

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x20	40	160
600x600x40	40	160
1200x600x20	40	160
1200x600x40	40	160

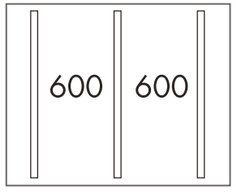
Live load/load bearing capacity

INSTALLATION DIAGRAM (M259) FOR ECOPHON HYGIENE ADVANCE™ BAFFLE C3 (IN ROWS)

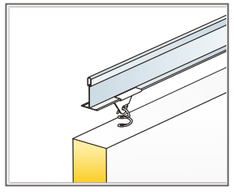


QUANTITY SPECIFICATION (EXCL. WASTAGE)

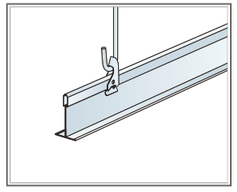
		Size, mm
		1200x600
1	Hygiene Advance Baffle	1,4/m²
2	Connect T24 Main Runner C3, installed at 600 mm centres	1,7m/m²
3	Connect T24 Cross Tee C3, L=600 mm, installed at 1800 mm centres	0,6m/m²
4	Connect Adjustable Hanger C3 c1200	1,4/m²
5	Connect Hanger Clip	1,4/m²
6	Connect Baffle Clip C3	2,8/m²



Installation in rows



Detail of suspension

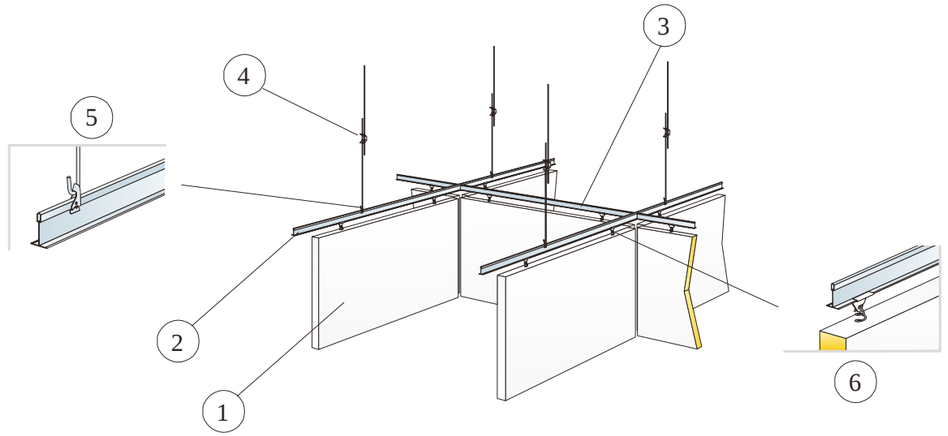


Suspension with Connect Adjustable Hanger and Connect Hanger Clip

Size, mm	Max live load (N)	Min load bearing capacity (N)
1200x600x40	0	160

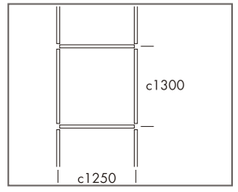
Live load/load bearing capacity

INSTALLATION DIAGRAM (M260) FOR ECOPHON HYGIENE ADVANCE™ BAFFLE C3 (IN RECTANGLES)

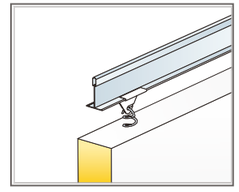


QUANTITY SPECIFICATION (EXCL. WASTAGE)

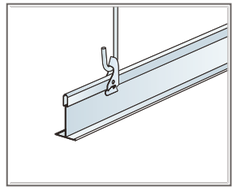
		Size, mm
		1200x600
1	Hygiene Advance Baffle	1,3/m²
2	Connect T24 Main Runner C3, installed at 1250 mm centres	0,8m/m²
3	Connect T24 Cross Tee C3, L=1250 mm, installed at 1300 mm centres	0,8m/m²
4	Connect Adjustable Hanger C3	0,7/m²
5	Connect Hanger Clip	0,7/m²
6	Connect Baffle Clip C3	2,5/m²



