

ACOUSTICS IN POOLS

ECOPHON SOLUTIONS IN SWIMMING POOL ENVIRONMENTS




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A SOUND EFFECT

ON PEOPLE

05

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

06

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. We want to optimise indoor spaces to our natural way of hearing, so that speech and sound is easy to hear and understand, when needed, improving performance and wellbeing.

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.







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 standardized, 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 favorable 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.



CREATE ENJOYABLE SPACES

PEOPLE LOVE TO HAVE FUN IN WATER, HOWEVER, THERE IS ONE THING THAT CAN RUIN THE EXPERIENCE FOR EVERYBODY - THE NOISE.

For hundreds of thousands of years, our hearing has evolved to provide perfect hearing outdoors, in nature. This is why a noisy pool area can be tiring and uncomfortable. For some it can be unbearable. To assist in these situations, Ecophon provides sound absorbing solutions that create pleasing indoor environments. Whilst guaranteeing that all these products, surfaces and mounting accessories are:

- Water-resistant – unaffected by direct water splashes
- Corrosion-resistant – C4 grids tested in severe conditions
- Chloride-resistant – tested in environments with a high chloride concentration
- Highly humidity-resistant – ISO classified Class D, relative humidity 97% and 50°C, according to EN 13964:2014

Our product range for swimming pools and waterparks includes wall to wall sound-absorbing ceilings, free-hanging absorbers and wall absorbers. Every item in this range has been thoroughly tested according to applicable ISO standards and beyond.





POSITIVE WELLBEING **FOR STAFF**

GOING TO AN INDOOR SWIMMING POOL OR WATERPARK IS SOMETHING MOST PEOPLE LOOK FORWARD TO.

It is also important to remember that these environments are workplaces. Swimming coaches need to be able to instruct swimmers, and lifeguards need to quickly be able to determine what could be a call for help or a possibly serious incident. When done properly, a healthy sound environment leads to:

-
- Improved safety
 - Increased visitor wellbeing and satisfaction
 - Greater staff wellbeing
 - Improved communication
-

In order to create a space with all these benefits, it is important to consider all the activities, the people involved and the design of the space itself. This is what Ecophon calls Activity Based Acoustic Design.



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CREATE THE OPTIMUM SOUND, AND ACOUSTIC, ENVIRONMENT

ACTIVITY BASED ACOUSTIC DESIGN

The aim is to tune the room's acoustics to best support the occupant's activities, productivity, efficiency and their ongoing health and wellbeing. This means creating the optimum Room Acoustic Comfort™, where speech clarity, auditory strength (amplification) and reverberation are the main areas to focus on depending on the rooms occupant and activity requirements. This means improving the sound environment by installing, among other things, Class A sound absorbers on ceilings, walls or as suspended baffles. So first, let's look at the types of activities and groups of people involved.

HAVING FUN

- **Activities:** Riding water slides, enjoying floating up and down in waves, jumping into the pool, laughing and talking with friends etc.
- **People:** All ages with different levels of maturity and perception. Good swimmers and beginners. They may have hearing or visual impairments. All-in-all a very mixed group.

LEARNING AND TEACHING

- **Activities:** The pool is a learning environment where people are learning and practising. In addition to swimming they need to communicate continuously
- **People:** Swimming coaches are mainly adults, while students are mostly children of all ages. They must be able to communicate clearly and calmly. Swimming coaches often teach for several hours a day and noise can lead to voice problems, and hearing impairments, such as tinnitus.

CARE AND PHYSICAL THERAPY

- **Activities:** All kinds of physical therapy, from swimming and rehabilitating injuries to water therapy for permanent disabilities and water exercises for elderly people. Communication between therapist and patient is continuous.
- **People:** All ages. Besides the specific reasons for their therapy, there are many things to consider. Care and therapy is more successful in a stress-free environment. People may have hearing impairments. People with visual impairments use sound for orientation. Communication needs to be clear and calm.

RELAXATION

- **Activities:** Relax in whirlpools with different temperatures, spa treatments, talking to friends etc.
- **People:** Mainly adults of all ages. Since the idea is to relax, there should not be any disturbing noise. Conversations should not spread throughout the space and disturb others.



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ACOUSTIC SOLUTIONS FULFILLING DEMANDS

DEFINING THE ACTIVITIES AND THE PEOPLE INVOLVED IS THE START.

The next step is to define the acoustic solution that is needed. And finally we need to make sure the solution is safe and secure and that it can withstand direct water, chloride, high humidity and high temperatures.

