Ecophon Master™ Matrix

A perfect match for larger spaces and TABS
This publication shows products from Ecophon product range and those of other suppliers. The specifications are intended to provide a general guide to which products are most suitable for the applications indicated. Technical data is based on results obtained under typical testing conditions or long experience in normal conditions. The specified functions and properties for products and systems are only valid on condition that instructions, installation diagrams, installation guides, service, service instructions and other stated conditions and recommendations have been taken into consideration and followed. Deviation from this, such as changing specific components or products, will mean that Ecophon cannot be held responsible for the function, conversions and properties of the products. All descriptions, illustrations and dimensions contained in this brochure represent general information and shall not form part of any contract. Ecophon reserves the right to change products without prior notice. We disclaim any liability for misprints. For the latest information go to www.ecophon.com or contact your nearest Ecophon representative.

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Idea and layout: navigator. Printer: Skånetryck AB.
Over hundreds of thousands of years, our ears evolved for us to hear perfectly outdoors. But today most of us spend up to 90% of our time indoors. For more than 50 years Ecophon has been on a mission to spread awareness of the importance of creating indoor acoustic environments that resemble what we experience in nature.

Ecophon provides innovative sound-absorbing systems that make it possible to create optimal indoor acoustic comfort, helping people to work, learn, heal and relax. Every system is continuously tested and acoustically measured to make sure that we always improve our systems and exceed standards.

Pleasing to the eye, the ear and the mind
Ecophon offers acoustic systems for all types of indoor environments. We focus on pleasing the ear, but understand that to please the mind, we also have to please the eye with inspiring design. Therefore we offer a complete collection of acoustic ceilings, free-hanging units, wall panels and screens; all to give you the opportunity to create the atmosphere you desire.

Taking care of the environment
Everything Ecophon does is about people, so naturally we strive to limit our environmental impact.

• Our systems are 100% recyclable, we use glass wool that is made of more than 70% recycled glass and a plant-based binder.

• Our absorbers are very lightweight which means lower emissions from transportation.

• We use renewable energy in our facilities and never put any harmful additives into our water-based paints.

• We turn our production waste into pellets that are used to support drainage in landfills.

Ecophon – a sound effect on people.
Ecophon Master™ Matrix provides new ways to create great acoustics and appealing design effects in large spaces. Based on structured freedom, Master Matrix lets you create floating acoustic ceilings inspired by patterns and rhythm. Use it to generate linear motion or variations of large, repetitive elements, or make it interact with pipes, tubes and light installations to create your own unique design.

Master Matrix is a true innovation, meeting visual and functional demands that have previously not been possible to combine. The design scope includes a number of panel shapes and sizes and a tailored Connect grid system. Unleash your creativity and explore new stylish ways to enhance your design vision.
Ecophon Master™ Matrix is designed to be extremely quick and easy to install, while at the same time providing superior accuracy with no need for post-adjustment. This makes Master Matrix the perfect choice for large projects where, for various reasons, acoustic wall-to-wall ceilings are not appropriate.

The Master Matrix system is based on 40mm thick acoustic absorbers in square and rectangular shapes, and a suspended Connect grid. The panels are installed from below.

**Accuracy is just a click away**

A central aspect of the system’s uniqueness is that the panels are literally clicked into the grid, so they are quick and easy to get into position with perfect accuracy. The click in and out function also makes every panel individually demountable from below, like a hatch, for easy access to the soffit. The limited amount of fixing points in the soffit also contributes to a smooth installation procedure.

**Master Matrix installation benefits in short**

- Click-in for safe, quick and easy installation
- Superior accuracy
- No need for post-adjustment
- Limited amount of fixing points in the soffit
- Individually demountable panels
- Only whole panels – no cut-off pieces or panel waste on site
- A complete, turnkey system
- Enables time and cost control in large projects
Sound comfort in TABS buildings

The number of building projects involving TABS is growing rapidly. The use of exposed concrete as part of the thermal system dramatically lowers energy consumption and makes TABS buildings very environmentally friendly. Ecophon Master™ Matrix provides the opportunity to care for both thermal and acoustic requirements.

Buildings with walls and ceilings of bare concrete present acoustic challenges. Sound will bounce off the hard surfaces and create echoes that spread across the office. The sound level will escalate to the point where it will be hard to concentrate or communicate at all. This will create stress and a generally poor working environment.

