

TB 3.22 Preparation and Application of Avery Dennison Organoid Series

Introduction

Organoid series are hand-crafted natural surfaces, consisting of natural elements pressed together. There are several different types of surfaces distinguished by the mixing of natural elements in the front face and translucency of the film.

Natural Surfaces from Organoid® are made of natural raw materials. The hand-crafted manufacturing process allows them to maintain most of their natural properties and allow a multi-sensory experience such as their fragrance, feel, and look. Typical applications are medium-term indoor architectural decorations, reaching a durability of up to five years without direct sun exposure and within a range of temperatures of 10°C to 40°C and 50-65 % rH. The application process of the Organoid series has to be done with care and following this application guidance to ensure the product performs as intended.

NOTE: Please, read all the instructions prior to application.

Substrate preparation

Proper cleaning and preparation of the substrate prior to application is critical to the success of the installation. Incorrect preparation and cleaning may result in loss of adhesion, impacting durability and performance.

Substrate definition

The high tack adhesive used enables application onto a wide range of substrates, including plastered textured walls, treated wood or low energy surfaces such as latex painted walls. The following substrates are recommended

- **Plasterboard** with smooth or textured finish, untreated, primed or painted
- **Concrete**, slightly textured, with an unfinished or polished surfaces
- **Wood** boards such as *OSB (oriented strand board)* / chipboard, *MDF (medium density fiberboard)* and *Plywood (laminated wood)*
- **Polymer** surfaces such as *acrylics, polyesters, polycarbonates, PVC.*
- **Metallic** surfaces such *Aluminium composite*

Note: To ensure strong adhesion to these challenging surfaces, a high strength adhesive has been used for this series, therefore significant adhesive residue is to be expected upon removal and the end of life of application.

Note: The Organoid series is composed of natural and untreated surfaces, therefore some particles may loosen and drop-off when rubbed or abraded. For this reason, it is recommended not to place the surfaces on areas where mechanical friction may occur. Examples of these, but not limited to, are edges of doors or other moving elements.

Paint surface definitions.

- **Matt or (flat) paints** provide a non-reflective surface and they have a porous texture that can hold onto dirt and make cleaning more difficult. The application of self adhesive films are made more challenging by the porous surface of matt paint. This may cause the adhesion of the film, to the painted surface, to be greatly reduced resulting in premature failure of the wall film.
- **Satin or low luster paints** are more lustrous (gloss) than matt finishes. While these surfaces are not as porous as a matt paint the matting agents used in these paints can negatively affect the ultimate adhesion of the wall films.
- **Semi-gloss paints** provide a smooth somewhat shiny finish, which provides a good surface for wall film application.
- **Glossy paints** provide a smooth shiny finish, which provides a good surface for wall film application. Gloss painted surfaces are the best surfaces for self adhesive film application.

Avoid the use of the following substrates and finishes

- Avoid Paints containing migratory agents, such as chlorinated waxes and silicones, which may cause adhesion failure.
- Silicone or Teflon based paints: these paints feature “easy to clean” and “non-stick” properties which are not compatible with pressure sensitive adhesives.
- Low/zero VOC paints: paint manufacturers have been reducing the level of Volatile Organic Compounds (VOC’s) by changing the paint chemistry. Self adhesive films applied onto these paints have shown low adhesion levels, and failures may occur.
- Avoid heavily textured surfaces. The texture will allow the film to adhere only to the “high spots” greatly reducing the adhesion, which could cause wall films to fail prematurely.
- Avoid oil alkyd primers and enamels, as they are slow to dry and will adversely affect adhesion of a film.

Paint and Paint Surface Precautions

If applying film to a newly painted surface, follow all drying, and curing instructions provided by the paint manufacturer prior to surface preparation and film application.

All air-drying paints should be allowed to dwell at room temperature and humidity conditions for a minimum of two weeks (14 days) prior to wall film application. Reference and follow the paint manufacturer’s instructions regarding curing times for their paints.

Note: It has been documented that some paints can take months to fully cure. If the paint is not allowed to cure properly, outgassing may occur. Outgassing takes place during the drying/curing process of the paint where certain gases are released. If the Organoid series is applied before the paint is allowed to cure these gases could become trapped and can result in lifting, air bubbles and premature failure.

Inspecting, Cleaning And Preparing the Substrate

The surface to which Avery Dennison™ films are applied must be completely clean and dry before final preparation. Before Organoid Natural Surfaces can be applied it is important to ensure the substrate is both in good condition and clean. Any contaminants, such as dust, dirt, grease, loose paint or particles from a chalking wall can cause adhesion loss and therefore reduce the durability and performance of the self adhesive film.

