



PET ACOUSTIC PANEL INSTALLATION GUIDE

Important Information

Installation

Please review the complete Installation Guide before beginning the installation process. This guide aims to offer useful information about PET panels for installers. DeFelt does not assume any responsibility for actions taken or omitted during installation. This guide is not a comprehensive manual; it requires the application of the installer's professional expertise.

If you have any questions about the application or methods, please reach out to DeFelt.

Terms of Trade

All PET panels are inspected prior to shipment. DeFelt is not liable for damage incurred during shipping or storage; customers should thoroughly examine all items upon delivery and document any visible damage on the delivery receipt. For the customer's protection, subsequently discovered concealed damage must be reported immediately to the carrier. Claims to DeFelt will not be considered if the sheet has been worked on by the customer or others. No claims for labor charges will be allowed in any circumstances.

Work Safety

For safety reasons, it is advised that individuals handling PET panels wear suitable protective gear. Despite the product not emitting any off-gases, masks and gloves should be worn to ensure the highest level of safety. To obtain an SDS form, please reach out to DeFelt.

Cleaning

See the Handling and Cleaning Guide for more information.

PET Panel Specs

See the PET Panel Spec Sheet for product details and information.

Product & Installation Questions

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✉ contact@defelt.com

🌐 www.defelt.com

Processing methods

Our state-of-the-art, digital equipment enables an individual approach to each project and fully personalisation. To find out more about our felt processing options, please take a look below.



Digital Cutting

ZUND - high quality digital cutting , clean cut lines. Precise cutting of straight lines, curves. Cutting angles 0°, 15°, 22.5°, 30°, 45° V-cut.

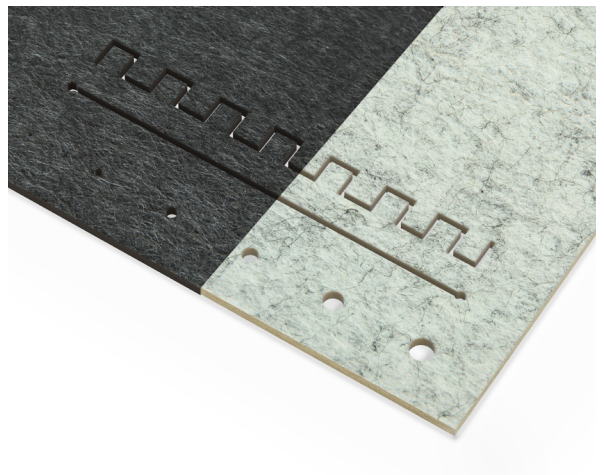
Extremely fast processing with the possibility of customisation, “odourless” process.



Laser Cutting

Precision and the ability to cut smaller finer details and small radii of curves. Laser equipment also allows surface engraving.

During the cutting process with the laser beam, a burning process occurs, so the edges of the felt may be harder and may change colour slightly, most noticeable on light colours. Fast processing and personalisation possible, the remaining characteristic scent.



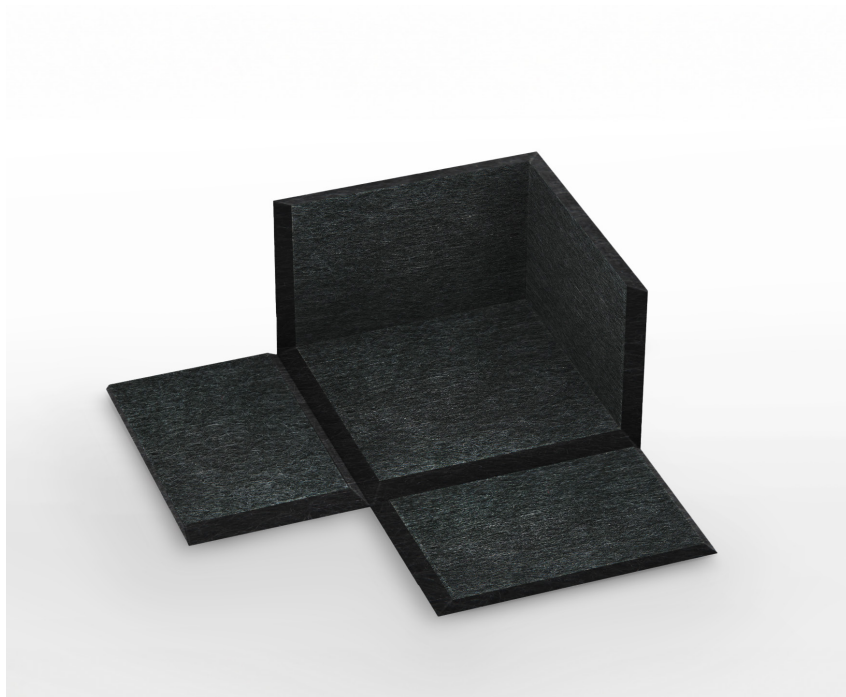
Manual Cutting

When cutting the PET Felt manually we recommend using a sharp knife combined with a ruler for the best possible result. A utility knife or precision knife will be sufficient. Cut the PET Felt step by step and follow the same cutting path several times for a better result.



Processing methods

Felt can be modified not only by cutting and incising, but also by completely deforming and shaping its surface. Thanks to these advanced processing techniques, we can offer unique and personalised products that meet the highest quality standards.



V-cut folding

V-cut folding PET felt involves cutting V-shaped grooves into the material, making it easier to bend along the cuts. This process allows the felt to be folded into precise shapes and angles. The material's flexibility and durability make it suitable for various design applications, retaining its new shape after folding.

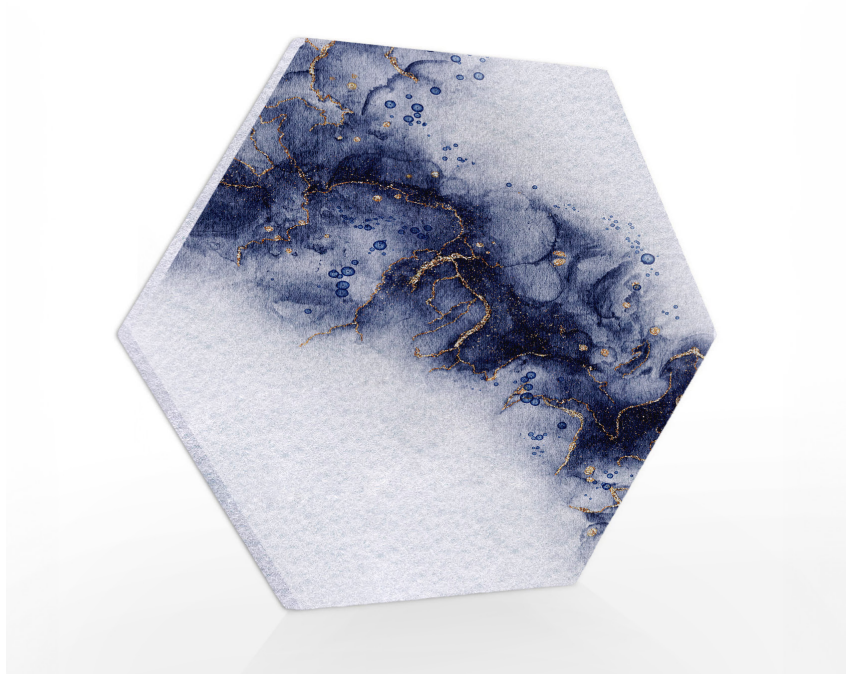


Vacuum Termoforming

The possibility of giving a three-dimensional shape. The heated felt sheet becomes malleable and, with the help of a vacuum it is shaped into a new form based on the mold.