A perfect solution for TABS

Master Matrix provides unique opportunities for creating floating acoustic ceiling areas in TABS buildings. Here you cannot use a wall-to-wall acoustic ceiling, because the high coverage ratio would constrain a satisfactory thermal, cooling effect from the concrete. Master Matrix is provided in modular sizes that are compatible with the most used building modules for TABS. If you install in rows, the air can circulate and cool down exactly the way it is supposed to. Our tests show that acoustic absorbers covering 60% of the floor area are an ideal solution for TABS buildings, achieving good acoustics with a minimal effect on the thermal conditions. To create an optimal sound environment, Master Matrix should be complemented with Ecophon Akusto™ Wall and Ecophon Akusto™ Screen.

Thanks to the ingenious construction of Master Matrix, installations can be done with accuracy and cost effectiveness in very large spaces. So now you don’t have to choose between energy efficiency and acoustic comfort when designing a TABS building – you can simply have them both.

What is TABS?
TABS stands for Thermally Activated Building Systems, which is a technique for using the thermal mass of the building (e.g. concrete surfaces) for cooling purposes. TABS also applies to passive systems based on the same building technique.

Challenges with TABS
Without a sound absorbing system, the area will be close to unbearable to spend time in.
Connect Cross tee 900 has a patented, easy to use coupling. An audible click signals when the Cross tee is in the correct position in the Connect Main runner. The coupling contributes to a safe installation which is easy to demount. The capping is available in three standard colours.

All Master Matrix panels have pre-installed anchor screws for fast and accurate installation.

The special Connect Panel connector was invented by Ecophon. This is where the panels are clicked into place, and the panel connector is also what makes the unique hatch-function possible.

Connect Cross tee 600 has a patented, easy to use coupling. An audible click signals when the Cross tee is in the correct position in the Connect Main runner. The coupling contributes to a safe installation which is easy to demount. The capping is available in three standard colours.

The excellent sound absorption of our products is achieved by the unique properties of the core material; glass wool. Our glass wool is very environmentally friendly since it consists of more than 70% recycled glass and a plant-based binder. The Master Matrix system is 100% recyclable.

The rigid Connect Main runner has extra torsional strength and stability for a safe installation and excellent load bearing capacity. The capping is available in three standard colours.

Retroreflection coefficient values for this type of painted surface range from 0 to 120. The optimal value is around 60.

The surface of Master Matrix panels has a retroreflection coefficient of 63 mcd/(m²lx).

Modular sizes:
- 600x1040mm
- 600x1200mm
- 600x2400mm
- 1200x1040mm
- 1200x1200mm
- 2400x1040mm
- 2400x1200mm

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ACCURATE

All Master Matrix panels have pre-installed anchor screws for fast and accurate installation.

Click

The special Connect Panel connector was invented by Ecophon. This is where the panels are clicked into place, and the panel connector is also what makes the unique hatch-function possible.

NINETY DEGREES

The rigid Connect Main runner has extra torsional strength and stability for a safe installation and excellent load bearing capacity. The capping is available in three standard colours.

ENVIRONMENT

The excellent sound absorption of our products is achieved by the unique properties of the core material; glass wool. Our glass wool is very environmentally friendly since it consists of more than 70% recycled glass and a plant-based binder. The Master Matrix system is 100% recyclable.

Engineered to perfection

Every panel is easily demountable and... can be used as a hatch.

... can be used as a hatch.

ACCurATE

NINETY DEGREES

ENVIRONMENT

Connect Cross tee 900 has a patented, easy to use coupling. An audible click signals when the Cross tee is in the correct position in the Connect Main runner. The coupling contributes to a safe installation which is easy to demount. The capping is available in three standard colours.

All Master Matrix panels have pre-installed anchor screws for fast and accurate installation.

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Connect Cross tee 600 has a patented, easy to use coupling. An audible click signals when the Cross tee is in the correct position in the Connect Main runner. The coupling contributes to a safe installation which is easy to demount. The capping is available in three standard colours.

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ENVIRONMENT

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Engineered to perfection. Every panel is easily demountable and can be used as a hatch.

The special Connect Panel connector was invented by Ecophon. This is where the panels are clicked into place, and the panel connector is also what makes the unique hatch-function possible.

A safe and sound indoor environment
Our systems are tested against stringent classification criteria to ensure that our products contribute to a healthy indoor environment. The systems do this by minimising dust particles and emissions, as well as being easy to clean and promoting allergen-free environments.