Inspect / Repair Substrate

It is important to repair any severe wall damage and return it to ‘like new’ condition. A wall that is not properly repaired could cause poor adhesion. Examples of an unsound wall surface include loose paint, damaged surface, cracks, or inconsistent surface.

Below are several examples of substrates in need of repair. Figure 1 shows some examples.

- Holes in wall or incomplete patches – These areas will need to be patched, primed, and painted. Loose wallboard joints – These seams must be repaired.
- Extremely textured substrate finishes.
- Paint chipped, loose, flaking or peeling – Scrape away all loose paint and then prime and paint the surface.
- Moisture trapped behind wallboards – may cause the wallboard paper to release resulting in bubbles on the surface. Pay special attention to areas prone to condensation such as walls surrounding cooling units, water pipes, overhead windows, or any water pipes that could drip on the wall film.
- Dust or dirt – These walls must be clean and free from all contaminants before applying the wall film.
- Contamination left by other products, on the substrate, that were not properly cleaned.



Figure 1. Examples of walls that need to be repaired prior application

Cleaning

Make sure that the substrate is cleaned, free of dust, loose particles, any surface contaminants and it is dry. Moulds, corrugations, edges and corners are especially critical areas requiring special attention during cleaning.

- Clean the substrate prior to applying any wall film.
- For most interior painted drywall surfaces simply wiping down the substrate with a clean, dry lint free cloth will be sufficient. However, some surfaces may require extra cleaning. If the surface is greasy, please use a suitable cleaning agent recommended by the paint manufacturer
- For surfaces other than painted drywall remove all dirt and grime with a commercial synthetic detergent solution and warm water. Avoid detergents with lotions, waxes, creams, or oils. Do not use window cleaners as they may have waxes.
- For interior smooth concrete or concrete block walls, they can be vacuumed or brushed.
- After the surface has dried, it is recommended to brush the surface immediately before application to remove any dust or dirt that may have collected during the drying period.

Application

Required Tools

The following tools are needed for the complete installation of the surface.

- *Soft brush*
- *Cutter with sharp blades and cutting ruler*
- *Dry slide wrap protective gloves*
- *Marking pencil for positioning*
- *Low tack masking tape*
- *Soft rubber roller*
- *Felt squeegee*
- *Lint-free cloth for cleaning*

Acclimatization

The recommended storage conditions are 20°C and 50-65 rH%. The rolls must be kept in their original packaging as this limits exposure to UV from direct sunlight. The organic natural surface of the material needs to breathe, therefore do not place or store the material in any poly bags or sealed containers.

Unwinding of the film must be done on a clean dust-free flat surface, such as a long table, where the surface can rest flat. Curling of the film can be initially observed, but leaving the surface to rest flat is recommended to ensure flatness of the film. The sheets can be stacked and the recommended acclimatization conditions are 20°C and 50-65 rH% for 12 h.

Cutting procedure

A few of the film surfaces have hard elements that may 'jump-off' during cutting as splinters. For your safety we recommend using protective gloves during cutting.

Manual cutting of Organoid surfaces is possible with a standard sharp graphics knife. The use of a sufficiently large cutting table for the intended application is advised. The force required for cutting varies from the surface type. For instance, Mountain hay is harder to cut than the Leaves or Rose and Sunflower petals. Variances on the thickness of the surface can also lead to differences on the cutting force.

The use of a straight edge / cutting ruler is recommended to aid accurate and straight line converting. Manual cutting may also be done using a sharp snitty.

Note: Some Organoid Natural Surfaces contain hard components which can cause the knife to slip onto the cutting ruler.

Flatbed plotter cutting was successfully tested with Zünd digital cutting systems using a drag, oscillating or rotating knife. Cutting through of detailed logos is possible with drag, oscillating

and rotating knives (see Figure 2). The cutting conditions such as off-set, pressure and speed need to be adjusted accordingly per film and purpose. Please, be aware that some natural material can jump-off to the flat- bed cutting table and thus, regular cleaning is recommended to ensure cutting quality for long-term production runs. Kiss-cut of these films has been proved to be extremely challenging due to the nature of the adhesive and the film construction. This might bring limitations on design possibilities.