Processing methods

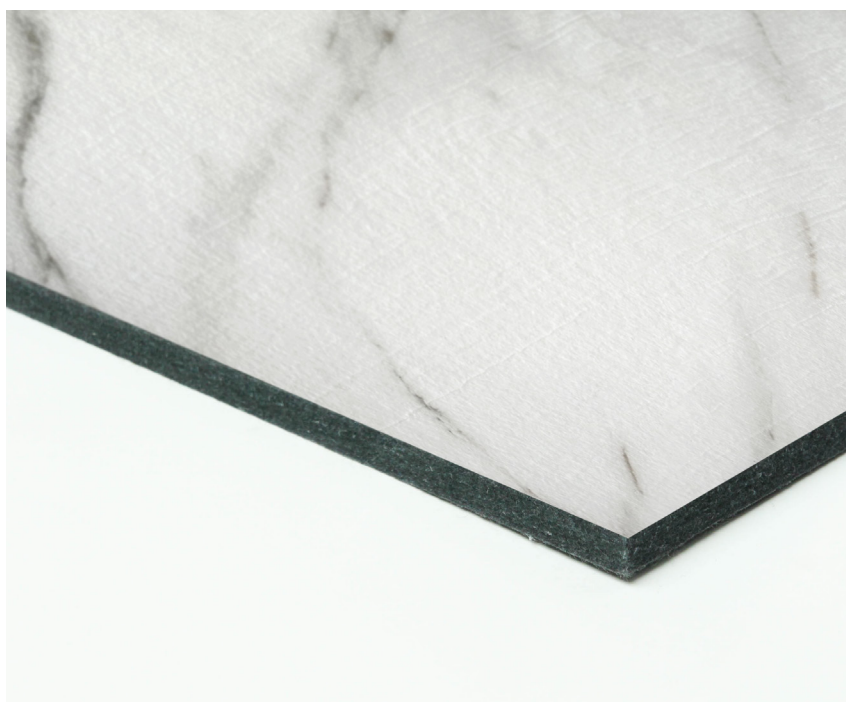
Felt can be modified not only by cutting and incising, but also by completely deforming and shaping its surface. Thanks to these advanced processing techniques, we can offer unique and personalised products that meet the highest quality standards.



Digital Direct Print

Applying patterns of different colors. Printing possible on both sides of the felt. Printed graphics may include tonal transitions.

Great freedom to change pattern.



ForFresco®

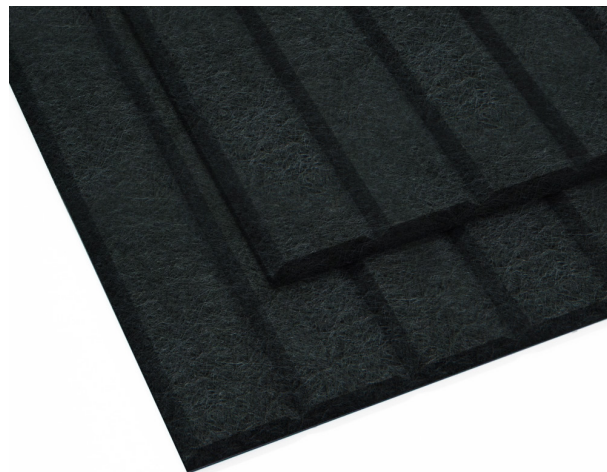
Forfresco is our patented decorating system using thin poluretane membrane. This membrane is watertight. It could be digital printed technology to decorate. It is then appleyed as a "skin" through lamination.

We can also use through lamination wooden varnish, textile, linen and leather.

Typical ways of using felt

CNC V-Groove Cutting

The digital cutting process allows for the creation of V-grooves. A V-groove forms a hinge in the material, enabling it to be folded seamlessly into angles or shapes. Unlike kerf cutting, this technique produces angular lines instead of smooth, curving lines. To maintain the material's strength and the hinge, there is a maximum cutting depth. For instance, PET felts can be folded seamlessly at V-grooves with a 45° angle and a cutting depth of 7mm.



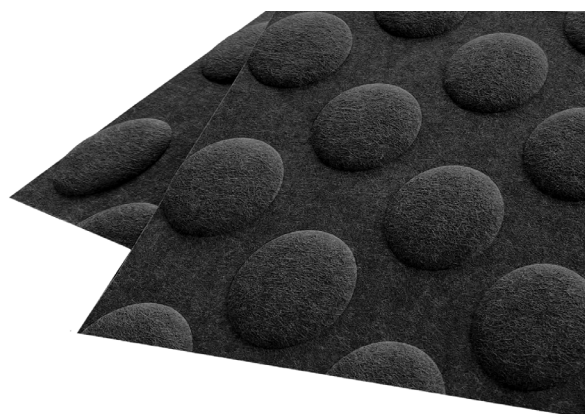
Half-cutting / Notching

By incising the material to a certain depth, curves can be formed. Due to the fibrous structure of the felt, the cuts are permanent, they do not break and are difficult to tear. This makes it possible, for example, to round off corners and create an interesting pattern on the outside.

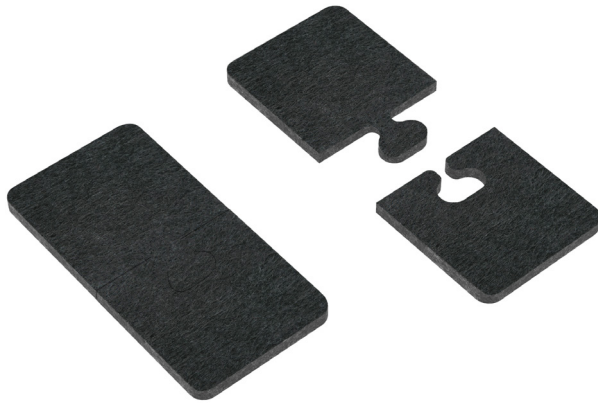


Termoforming

Thermoforming PET felt is an effective way to create custom shapes and designs. By applying heat, the material becomes pliable, allowing it to be molded into various forms. Once cooled, it retains the desired shape, providing a durable and aesthetically pleasing result.