1

Reducing sound levels

First and foremost, the acoustic solution for swimming pool areas and waterparks needs to reduce sound levels. This will also lead to increased speech clarity. Therefore, Ecophon recommends:

- A wall-to-wall sound-absorbing ceiling
- Wall absorbers wherever possible and at least on two adjacent walls
- Free-hanging absorbers where a wall-to-wall ceiling is not applicable

2

Water-resistant absorbers

It is important to use absorbers that are unaffected by direct water splashes. Ecophon has developed two surfaces specifically for this:

- Akutex™ HS is a water-resistant surface that withstands direct splashing with water
- Advance film is a high-performance film that is completely water-proof

3

Withstanding high humidity and temperature

All Ecophon sound absorbers recommended for this environment offer class D and are tested according to, and comply with, ISO standard EN 13964:2014. The panels withstand a permanent ambient relative humidity (RH) of 97% at 50°C.

4

Corrosion-resistant C4 grids

All recommended Connect™ grids and mounting accessories are corrosion resistant, with C4 classification according to ISO 12994-6. They also meet the class D requirements of ISO 13964:2014, meaning they tolerate considerably more severe environments than RH 95% and 30°C.

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Chloride-proven products

To make sure they are fit for purpose, all recommended Ecophon absorbers and grids have been tested in environments with a high chloride concentration.

ECOPHON SWIMMING POOL SOLUTIONS OVERVIEW

Ecophon offers several acoustic solutions that live up to all the demands of swimming pool and shower areas. You can choose between and combine wall-to-wall ceilings, wall absorbers and free-hanging absorbers.

EDGE / DESIGN SHAPE		PRODUCT	INSTALLATION AREAS			
			POOL AREA (CONNECT C4)	SHOWER AREA (CONNECT C3)*	POOL AREA	POOL AREA
		Ecophon Hygiene Advance™ A	•	•	•	•
		Ecophon Hygiene Performance™ A	•	•	•	•
		Ecophon Hygiene Performance™ Ds	•	•	•	•
		Ecophon Akusto™ Wall C Akutex HS	•		•	•
		Ecophon Solo™ Circle Akutex HS	•		•	•
		Ecophon Solo™ Square Akutex HS	•		•	•
		Ecophon Solo™ Rectangle Akutex HS	•		•	•
		Ecophon Hygiene Performance™ Baffle C4	•		•	•
		Connect C4	•		•	•

Ecophon offers several acoustic solutions that live up to all the demands of swimming pool and shower areas. You can choose between and combine wall-to-wall ceilings, wall absorbers and free-hanging absorbers.



Modular ceilings



Wall applications



Free-hanging units and baffles



Ecophon hygiene panels contribute to a healthy indoor environment with superior acoustic absorption, low VOC emissions in line with the strictest requirements, and a full chemical transparency with verified Health Product Declarations. The low environmental footprint of our panels are third-party verified in Environmental Product Declarations.

The products do not contribute to fire and the glass wool core of the Hygiene tiles are tested and classified as non-combustible according to EN ISO 1182. Fire classification according to EN 13501-1, see Technical Properties on respectively product.

NOTE

More product and system information such as installation help and sustainability documentation can be found at www.ecophon.com/uk

NOTE

*Due to less chloride in the air, Connect C3 grids, profiles and accessories are sufficient in shower areas.

Remember that environments with high humidity and temperatures need appropriate ventilation.

MOULD RESISTANT	WET WIPING	STEAM CLEANING	LOW/HIGH PRES-SURE WASHING	FIRE CLASS
•	•	•	•	A2-s 1-d0
•	•	•	•	A2-s 1-d0
•	•	•		A2-s 1-d0
•	•			A2-s 1-d0
•	•			A2-s 1-d0
•	•			A2-s 1-d0
•	•	•	•	A2-s 1-d0
•	•	•	•	A1

Green Building Certification Schemes

Green building certification schemes are becoming important tools to encourage and reward social and environmental responsibility. Ecophon acoustic products have excellent sound-absorbing properties but also have other technical qualities that contribute to the interior environment. Choosing Ecophon solutions can therefore help you earn a variety of credits/points towards your certification by, for example, LEED, BREEAM and WELL. For more detailed information about how Ecophon can assist you towards your certification, please contact us.