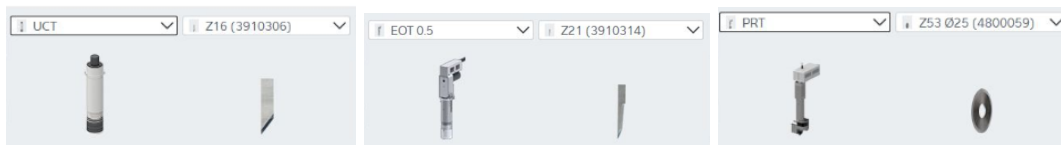


Figure 2. Drag, oscillating or rotating knives options for cutting though Organoid series

Laser cutting of Organoid Natural Surfaces was also successfully tested by using Eurolaser equipment. Organoid Natural Surfaces has been certified as “excellently suitable” by EuroLaser. The employed system for these tests is eurolaser XL - 1600 with a laser source of 450 Watts and a Honeycomb structure, made of a thin aluminium foil, as support system. Consistent and precise cutting was obtained using laser cutting due to the avoidance of any tool that wears over time, any marks coming from changes of direction or overcuts at the edges. The lens height and extractor settings depend on the exact material and the speed requirements.





Note: Prior to production, it is recommended to establish the suitability of the design, the cutting system and test the cutting conditions to find the optimum settings for the purpose. Further technical information on setting for cutting Organoid Series using Zund digital cutting systems and EuroLaser devices is available upon demand.

Ensure accurate measurements of substrate have been taken. Adding 2cm to each dimension, thus ensuring sufficient overlap after installation for trimming, now cut the wall film to the larger size.

Note: Please note that the Organoid products on the roll are not cut 100% straight. Based on the total roll length of 10 linear meters a tolerance of +/- 5 mm on each side may appear.

After cutting of Organoid surfaces, some material might have jumped off to the cutting table or deposited on the surface. Gently clean both surfaces and table with a soft dry brush.

Installation

Temperature

Temperature plays a role in how well the material adheres to a substrate. Please, follow the recommended application and service temperature as can be found in the data sheets. It is important to monitor the humidity of the room to ensure ultimate performance and durability of the installed film.

Adhesion pre-testing

Always test adhesion and substrate/adhesive compatibility prior to application. Adhesion can be tested by applying a small strip of film in an inconspicuous area and allowed to dwell for 2-3 days. Before applying the test strip the substrate should be properly prepared and cleaned as outlined above.

Application on substrate (non-glass)

Only the dry application method is recommended for the Organoid series. Prior to cutting, ensure that the area to be covered has been measured accurately. Using a pencil mark the initial right positioning locations of the film on the wall. Prior to installation, cover the edges of the substrates with masking tape (eg. board, panel, wall).

Note: Some adhesive residue can be expected during repositioning of the film. It is strongly recommended to cover all areas around the edges to avoid adhesive contamination on unwanted areas / substrates.

A low tack masking tape may be used to hold the film in place. The tape can be used on the corners or sides of the surface whichever is most convenient. For large surfaces an assistant might be necessary to hold the film.

Note: The tape can damage the surface finish of the natural surface. Therefore, minimum pressure during tape application is recommended to minimise surface damage when removing the tape later.

After positioning of the film is set, use both hands to remove the liner from the surface. Always remove the liner from the surface rather than the surface from the liner. This process is easier when implemented in small steps.

Note: Once the adhesive is in contact with the substrate, repositionability is limited and should be kept to the minimum. For that reason, it is suggested to adhere 1-3 cm of the films in one of the edges, covered by the masking tape and deploy the rest to ensure the right positioning of the film before continuing with further adhesion steps.

After that, removing further of the liner in consecutive steps of approximately 10 cm is suggested and using a soft rubber roller, apply pressure to the surface to install the wall film. Move the roller in a straight line and not in an arc motion, and starting from top working your way to the bottom.

Corrugations: Applications on internal and external 90° corners are possible, however some release of organic material from the face may occur. Testing the film suitability for corrugations prior to installation is recommended. Using a small strip in an inconspicuous corner / area. For concave curves, a soft squeegee can be used to apply pressure on the edges where the roller might not reach. For convex curves, the roller can easily be used.

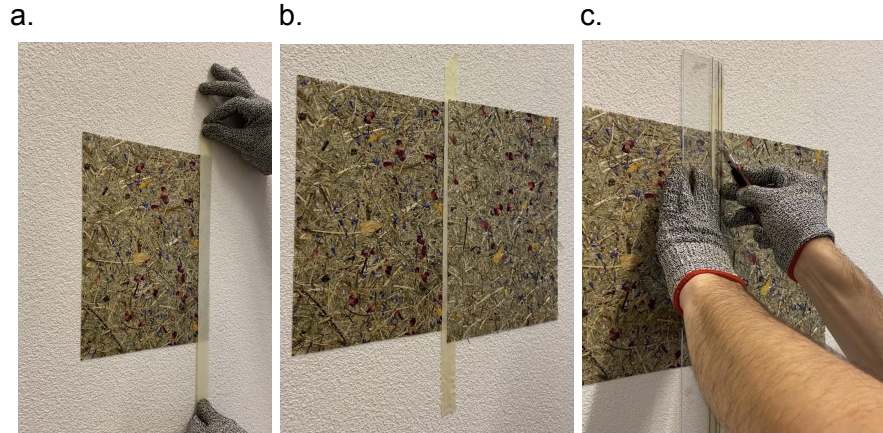
Note: Applying pressure is critical to reach appropriate adhesion levels. Please, use a soft squeegee when the roller does not reach all the edges.