Typical Applications



Interlocking

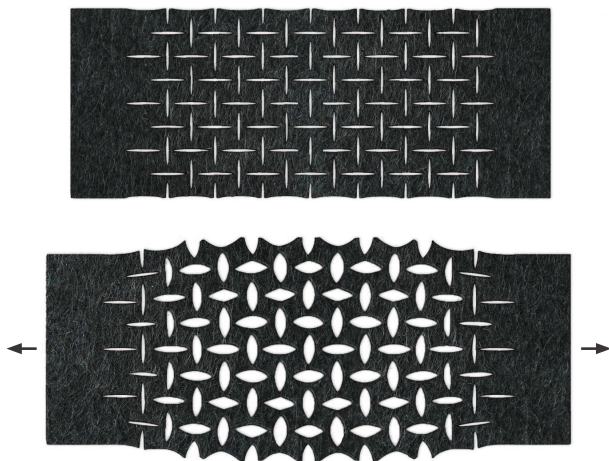
Interlocking 2D shapes offer both decorative and practical benefits. These designs ensure precise positioning and simplify the installation process, making them ideal for various applications. The high friction force between the interlocking shapes secures the material firmly in place when pieces are inserted into one another.

Additionally, these shapes can be customized with felt in different colors and thicknesses, resulting in a unique and visually striking effect. The material's interlocking nature guarantees a stable and cohesive design, enhancing both aesthetics and functionality.



Connections

By making recesses in the material, two shapes can be connected. This connection is durable and firm but it could be dismantled if needed even many times.



Pattern Cutting

Various cutting patterns can be employed to enhance the flexibility of PET felt. Incisions increase the material's pliability, making it easier to shape. The choice of patterns and their scale significantly impact the flexibility and rigidity of the PET felt panel.

Before you begin

Since PET Felt panels are made from recycled materials, slight color variations may occur. To minimize these differences, we recommend installing the panels in the same sequence as they are stacked in the box, with the top of the panel facing forward.

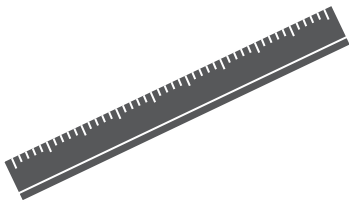
The panels have distinct front and back sides due to the different fiber orientations (nap direction) on each side. Ensure that the panels are installed in the same direction and that the same side is used during installation to prevent changes in appearance.

Handle PET Felt panels with care during transportation and unloading. The size and flexibility of a single panel typically require two people to lift it.

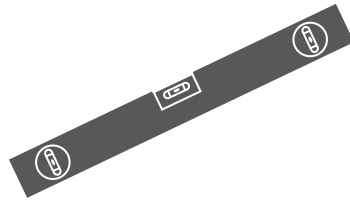
To achieve a seamless transition between panels, it is crucial to place them tightly against each other. You can accomplish this by firmly pressing a loose panel against the already installed section before securing it.

Tools may be needed during installation

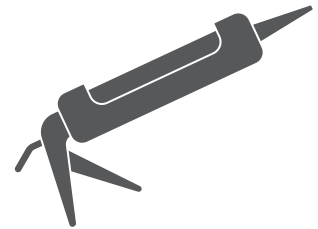
Not all tools are needed for installation, but depending on install choice, could be used.



Ruller



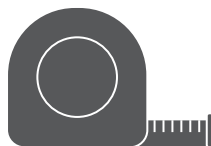
Level



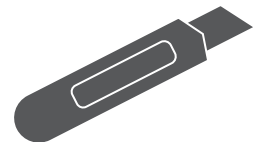
Adhesive



Screw Driver



Measuring tape



Snap-off blade cutter



Plunge-cut saw

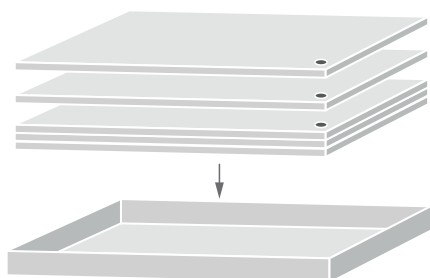


Drill

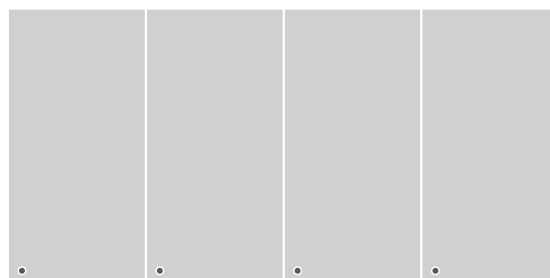


Staple gun

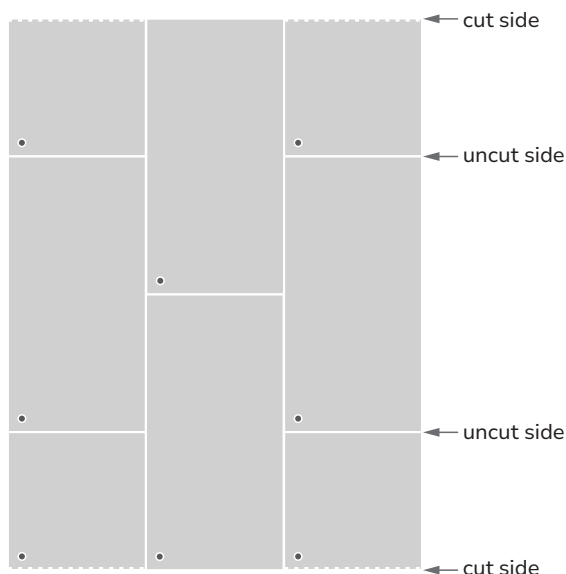
Recommended positioning



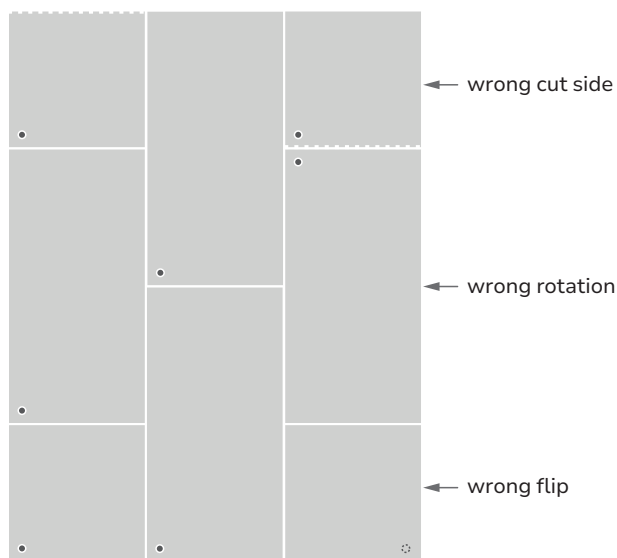
The back of the panel is indicated by a sticker



When installing a single row, ensure you place the panels in the same sequence as they are stacked in the box to prevent color variations. If you need to cut the panels to size, position the cut edge against the ceiling.