ECOPHON HYGIENE PERFORMANCE™ A AND Ds



ECOPHON HYGIENE PERFORMANCE™ A

600x600x20 mm
600x600x40 mm
1200x600x20 mm
1200x600x40 mm

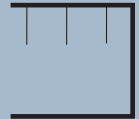
ECOPHON HYGIENE PERFORMANCE™ DS

600x600x20 mm
1200x600x20 mm

Surface	Akutex™ HS
Sound absorption	aw 0.95 edge A 20 mm aw 1.00 edge A 40 mm aw 0.85 edge Ds 20 mm
Influence of climate	Performance™ A, relative humidity of 97% at 50°C according to EN 13964:2014. Performance™ Ds, relative humidity of 95% at 30°C according to EN 13964:2014.
Suspension	Connect™ C4
Chloride-tested	Yes
Colour	White 500. For other colours, please contact Ecophon

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ECOPHON HYGIENE PERFORMANCE™ BAFFLE C4



Size	2700x600x40 mm
Surface	Akutex™ HS
Sound absorption	aw 1.00
Influence of climate	Relative humidity of 95% at 30°C
Suspension	Connect™ C4
Chloride-tested	Yes
Colour	Absorber: White 500. For other colours, please contact Ecophon Connect Thinline Profile: white, light grey or dark grey

ECOPHON HYGIENE ADVANCE™ A



Size	600x600x20 mm 600x600x40 mm 1200x600x20 mm 1200x600x40 mm
Surface	Advance film
Sound absorption	aw 0.85 edge 20 mm aw 0.90 edge 40 mm
Influence of climate	Relative humidity of 97% at 35°C according to EN 13964:2014
Suspension	Connect™ C4
Colour	Absorber: White 141 Grid and profiles: White 500



ECOPHON SOLO™

ECOPHON SOLO™ CIRCLE AKUTEX HS

800x40 mm

1200x40 mm

ECOPHON SOLO™ RECTANGLE AKUTEX HS

1800x1200x40 mm

2400x1200x40 mm

ECOPHON SOLO™ SQUARE AKUTEX HS

1200x1200x40 mm

Surface	Akutex™ HS
Sound absorption	Acoustic values in Aeq for all Solo products, at different installation heights, are available at ecophon.com/uk
Influence of climate	Relative humidity of 95% at 30°C
Suspension	Connect™ C4
Chloride-tested	Yes
Colour	White 500. For other colours, please contact Ecophon



ECOPHON AKUSTO™ WALL C AKUTEX HS

Size	2700x600x40 mm
Surface	Akutex™ HS
Sound absorption	aw 1.00
Influence of climate	Relative humidity of 95% at 30°C
Suspension	Connect™ Thinline Profile in C4
Chloride-tested	Yes
Colour	Absorber: White 500. For other colours, please contact Ecophon Connect Thinline Profile: white, light grey, dark grey or black.

CONNECT™ C4 GRIDS, PROFILES AND ACCESSORIES

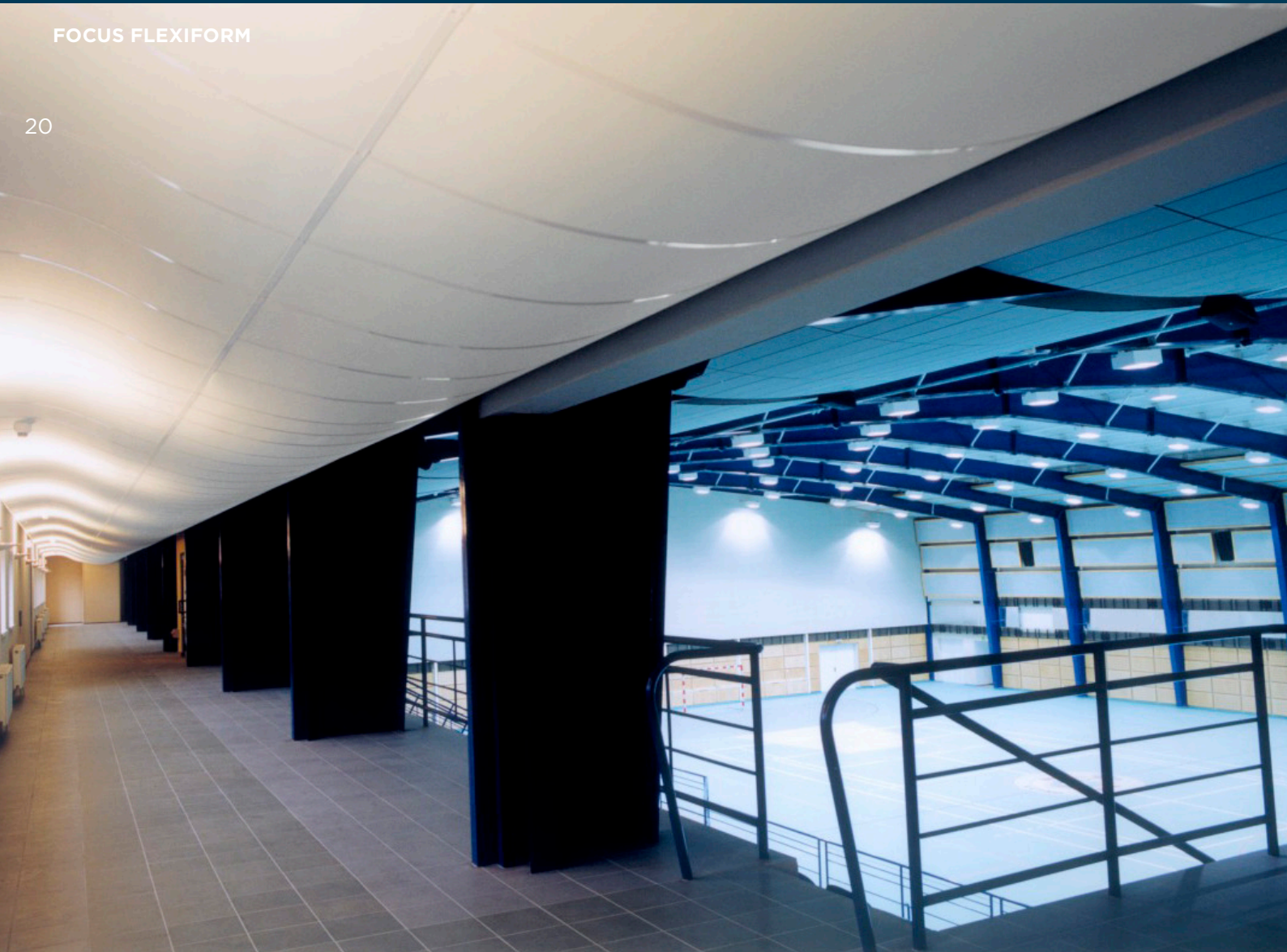
Third-party tested	Yes
Test method	NT MAT 003 12 weeks (≥2,000 hours), where every week consists of: <ul style="list-style-type: none"> • One day (24 hours) of salt spray at 35°C • Four days, each consisting of 8 hours at 100% RH / 40°C followed by 16 hours at 50% RH / 23°C • Two days of drying at 50% RH / 23°C
Corrosivity category	C4 (ISO 12994-6), corrosion resistance category for demanding environments with high humidity and air pollutants
Exposure class	Class D (EN 13964), more severe than RH 95% / 30°C and with corrosive pollutants
Self-repairing T-profiles	No need to seal edges after cutting, they repair themselves
Material	Mainly natural materials with high content of zinc
Colour	Grid and profiles: White 500 Connect Thinline Profile: white, light grey, dark grey or black