Installation in rectangles



Detail of suspension

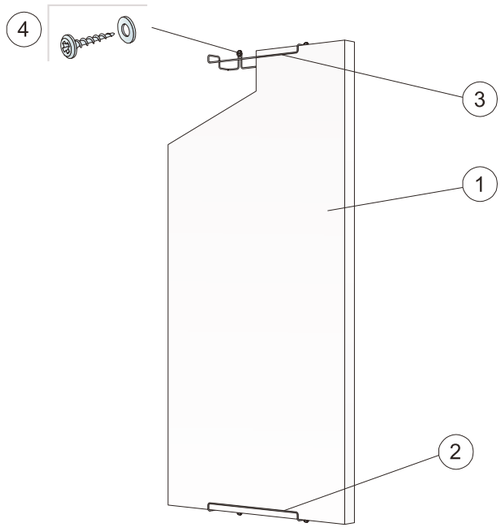


Suspension with Connect Adjustable Hanger and Connect Hanger Clip

Size, mm	Max live load (N)	Min load bearing capacity (N)
1200x600x40	0	160

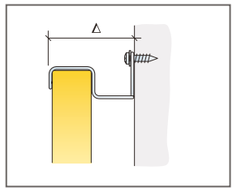
Live load/load bearing capacity

INSTALLATION DIAGRAM (M258) FOR ECOPHON HYGIENE ADVANCE™ WALL C3

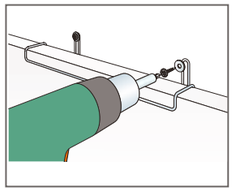


QUANTITY SPECIFICATION (EXCL. WASTAGE)

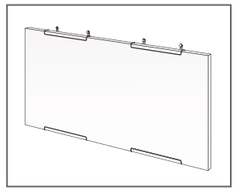
		Size, mm
		1200x600
1	Hygiene Advance Wall	1,4/m²
2	Connect Wall Fixing C3, vertical installation	2/panel
3	Connect Wall Fixing C3, horisontal installation	4/panel
4	Wall screw, A2 material (not supplied by Ecophon)	2/wall fixing
	Δ Min. overall depth of system: 90 mm	-