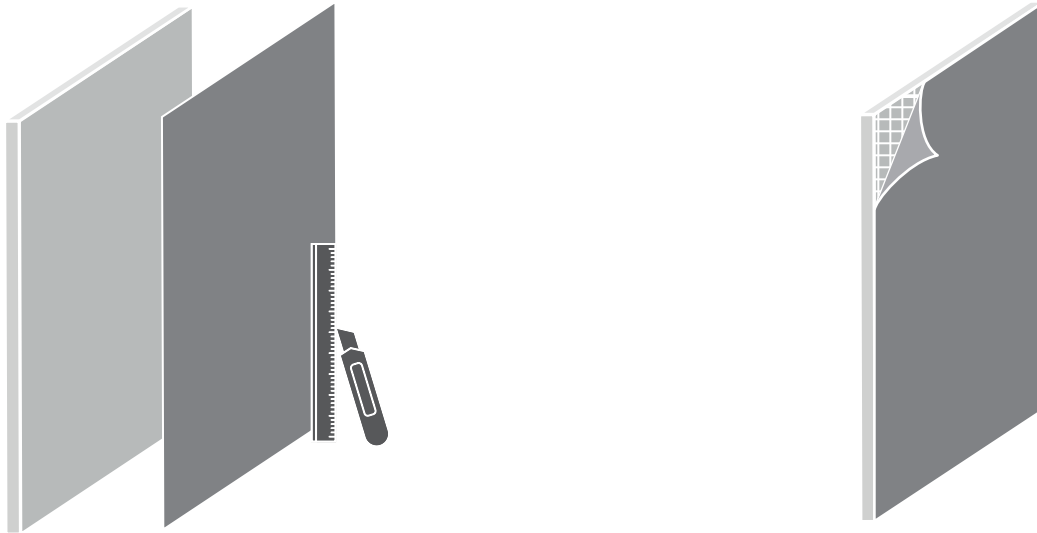
If you need to stack the panels, we recommend using the pattern illustrated here. An asymmetric pattern minimizes the visibility of color differences. Always position the cut edge on the outside, either towards the ceiling or the floor.



Never use a single panel to fill in smaller missing pieces. We recommend cutting and installing the panels in the same sequence as they are stacked in the box to prevent color variations.

Pressure adhesive installation

PET felt panels can be easily and quickly install using pressure adhesive installation. This simple DIY process ensures a seamless and secure application. More details on how to complete this installation are provided below.



1. **Prepare Surface** Ensure the installation surface is clean, dry, and free of dust and debris. Measure and cut the pressure-sensitive adhesive to the required size for each panel.

2. **Peel off the backing and apply from one side.** Evenly to the backside of the PET felt panel, covering the entire surface. Press the adhesive firmly onto the panel to ensure good contact and adherence. Carefully peel off the remaining backing from the adhesive and apply on the wall.

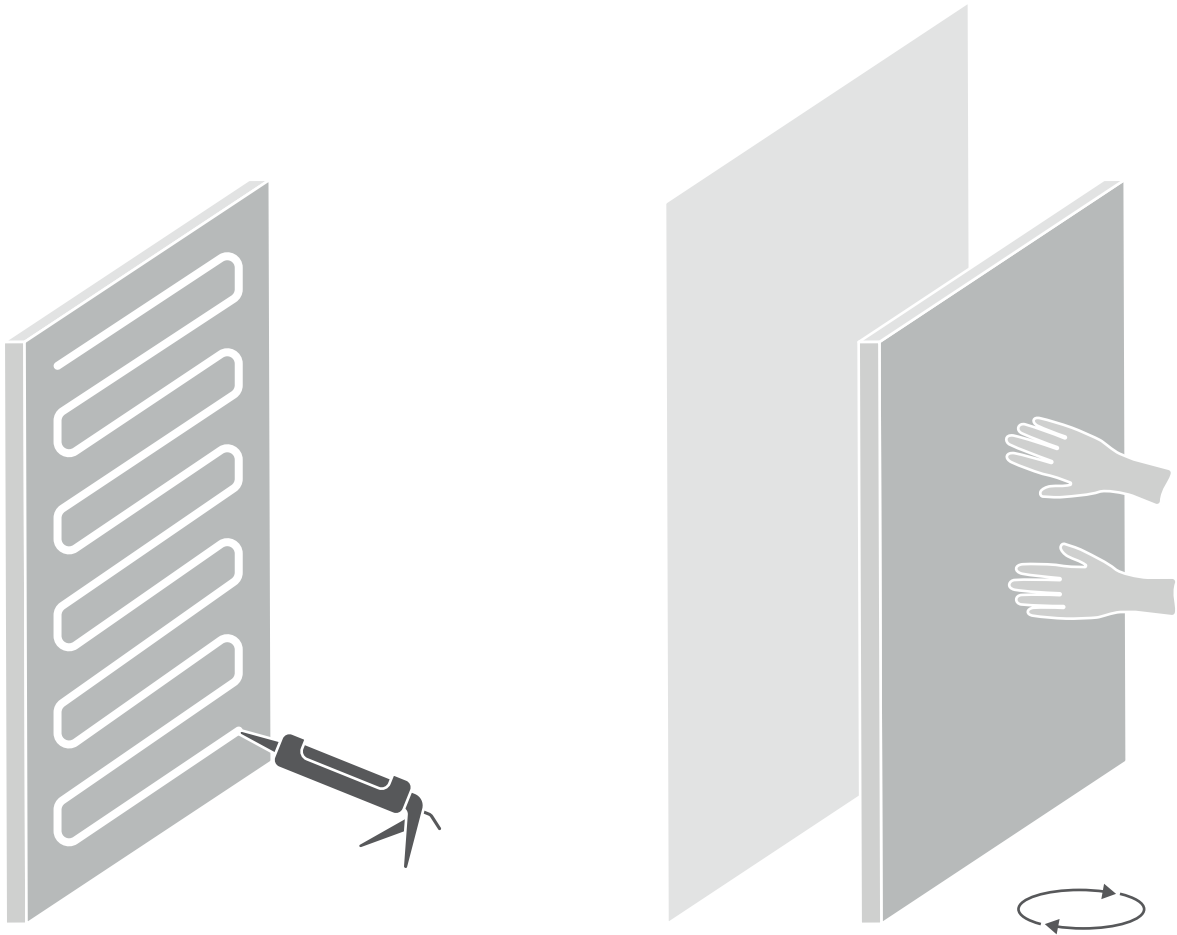


3. **Align the panel with the desired installation spot, ensuring it is straight and properly positioned. Attach Panel** - press the panel firmly onto the wall or surface, starting from the entire surface effectively top or side and working towards the edges to remove any air bubbles. Press along the edges of the panel to ensure a secure bond.