Installation and design possibilities
The Master Matrix panels are 40mm thick and there are seven modular sizes to choose from. This gives you almost endless possibilities to create your own unique design.

Installation diagrams are available on the following pages.

Connect grid systems and accessories
In addition to our absorbers, Ecophon offers grid systems, profiles and accessories which have been engineered to provide you with an optimised complete package; a superior quality acoustic ceiling system.

A safe and sound indoor environment
Our systems are tested against stringent classification criteria to ensure that our products contribute to a healthy indoor environment. The systems do this by minimising dust particles and emissions, as well as being easy to clean and promoting allergen-free environments.
Ecophon Master™ Matrix

Ecophon Master Matrix is a patent pending acoustic ceiling system for larger areas where high coverage is required but a wall to wall solution not possible or wanted. The system provides quick and easy installation with high levels of accuracy, thanks to pre-installed fixing devices and “click-in” connection to the grid system. Each panel has a built in hatch function, and can easily be demounted. The system can either be installed with high coverage ratio, (approx. 95%), in modules of 1200 mm with a 40 mm gap between the panels giving a floating appearance (M344), or in rows of 1040 mm modules (M345). The latter is mainly designed for TABS solutions giving a coverage ratio of approx. 60%, at building module 1250 mm. Panels are available in different formats and sizes giving a vast range of design possibilities.

The system consists of Ecophon Master Matrix panels and Ecophon Connect grid system with an approximate weight of 5-6 kg/m². The panels are manufactured from high density glass wool utilizing 3RD Technology. The visible surface of the panel has an Akutex FT coating and the back of the tile a glass tissue. Edges are straight cut and painted. The Connect grid and suspension system are manufactured from galvanized steel and aluminum.

**TECHNICAL PROPERTIES**

**ACOUSTIC** The first diagram refers to clusters >10 m². The second diagram to a cluster of four panels (1200x1040 mm) in a row with a distance of 40 mm. If the clusters are arranged with distances between the clusters <0,5 meters, the Aeq per cluster will be slightly reduced.

Sound Absorption: Test results according to EN ISO 354.

Classification according to EN ISO 11654.

<table>
<thead>
<tr>
<th>Product</th>
<th>Thickness</th>
<th>Classification</th>
<th>T24</th>
<th>Fire Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Matrix</td>
<td>40</td>
<td>a2-s1,d0</td>
<td>M1</td>
<td>Class A2 x1,40</td>
</tr>
</tbody>
</table>

**VISUAL APPEARANCE** White Frost, nearest NCS colour sample S 0500-N, 85% light reflectance [at which more than 99% is diffuse reflection]. Retro reflection coefficient 63 mcd/(m²lx). Gloss < 1.

**INFLUENCE OF CLIMATE** The tiles withstand a permanent ambient RH up to 95% at 30°C without sagging, warping or delaminating [ISO 4611].

The units should however not be installed in areas/premises where the ambient relative humidity (RH) and the temperature exceed 70% and 30°C respectively.

**INDOOR CLIMATE** Certified by the Indoor Climate labelling, emission class M1 for building materials and recommended by the Swedish Asthma and Allergy Association.

**ENVIRONMENTAL INFLUENCE** Glass wool core utilising 3RD Technology. Granted the Nordic Swan eco-label. Fully recyclable.

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

**MECHANICAL PROPERTIES** The panels can take small loads with largest aperture diameter of 100 mm. The load is restricted to maximum 250g between two Panel cross bars. For heavier loads see installation guide.

**INSTALLATION** For design possibilities including installation direction and integrations, see installation guides, installation diagrams and drawing aid. For information regarding minimum overall depth of system see quantity specification.
**TECHNICAL PROPERTIES**

The Ecophon Connect grid system with an approximate weight consists of Ecophon Master Matrix panels and sizes giving a vast range of design possibilities. The system is manufactured from galvanized steel and aluminum, and edges are straight cut and painted. The Connect grid panel has an Akutex FT coating and the back of the tile a glass wool utilizing 3RD Technology. The visible surface of the Ecophon Connect grid system with an approximate weight gives quick and easy installation with high levels of accuracy, thanks to pre-installed fixing devices and “click-in” connectors.

### Classification according to EN ISO 11654

- **Sound Absorption:** Test results according to EN ISO 354.
- **Sound Insulation:** Not applicable.