See Quantity Specification



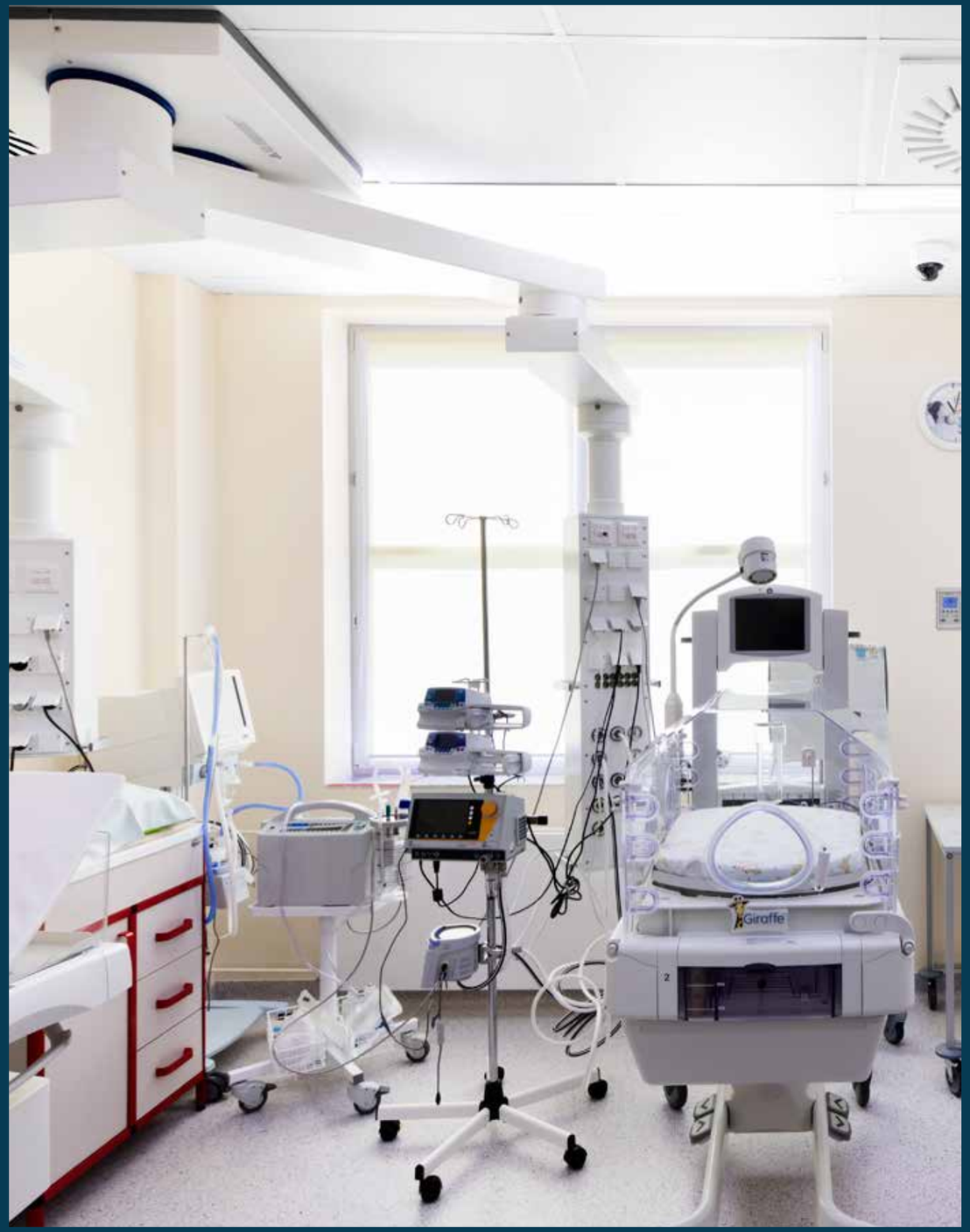
Installation with wall screw in stainless steel (A2) material