Direct mount installation

PET panels can be adhered to walls and ceiling using adhesive. Direct mount is the recommended installation method for adhesives.

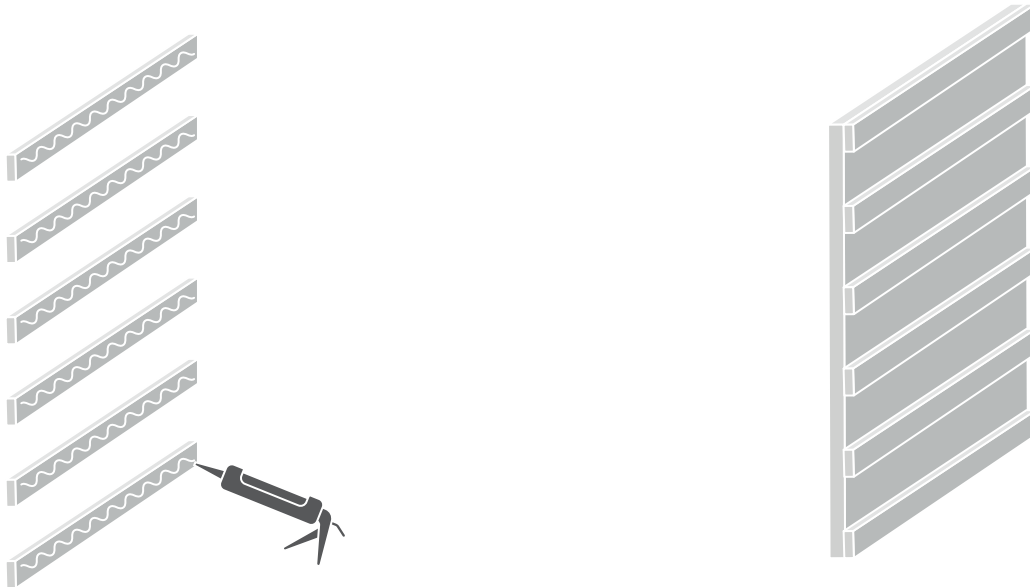
The recommended adhesives to use with PET panels i.e: PU mounting glue; KLEIBERIT PUR 502.8, Gun Foam; ATK 812 Power KLEBER, Solvent Free Glue;MS Polymer Montage Adhesive,DB Montagefix-ST, DB Montagefix-MS, ACOUSTIC Foam Adhesive (solvent free solution and Contact Glues; Pattex TOTAL, Pattex UNIVERSAL Classic.). **Do not use PVA Glue for an adhesive for PET panels.**



1. Clean and prepare the surface according to the adhesive manufacturer's guidelines. Then, evenly spread the adhesive on the back of the panel, leaving a 5 cm space free of glue at the edges.
2. Attach the panels to the wall surface according to the layout plan and maintain consistent pressure as per the adhesive manufacturer's specified duration and instructions. Remove any surplus adhesive after installation.

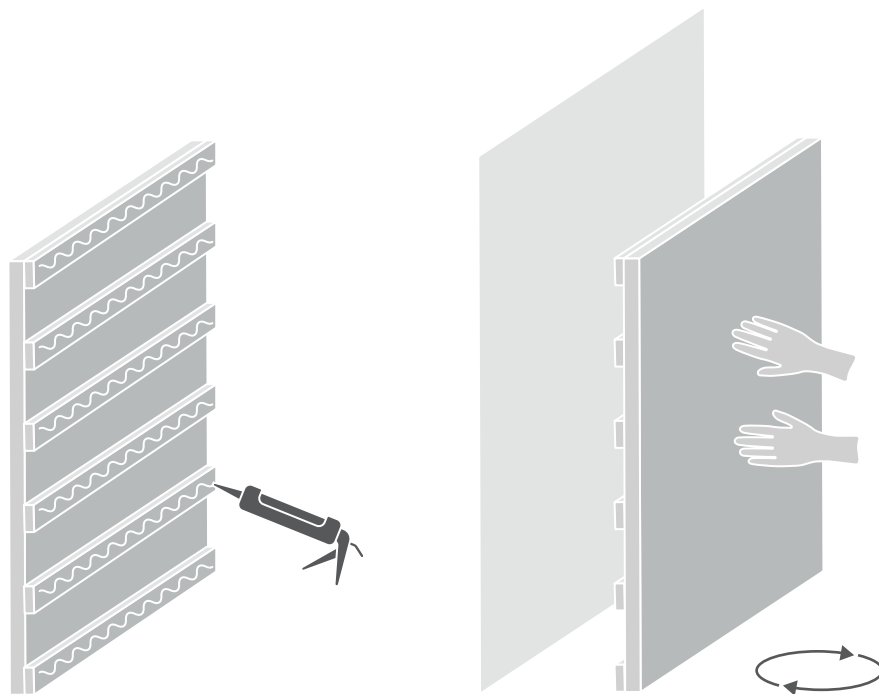
Furring strips installation

For the best acoustic results, furring strips can be employed to create an airspace behind the panels. These strips may be crafted from wood battens or by cutting additional panel strips to serve as standoffs. Standoffs offer enhanced acoustic effectiveness and improve ventilation. We suggest using standoffs with a diameter of at least 2,5 cm and up to 5 cm in depth for superior results. Ensure standoffs are evenly spaced to adequately support the panel and withstand potential impacts.



1. Clean and prepare surface per adhesive guidelines, then spread adhesive evenly on 7,5 cm furring strips (recommended width).

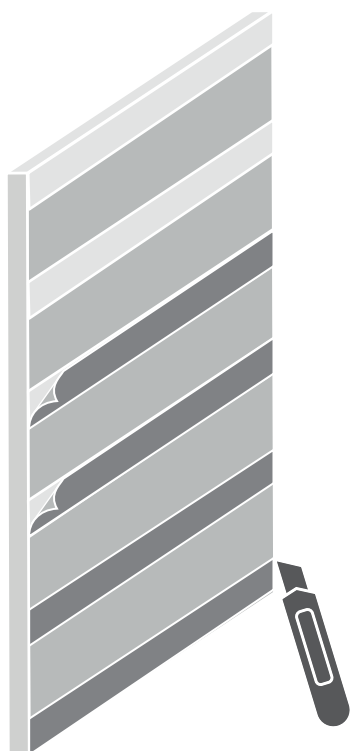
2. Place strips every 15-45 cm along the panel depending on expected potential impact.



3. Apply adhesive evenly on the furring strips already attached, then affix them to the wall surface according to the layout plan. Secure them as instructed by the adhesive guidelines, applying consistent pressure for the duration specified by the adhesive manufacturer. Remove any surplus adhesive after installation. To achieve a neat edge, consider using additional panel strips or alternative surface finishes.

