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EcoPET

USER GUIDE

valid from 2025

Architected Sound

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GENERAL INFORMATION

This manual has been prepared to assist with the installation of EcoPET panels. It is not a comprehensive guide, and for optimal results, the use of a professional, qualified installer is recommended.

Architected Sound assumes no responsibility for work and actions taken during installation. Please refer to the Terms of Sale of Architected Sound.

This installation guide provides only recommendations; if you have any questions regarding installation techniques, please contact the distributor or the sales representative of Architected Sound.

Remember:

Due to visual color differences on needle-punched surfaces, **before installing the panels, lay them on a clean floor**, check for color variations, and then adjust the installation direction accordingly. (Pay special attention to this, especially in environments with bright light sources).

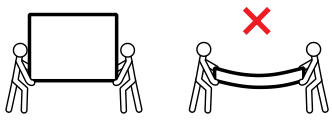
Dark-colored panel series are more likely to exhibit visual chromatic aberration.

Attention!

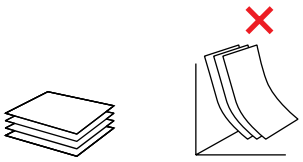
- Exact color matching between product batches cannot be guaranteed. Products from different batches should not be used within the same project.
- The fiber blend and surface texture may vary.
- Please verify that all panels have the correct design, color, shape, and batch number (if required).
- Thickness differences due to production tolerances and minor substrate irregularities should be considered.
- EcoPET has a specific fiber direction. Stickers marking the top side may be placed in the same corner of each smooth panel to assist with proper orientation.
- Claims will not be accepted after panel installation.
- During panel installation and construction work, ensure compliance with appropriate health and safety regulations, such as protective clothing, safety glasses, etc.

HANDLING AND STORAGE

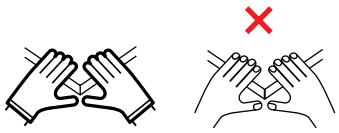
Always transport boxes and panels in a **vertical position**.



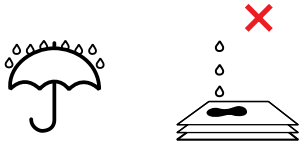
Always store boxes and panels **flat**.



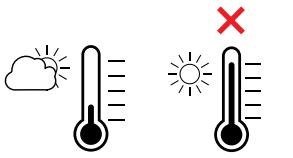
When working with light-colored panels, always wear **protective gloves**.



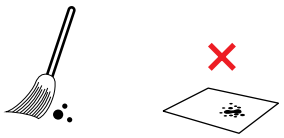
Store in a dry place and **avoid moisture.**



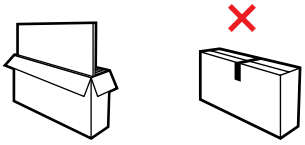
Store in a **cool, dry place** away from direct sunlight. Avoid temperatures of **65°C or higher**.



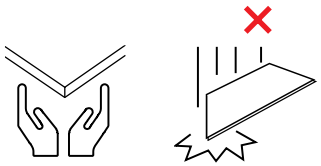
Keep all surfaces clean during storage and production.



Upon delivery, **check** the entire shipment for order accuracy and any potential damages.



Protect the edges of the packaging and the product



Important Information:

Always use the correct type of adhesive for both the acoustic panels and the substrate. Remember that improper adhesive may seep through the panels and leak, potentially damaging the product and the wall.

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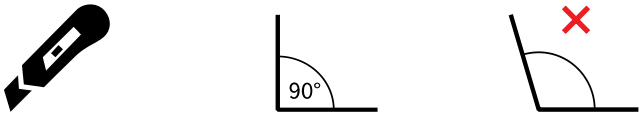
INSTALLATION

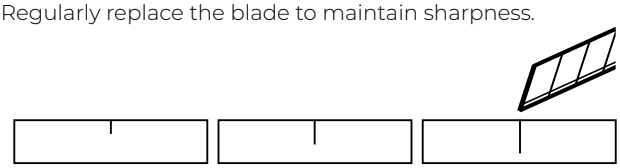
Machine Processing and Cutting

- EcoPET can be cut using a CNC machine, a circular saw, or a band saw with a wavy-toothed blade and a metal guide, as well as a sharp knife.
- Do not use saws and blades with serrated teeth set at an angle.
- Always perform a test cut on scrap material first, as different board types with varying thicknesses and densities may behave differently during cutting.
- When cutting, feed the material in the opposite direction of the blade or tool rotation, maintaining a steady and slow feed rate to prevent overheating.
- Fast feeding can cause overheating, which may result in material melting or bonding at the contact points with the saw blade.
- Secure the EcoPET sheet during cutting to minimize vibrations.

Manual Cutting/Trimming



- Make sure the blade is inserted into the panel at a 90° angle to the surface to ensure even edges and the best result for edge-to-edge joints.
- To avoid beveled edges, ensure the blade is sharp, not too long, and not flexible.
- Regularly replace the blade to maintain sharpness.

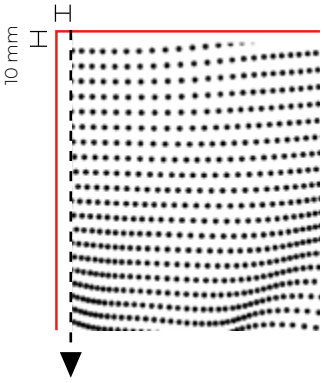


Cutting Panels with a Printed

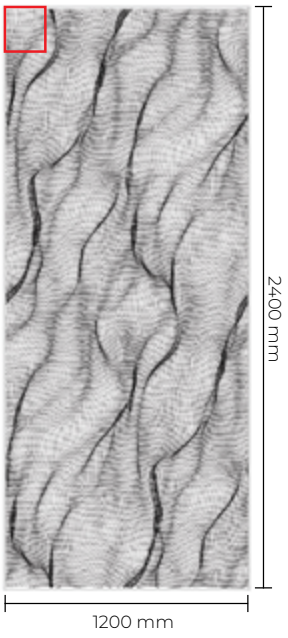
- Due to production tolerances, EcoPET prints are placed slightly inward from the panel edge, leaving an unprinted border around the edges. This border should be trimmed when joining panels edge to edge.
- The unprinted edge may vary by approximately 10 mm per panel, depending on the print placement.
- To facilitate precise alignment, some designs include a printed dashed line indicating the trimming area to ensure an exact pattern match when joining panels seamlessly

Example:

An unprinted border approximately 10 mm wide.