### Classification according to EN ISO 1182

- **Reaction-to-fire classification:** E0, 85% light reflectance (of which more than 99% is diffuse reflection).
- **Non-combustibility:** E0.
- **Fire safety:** Class A2-s1,d0.

### Environment influence

- **Air tightness:** Graded "B".
- **Asthma and Allergy Association.:** Class M1 for building materials and recommended by the Swedish National Board of Housing, Building and Planning.
- **Daily dusting and vacuum cleaning:** Weekly wet wiping.
- **Certified by the Indoor Climate Labelling, emission:** Klass 1.
- **Technology:** Granted the Nordic Swan eco-label.
- **Fully recyclable.**

### Acoustic

- **Aeq, Equivalent absorption area per cluster (m² sabin):**
  - 0.0
  - 0.2
  - 0.4
  - 0.6
  - 0.8
  - 1.0
  - 2.0
  - 4.0
  - 8.0

### Accessories

- **For design possibilities including installation direction and size, mm max live load (n):**
  - 0
  - 5

### Quantity specification [excl. wastage]

<table>
<thead>
<tr>
<th>Section of Master Matrix system</th>
<th>Master Matrix</th>
<th>Connect 124 Main runner, installed with spacing 900 mm and 300 mm</th>
<th>Connect 124 Cross tee, l=900 mm, installed with spacing 1800 mm</th>
<th>Connect 124 Cross tee, l=300 mm, installed with spacing 2400 mm</th>
<th>Connect Tube hanger 240, installed with spacing 1800 mm</th>
<th>Sprint, included in Connect Tube hanger 240</th>
<th>Connect Installation screw M6</th>
<th>Connect Fixing plate C3, installed with spacing 1800 mm</th>
<th>Connect Panel cross bar</th>
<th>Connect Panel connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size, mm</td>
<td>600x1200</td>
<td>600x2400</td>
<td>1200x1200</td>
<td>2400x1200</td>
<td>600x1200</td>
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<td>1200x1200</td>
<td>2400x1200</td>
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<tr>
<td>1 Master Matrix</td>
<td>1,39/m²</td>
<td>0,70/m²</td>
<td>0,70/m²</td>
<td>0,35/m²</td>
<td>0,11/m²</td>
<td>0,11/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
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<tr>
<td>2 Connect 124 Main runner</td>
<td>1,67/m²</td>
<td>1,67/m²</td>
<td>1,67/m²</td>
<td>1,67/m²</td>
<td>0,42/m²</td>
<td>0,42/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
</tr>
<tr>
<td>3 Connect 124 Cross tee</td>
<td>0,42/m²</td>
<td>0,42/m²</td>
<td>0,42/m²</td>
<td>0,42/m²</td>
<td>0,11/m²</td>
<td>0,11/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
</tr>
<tr>
<td>4 Connect 124 Cross tee</td>
<td>0,11/m²</td>
<td>0,11/m²</td>
<td>0,11/m²</td>
<td>0,11/m²</td>
<td>0,11/m²</td>
<td>0,11/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
</tr>
<tr>
<td>5 Connect Tube hanger 240</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
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<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
</tr>
<tr>
<td>6 Sprint, included in Connect</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
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<td>0,95/m²</td>
<td>0,95/m²</td>
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<tr>
<td>7 Installation screw M6</td>
<td>0,00/m²</td>
<td>0,00/m²</td>
<td>0,00/m²</td>
<td>0,00/m²</td>
<td>0,00/m²</td>
<td>0,00/m²</td>
<td>0,00/m²</td>
<td>0,00/m²</td>
<td>0,00/m2</td>
<td>0,00/m²</td>
</tr>
<tr>
<td>8 Connect Fixing plate C3</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m²</td>
<td>0,95/m2</td>
<td>0,95/m²</td>
</tr>
<tr>
<td>9 Connect Panel cross bar</td>
<td>2/panel</td>
<td>4/panel</td>
<td>2/panel</td>
<td>2/panel</td>
<td>2/panel</td>
<td>2/panel</td>
<td>2/panel</td>
<td>2/panel</td>
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<td>2/panel</td>
</tr>
</tbody>
</table>

Δ Min. overall depth of system: 255 mm

Quantity specification based on 40 mm gap between all panels.
INSTALLATION DIAGRAM [M345] FOR ECOPHON MASTER MATRIX IN ROWS

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QUANTITY SPECIFICATION [EXCL. WASTAGE]