Temporary mounting installation

Hook and loop tapes (i.e., 3M™ or Tesa®, DeFelt D/S adhesive or DeFelt dotted glue tape) or double sided tapes or any tape (with acrylic adhesive) - of commercial grade - can be used for temporary installations. The effectiveness and longevity of such temporary setups rely on the condition and texture of the substrate surface and the correct application of the adhesive. Visual guidelines are based on a standard flat and smooth wall that is clean and suitable for installation. Please be aware that PET panels may sustain damage during removal from the wall, depending on the quantity and type of temporary adhesive applied.



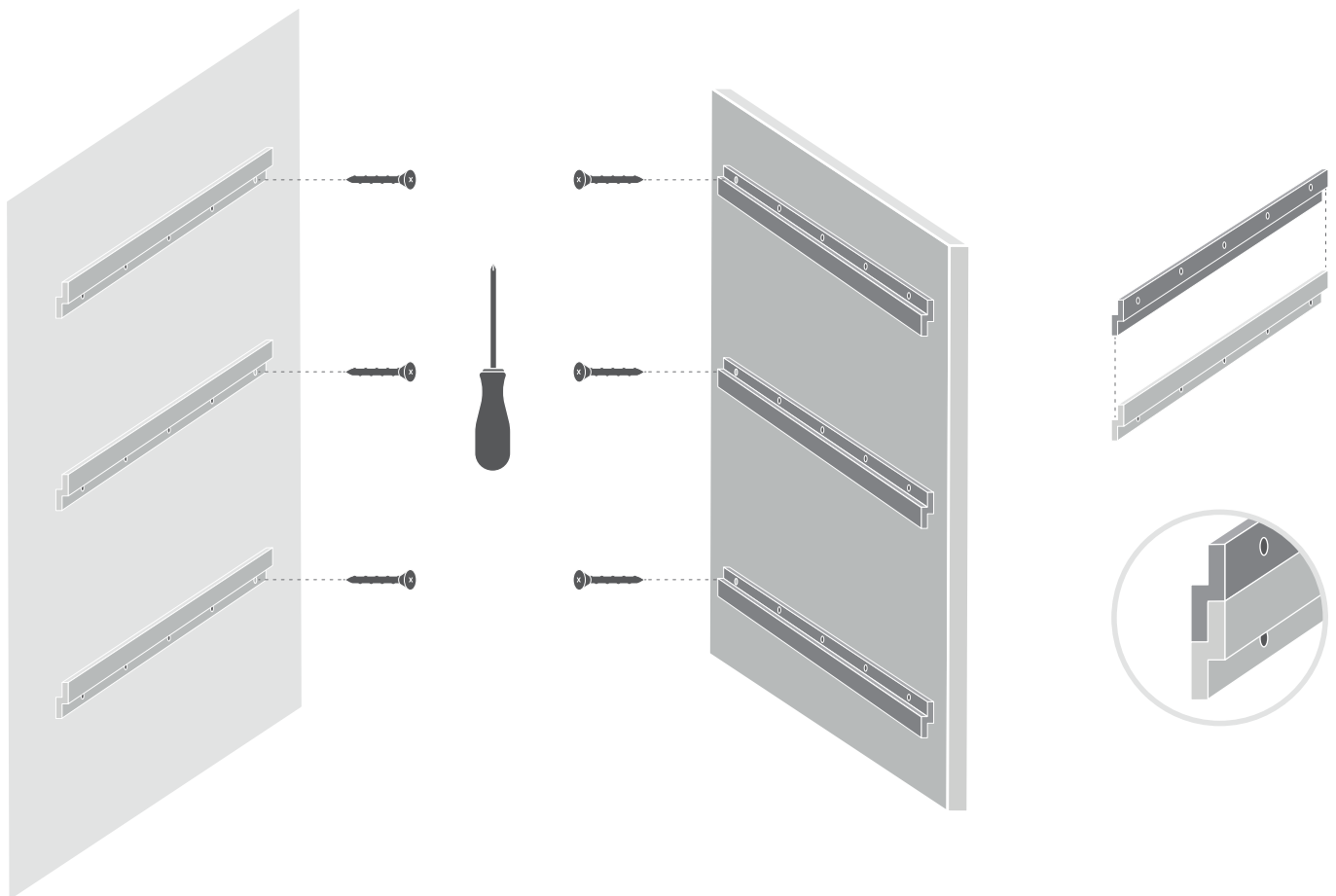
1. Clean and prepare surface per adhesive guidelines. Peel off one side of temporary adhesive and apply even pressure on panel. It is recommended to cover the panel with at least 30% coverage for best results.



2. Peel other side of the adhesive and adhere panel to a clean, flat surface per layout. Maintain even pressure per adhesive manufacturer time and instructions.

Z-Clips installation

Z-Clips may be used with PET panels by screwing Z-Clips into wall surface and into PET panels. Use screws that will not extend past panel surface.