Dashed line for trimming of panel to pattern match edge to edge.



Installation and Adhesives

- EcoPET can be mounted directly on the wall using a commonly available **construction adhesive** or **contact adhesive**. The installer is responsible for ensuring that the chosen adhesive is suitable for both the product and the substrate. The responsibility for selecting the correct adhesive for the product and surface rests with the person performing the installation.
- Prepare the workspace by laying down a clean **protective sheet** and placing the panels face-down on the floor.
- Ensure that the wall or ceiling surface is clean, free of dust, and without imperfections that could reduce adhesion. When gluing onto drywall (gypsum board), pay attention to the load-bearing capacity of the wall.
- EcoPET panels are **flexible** and can bend easily. To avoid creases or damage, ensure they are properly supported or held by **at least two people** during handling. While there is no fixed mounting pattern, it is advisable to use attachment points spaced 450 mm to 600 mm apart, both vertically and horizontally. In most cases, this setup will provide adequate stability for the installed panels.
- Adhesives should always be used according to the manufacturer's instructions. Before final installation, it is recommended to perform a test application.
- After applying the adhesive layer, press the panel **gently and evenly** onto the surface. Ensure that pressure on the edges is minimal to prevent adhesive from seeping out.

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Forming

- During **thermoforming**, EcoPET (made from PET fibers) exhibits characteristics typical of most plastic-based products.
- The panel placed in a mold must be heated to the appropriate **temperature** and then left to **harden**.
- Bent corners are achieved similarly by cutting a beveled section on the back of the panel, leaving approximately **5 mm of material thickness** to allow bending at the required angle.
- Beveled edges can be cut using a knife.
- The angle of the beveled edge should match the required bending angle of the panel – for example, a **90° corner** requires a **90° beveled edge**.

Drilling

- When drilling, ensure that the **EcoPET sheet is securely held or clamped** to prevent damage or slipping, which could pose a risk to the installer.
- Drill bits used for **plastic materials** are suitable for drilling EcoPET.
- The drill bits should have two flutes, a rake angle between 60° and 90°, and a point angle between 12° and 18°.
- For larger holes, use a hole saw with a diamond tip. Start drilling at a **45° angle**, then gradually straighten the drill as it cuts through the panel.
- The optimal drill speed, feed rate, and pressure depend on the hole diameter and sheet thickness. For **smaller holes**, use a drill speed no higher than 1750 RPM.For **larger holes**, use a low speed, not exceeding 350 RPM.
- To efficiently remove chips from the **drilled hole, use drill bits with wide, polished flutes**, as they reduce friction and help prevent overheating and material sticking.
- Drill bits with a larger cutting edge angle create **smoother holes** compared to those with a smaller angle.
- While drilling, **periodically withdraw the bit** to clear chips from the hole.
- The drill bit should be positioned at least 15 mm away from corners and have extra clearance to allow for thermal expansion and contraction of the material. Ensure that the drilled holes have smooth edges.
- Use **washers** for better load distribution.
- If frequent disassembly of the EcoPET material is required, use **metal threaded inserts**.

PRODUCT FEATURES / CLEANING

- **Acoustics**: Sound absorption coefficient $\alpha_{w,\,max}$ = 1.00
- **Density**: 1,000 – 4,600 g/m²
- **Fire Reaction Class**: Can be manufactured with fire resistance up to B-s2, d0 for panel thicknesses of 9, 12, and 24 mm
- **Bonding Temperature**: > 400°C
- **Water Solubility**: Insoluble
- **Composition**: 100% polyester fibers (polyethylene terephthalate), with up to 75% recycled content
- **Physical Hazards**: Polyester fiber-based product is chemically stable and resistant to oils, solvents, weak acids, and weak bases. EcoPET products are formaldehyde-free according to EN 717-1:2004 and comply with RoHS and REACH directives.
- **Health Hazards**: EcoPET generally does not pose a risk to the eyes or skin, even in case of ingestion or inhalation, due to its physical structure. The product is non-irritating and poses no health risks during manufacturing, handling, or use.
- **First Aid**: The product is non-toxic. If a significant amount is swallowed, administer water and induce vomiting. Burns from molten material require medical treatment and care.
- **Material Handling Safety:** No special storage or transport conditions are required, except for those described on the previous pages. Keep EcoPET material/products in a dry place. General occupational health and safety (OHS) principles are recommended.
- **Disposal:** At the end of its lifecycle, uncontaminated EcoPET should be recycled. Unless prohibited by regulations, it may be disposed of in municipal waste or incinerated.
- **Attention:** Precautions should be taken against electrostatic discharge.
- **Product Cleaning:** To remove dirt, it is recommended to use standard lint rollers. Most marks on EcoPET can be cleaned with a mild detergent solution, then rinsed and dried. Avoid excessive scrubbing; stains should only be spot-cleaned. Do not use a stiff brush when vacuuming. EcoPET can be disinfected using isopropanol (isopropyl alcohol) or ethanol diluted to 70% with water. Disinfectants containing quaternary ammonium compounds may also be effective.