Horisontal installation of Advance Wall C3

Size, mm	Max live load (N)	Min load bearing capacity (N)
1200x600x40	0	-

Live load/load bearing capacity



ECOPHON HYGIENE™ ADVANCE A

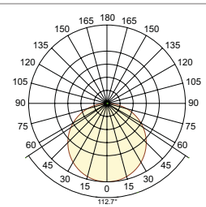
ECOPHON

HYGIENE LAVANDA™ LED

WITHSTANDS FREQUENT LOW-PRESSURE HOSING

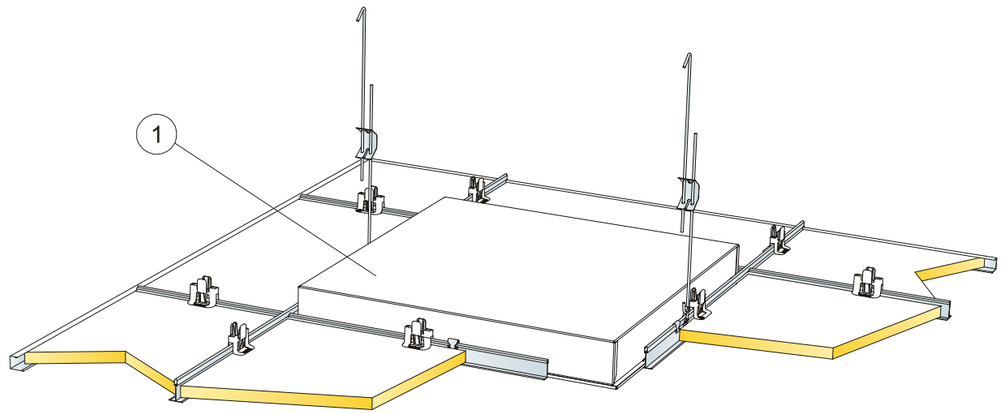
A recessed modular luminaire for use in Ecophon Hygiene edge A ceilings. Hygiene Lavanda™ LED is equipped with a high frequency ballast-, and is flush mounted to the ceiling to avoid pockets that could accumulate dirt and dust. The housing is made of 1.0 mm thick corrosion-protected steel sheet in white. The frame is made of anodised extruded aluminium-, and is secured to the housing utilizing clips. The frame supports a 3 mm thick clear plastic acrylic cover, and is sealed to the grid using a rubber gasket.

PROPERTIES – ECOPHON HYGIENE LAVANDA™ LED

		A
Range	Installation methods	
	Size (mm)	600x600
	Weight	6.5 kg
Cleanability	Dusting & vacuum cleaning	Daily
	Wet wiping	Daily
Advanced cleanability	Wet cleaning	Daily[1]
x200 Chemical resistance	Resistant to disinfection chemicals	Withstand the use of common disinfecting chemicals.
Humidity resistance	Dry area system, compatible with corrosion class C1 areas	●
	High humidity area system, compatible with corrosion class C3 areas	●
Electrical data	230-240V, 50 Hz, power factor cos ϕ>0,95. Electronic HF ballast.	
Connection	Delivered without any cables. Can be installed for on/off, SwitchDIM or DALI.	
Electrical approvals	IP65, Class 1. CE	
Lighting performance		System effect: 49,8 W Light source: LED Luminous flux: 4189 lm Light efficiency: 84 lm/W Colour temperature: 4000K Color rendering index: Ra >80 Colour tolerance: MacAdam 3 SDCM Light output ratio (LOR): 100% Light distribution up/down: 0/100 Expected lifespan: L80 >60000 h

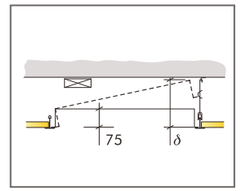
1. Water temperature max. 70°C

INSTALLATION DIAGRAM (M429) FOR ECOPHON HYGIENE LAVANDA™ LED

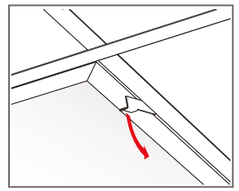


QUANTITY SPECIFICATION (EXCL. WASTAGE)

		Size, mm
		600x600
1	Hygiene Lavanda LED	as required
	δ Min. demounting depth: 300 mm	-