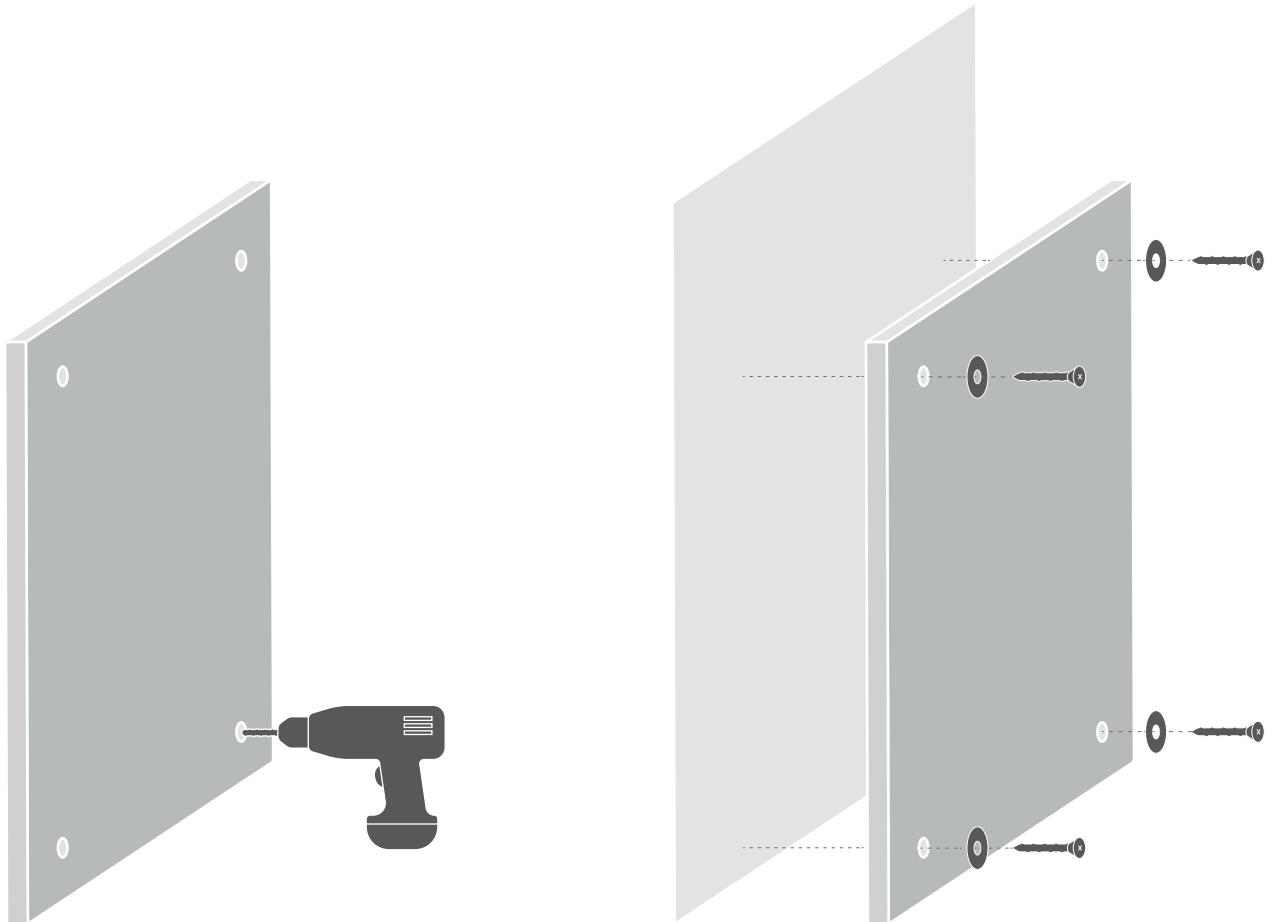


1. Prepare and clean the surface thoroughly. Install Z-Clips evenly spaced vertically on both the panel and the wall. Position the Z-Clips 10 cm to 15 cm from the top of the panel and wall, with additional Z-Clips placed as necessary to adequately support the panel against potential impacts.
2. It is advisable to use Z-Clips that span the full width when installing PET panels with Z-Clips. To ensure the panels lie flat, support the weight of the panel from the top full-width Z-Clip. For flexibility, leave a gap of 1.5 mm between the middle and bottom Z-Clips to accommodate panel movement.

Mechanical fasteners installation

PET panels can be secured to surfaces using mechanical fasteners like nails, screws, or staples where suitable. It is important to use the correct fasteners that are compatible with the substrate. One advantage of using mechanical attachments is their ability to be completely removed without leaving any residue, facilitating full recycling of the panels.

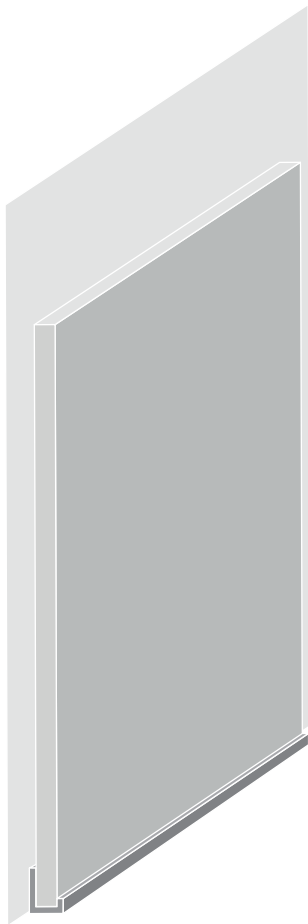
Avoid tightening fasteners excessively to prevent denting or bulging of the panel surface. Additionally, refrain from using self-tapping screws for hanging large panels. Nails or screws should be anchored into battens or other appropriate substrates.



1. Clean and prepare surface. Drill holes minimum 15mm center off- set from each corner and slightly oversized to allow for thermal expansion and contraction. Insure drilled holes have smooth edges.
2. Fasten panel to wall surface per layout. Use washers for better load distribution and to prevent pull-through. Also, use metal inserts if frequent assembly/ reassembly is required.

Framing system installation

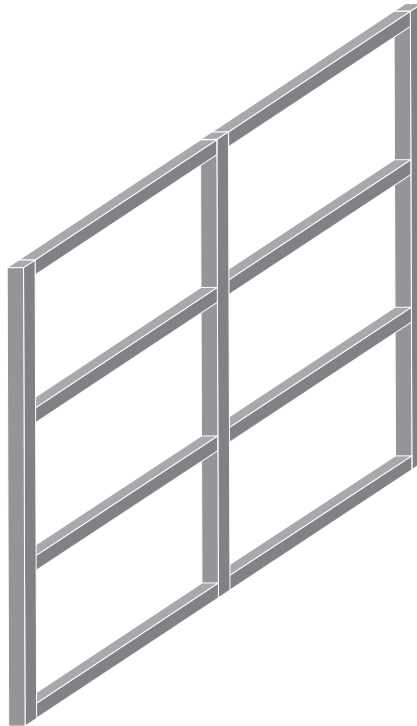
PET panels are frequently installed using various architectural aluminum trims. These trims, such as T, J, H, or L-shaped profiles made of aluminum, stainless steel, or plastic extrusions, serve as frames for mounting PET panels on walls or for creating standalone panels. These trim options are well-suited for PET panels because they facilitate the creation of lightweight and easily assembled systems that eliminate the need for non-recyclable adhesives and tapes.



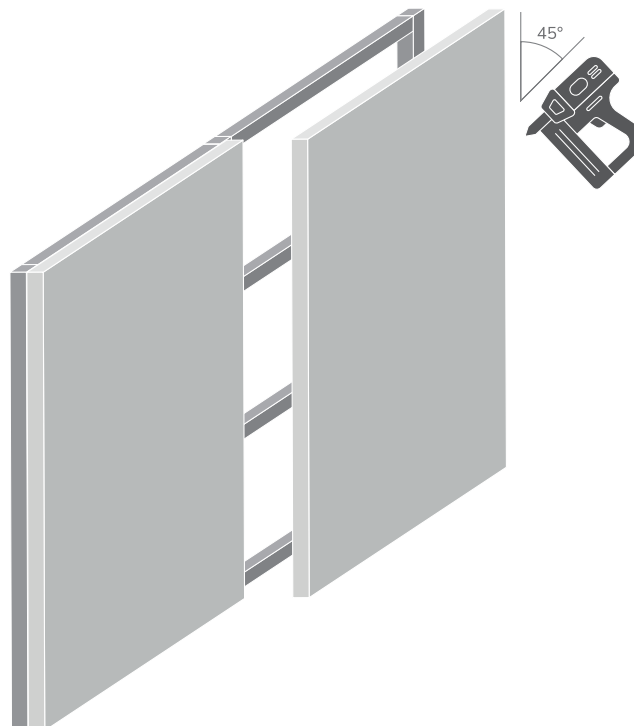
1. Clean and prepare surface per adhesive guidelines, then follow manufacturers directions for installation.
2. PET panels may be framed with standard J-molding or other trim molding as per molding instructions. Please note metric sizing of PET panels (9mm, 12mm or 24mm) when selecting moldings/trim.