<table>
<thead>
<tr>
<th></th>
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<th>Size, mm</th>
<th>600x1040</th>
<th>1200x1040</th>
<th>2400x1040</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Ecophon Master Matrix in rows</td>
<td></td>
<td>1.60/m²</td>
<td>0.80/m²</td>
<td>0.40/m²</td>
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<tr>
<td>2</td>
<td>Connect 124 Main runner, installed with spacing 900 mm</td>
<td></td>
<td>1.93/m²</td>
<td>1.93/m²</td>
<td>1.93/m²</td>
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<tr>
<td>3</td>
<td>Connect 124 Cross tee, l=900 mm, installed with spacing 1800 mm</td>
<td></td>
<td>0.49/m²</td>
<td>0.49/m²</td>
<td>0.49/m²</td>
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<tr>
<td>4</td>
<td>Connect Tube hanger 240, installed with spacing 1800 mm</td>
<td></td>
<td>1.07/m²</td>
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<tr>
<td>5</td>
<td>Sprint, included in Connect Tube hanger 240</td>
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<tr>
<td>6</td>
<td>Connect Installation screw MVX</td>
<td></td>
<td>1.07/m²</td>
<td>1.07/m²</td>
<td>1.07/m²</td>
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<tr>
<td>7</td>
<td>Connect Fixed plate C3, installed with spacing 1800 mm</td>
<td></td>
<td>1.07/m²</td>
<td>1.07/m²</td>
<td>1.07/m²</td>
</tr>
<tr>
<td>8</td>
<td>Connect Panel cross bar</td>
<td></td>
<td>2/panel</td>
<td>2/panel</td>
<td>3/panel</td>
</tr>
<tr>
<td>9</td>
<td>Connect Panel connector</td>
<td></td>
<td>4/panel</td>
<td>4/panel</td>
<td>6/panel</td>
</tr>
</tbody>
</table>

Δ Min. overall depth of system: 255 mm

Quantity specification based on 40 mm gap between panels in installation direction.

See Quantity specification
The left column shows modular sizes and the right exact panel sizes.
For heavier integrations use Connect Cross tee and Connect Angle bracket.
Live load/load bearing capacity
### Installation Diagram (M 345) for Ecophon Master Matrix

1. **Ecophon master matrix in rows**
   - 1,60/㎡
   - 0,80/㎡
   - 0,40/㎡

2. **Connect T24 main runner, installed with spacing 900 mm**
   - 1,93㎡/㎡

3. **Connect T24 cross tee, l=900 mm, installed with spacing 1800 mm**
   - 0,49㎡/㎡

4. **Connect tube hanger 240, installed with spacing 1800 mm**
   - 1,07㎡/㎡

5. **Sprint, included in connect tube hanger 240**

6. **Connect Installation screw mVl**
   - 1,07㎡/㎡

7. **Connect fixing plate c3, installed with spacing 1800 mm**
   - 1,07㎡/㎡

8. **Connect panel cross bar 2/panel**
   - 2/panel

9. **Connect panel connector 4/panel**
   - 4/panel
   - 6/panel

**Δ min. overall depth of system:** 255 mm

**Quantity specification based on 40 mm gap between panels in installation direction**

<table>
<thead>
<tr>
<th>Size, mm</th>
<th>Max Live Load (n)</th>
<th>Min Load Bearing Capacity (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>600x1040</td>
<td>5 160</td>
<td></td>
</tr>
<tr>
<td>1200x1040</td>
<td>5 160</td>
<td></td>
</tr>
<tr>
<td>2400x1040</td>
<td>5 160</td>
<td></td>
</tr>
</tbody>
</table>
Ecophon dates back to 1958, when the first sound absorbers from glass wool were produced in Sweden to improve the acoustic working environment. Today the company is a global supplier of acoustic systems that contribute to good room acoustics and a healthy indoor environment with the focus on offices, education, health care and industrial manufacturing premises. Ecophon is part of the Saint-Gobain Group and has sales units and distributors in many countries.

Ecophon efforts are guided by a vision of earning global leadership in room acoustic comfort through sound-absorbing systems, enhancing end-user performance and wellbeing. Ecophon maintains an ongoing dialogue with government agencies, working environment organisations and research institutes, and is involved in formulating national standards in the field of room acoustics where Ecophon contributes to a better working environment wherever people work and communicate.

www.ecophon.co.uk