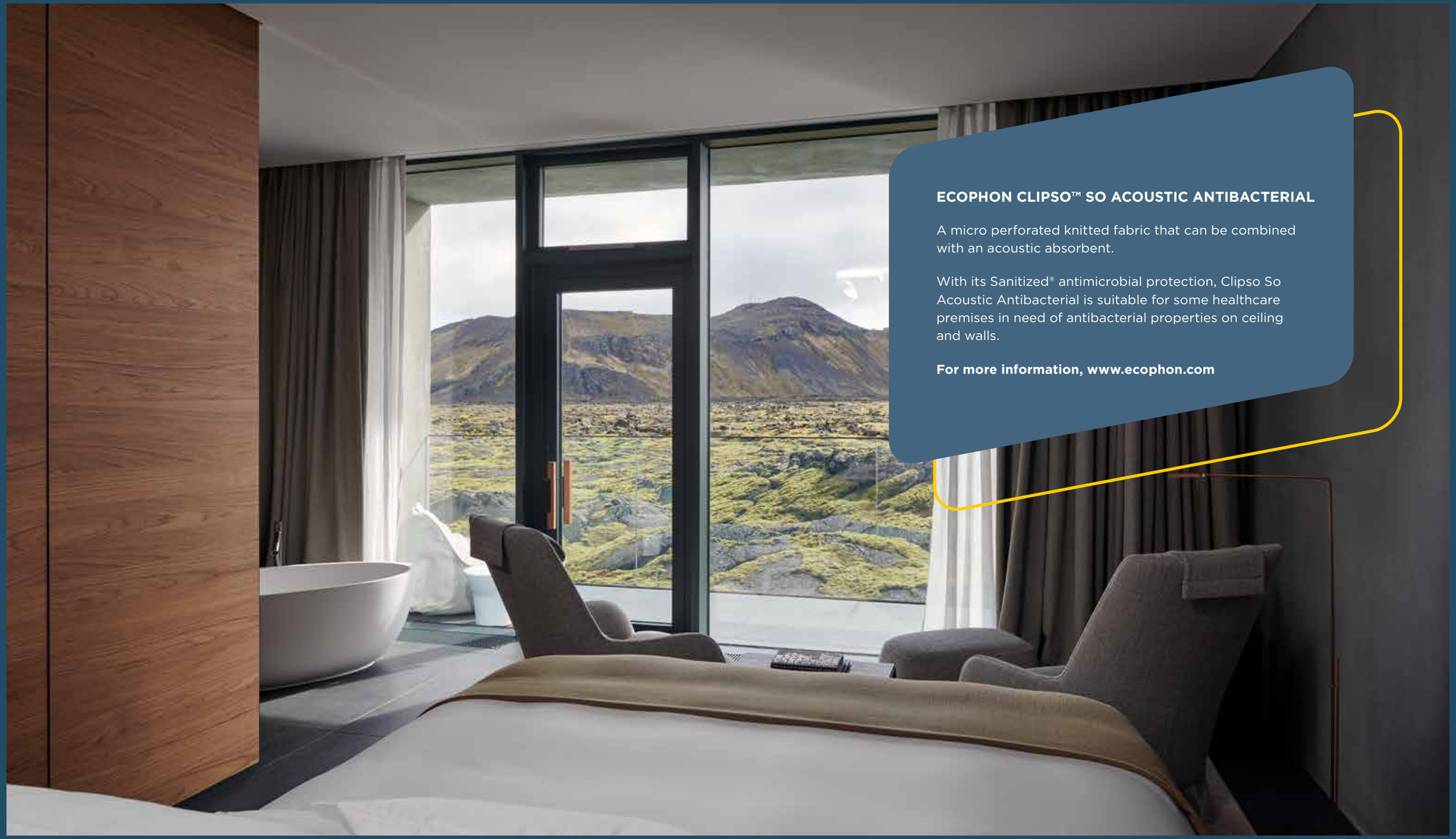
See Quantity Specification



Opening of the frame, which is secured with a snap-lock device

Size, mm	Max live load (N)	Min load bearing capacity (N)
600x600x75	0	160

Live load/load bearing capacity



ECOPHON CLIPSO™ SO ACOUSTIC ANTIBACTERIAL

A micro perforated knitted fabric that can be combined with an acoustic absorbent.

With its Sanitized® antimicrobial protection, Clipso So Acoustic Antibacterial is suitable for some healthcare premises in need of antibacterial properties on ceiling and walls.

For more information, www.ecophon.com

Ecophon is the leading supplier of indoor acoustic solutions that improve working performance and quality of life. We believe in the difference sound can make to our everyday lives, and are passionate advocates for the importance of room acoustics to people's wellbeing – whatever the space, activity or need.

Having a sound effect on people is the principle that guides all we do. We're proud of the Swedish heritage and human approach that promise is founded on. And, as members of the Saint-Gobain Group, to be doing our part in making the world a better home.

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