Staple gun installation

For installation using a staple gun, it is essential to prepare a wooden framework. To enhance acoustic performance, consider filling the framework with insulation material.



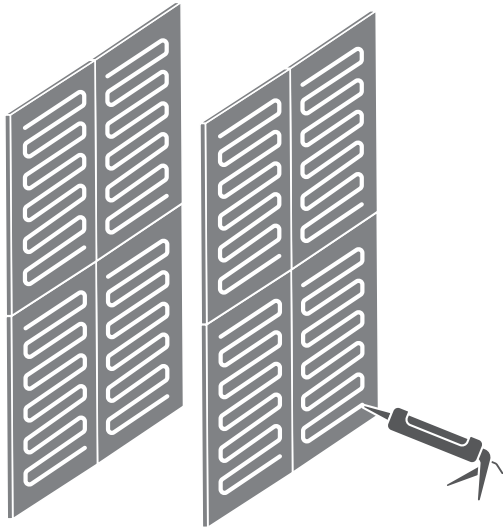
1. Prepare wooden framework. This is necessary if you install the panels using a staple gun. Make sure the frame is levelled. You can use a level to check that.



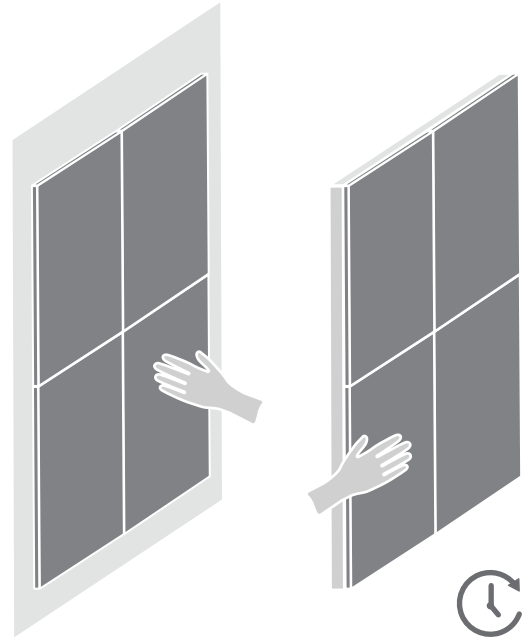
3. Install the panels. Test the pressure of the staple gun and adjust it, so that the nails don't go too deep into the material. For better grip of the headless nail, the nails should be applied at an angle of approximately 45°.

Magnetic installation

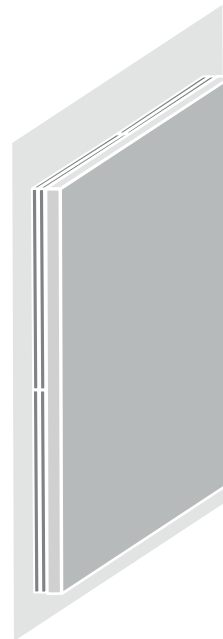
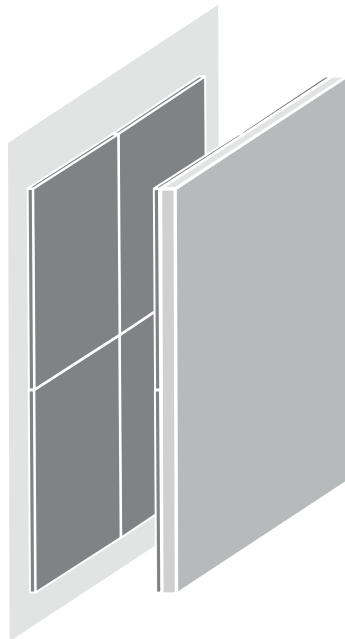
For installation using magnetic sheeting use a suitable adhesive recommended for PET panels or use the one with pressure sensitive tape already applied. During sticking ensure magnets are evenly spaced and aligned correctly. Remember to apply uniform pressure across the surface of the boards. Follow the curing time recommended by the adhesive manufacturer to glue fully set and bond securely to both the magnetic boards and the wall surface.



1. Ensure the wall surface and the back of the PET felt boards and magnetic boards are clean and dry. Apply a thin, even layer of adhesive on the backside of each magnetic board.



2. Place the magnetic boards on the designated spots on the wall where you want to install the PET felt boards. Press each magnetic board firmly against the wall to ensure good contact with the adhesive.



3. Once the adhesive has cured, attach the PET felt boards to the magnetic boards on the wall. Ensure they are aligned correctly and securely attached to the magnets. Double-check the alignment and adhesion of the PET felt boards. Make any necessary adjustments before completing the installation. After installation, avoid applying excessive force or weight on the PET felt boards until the adhesive has completely cured to prevent displacement. Please note that magnetic sheeting has linear magnetic fields. Place the horizontal and aligned properly on both sides.

Life after life

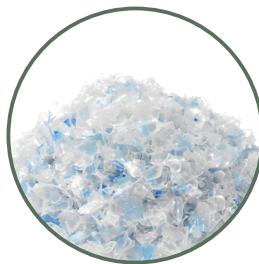
PET is made from collected, compressed, shredded, and melted recycled plastic bottles to produce plastic fibers, which are needle-punched together in layers to make a sturdy sheet of DeFelt felt.

To produce one 9mm panel, we need to use about 240 PET bottles.

FROM PET TO FELT



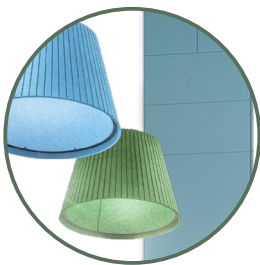
USED PET BOTTLES



MILLING TO FLAKES



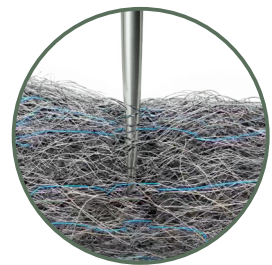
MODIFY TO FIBERS



USED IN FINAL PRODUCT



TRANSFORM TO PET FELT



NEEDLE PUNCH

YOUR TURN!

We have already taken the first step and use recycled felt for our products. Now the next step is up to you! Once you have used the product, you can try to give it a second life by finding a new use for it, or you can dispose of it in the appropriate waste container.

Remember to properly clean the felt from glue, nails and other raw materials that should not end up in the plastic waste container before throwing it away. In this way, together we will contribute to protecting the environment and supporting a circular economy.

Together we can do more! Recycling is a simple step that has a huge impact on our planet.





DO YOU HAVE ANY QUESTIONS?
CONTACT US!

contact@defelt.com