CREATE ACOUSTIC **COMFORT**

Leisure centres and waterparks are often divided into different spaces. Each space is designed for a specific activity and therefore requires a different acoustic solution. Here are some of the activities and spaces you might encounter, together with specific recommendations.

FOCUS FLEXIFORM

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WHAT DO WE RECOMMEND, AND FOR WHERE?

FEEL WELCOME An entrance often has large windows, a lot of hard surfaces and a high soffit. The acoustic solution needs to reduce echoes and keep sound levels from escalating.

- Ecophon Focus™
- Ecophon Solo™
- Ecophon Akusto™

CHANGING ROOMS In most changing rooms, sound bounces off the hard walls and ceilings and creates high noise levels. The acoustic solution needs to minimize echoes and reduce sound levels.

- Ecophon Hygiene Performanc™
- Ecophon Super G™

EAT AND DRINK The typical canteen is a large open space with stressful and high noise levels. Sound absorbers can hinder sound from spreading and reduce sound levels.

- Ecophon Master™
- Ecophon Focus™
- Ecophon Akusto™
- Ecophon Solo™

MOVING AROUND

Corridors are often very noisy due to sound bouncing off hard surfaces. The acoustic solution needs to reduce sound levels and prevent sound from spreading.

- Ecophon Focus™
- Ecophon Master™
- Ecophon Akusto™

TRAINING AND EXERCISING

Training facilities are often very noisy spaces where people can't communicate clearly. Proper acoustics reduce sound levels and improve speech intelligibility.

- Ecophon Super G™
- Ecophon Akusto™ Wall Super G



SOLO SQUARE AKUTEX HS

Swimming pool areas with high humidity and occasional direct water.



SOLO CIRCLE AND SOLO RECTANGLE AKUTEX HS

Enjoy freedom of expression whilst achieving optimal acoustics





HYGIENE PERFORMANCE BAFFLE
Water resistant with high design possibilities





SUPER G A

A discreet wall panel which blends into the background whilst end-users with sound clarity in an open space.



HYGIENE PERFORMANCE A

Suitable for humid areas and withstands advanced cleaning,





FOCUS A

Creating a striking colour pattern with Akutex, available in a non-splash zone





HYGIENE PERFORMANCE A

Perfect for a seamless look in a large area whilst achieving class A sound absorption





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. Our uncompromising commitment to transparent sustainable practice. And, as members of the Saint-Gobain Group, to be doing our part in making the world a better home.