Connecting surfaces

Carpet cuts are recommended to achieve the best surface finish. For that, install the first surface as indicated earlier. Once the first organoid film is installed, place a low tack masking tape at the edge of the side where the other film will be connected (Fig 3.a.). **IMPORTANT:** Do not apply pressure to the masking tape in contact with the surface but only to the top and bottom areas which are in contact with the substrate. Apply the second film without applying pressure on the overlap of approx 10 mm (fig 3.b.). Then, cut the second film with the help of a

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ruler by aligning it with the edge of the masking tape (fig 3.c.). **IMPORTANT:** Be careful not to damage the substrate underneath. Later, gently remove the masking tape (fig 3.d.) and open the second film in order to remove all the excess of film underneath (fig 3.e.). Finally, apply pressure with the soft roller, making sure that all the surfaces have been pressed (fig 3.f.).



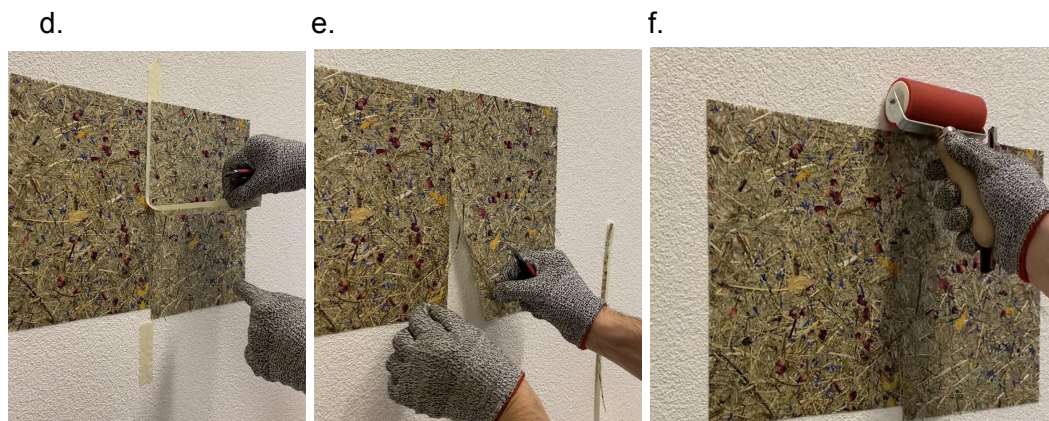


Figure 3. a) Placement of low tack masking tape. b) Placement of second film onto the masking tape. c) Cutting of the excess of film. d) Masking tape removal. e) Removal of the excess of film. f) Applying pressure with a soft roller

Overlaps of two surface drops of at least 10 mm are possible for most of the Organoid series. However due to the surface structure of the bright and dark green mosses, edge lifting can occur. Therefore, overlaps are not recommended for “Moss Bright Green” and “Moss Dark Green”. When doing an overlap, make sure that both surfaces are parallel creating a parallel line and significant pressure is applied with the roller on the overlap.

Application on glass

Applying Organoid series on glass requires additional attention. The smoothness of glass in combination with the high surface energy significantly increases adhesion, thus making repositioning impossible.

Prior to cutting, ensure that the area to be covered has been measured and marked. If necessary, a pencil can be used to mark the initial right positioning of the film. Prior to installation, cover the edges where the substrate will not be in contact with the film. This includes the frames of the window (fig 2.a). With masking tape

Note: Some adhesive residues can appear after repositioning the film. It is the user's responsibility to cover all areas around the edges to avoid leaving unwanted adhesive residue on the substrate.

For a full window coverage, the film could be positioned on the frame (fig 4.a). Both vertical or horizontal applications can be used depending on the desired location of the film. Prior to further installation, ensure that the film is aligned and in the right position. Gentle unwinding the roll and remove the first 10-20 cm of the liner from the surface. Apply pressure on that area of the film with a soft roller to ensure initial adhesion (fig 4.b). Step by step continue unwinding (fig 4.c) and using the roll in straight lines (usually up and down) to apply pressure (fig 4.d.). Once you have reached the other side of the frame, use a soft squeegee to apply pressure on the edges (fig 4.e.). Finally, cut the film using the help of the frame or a cutting ruler (fig 4.f.).

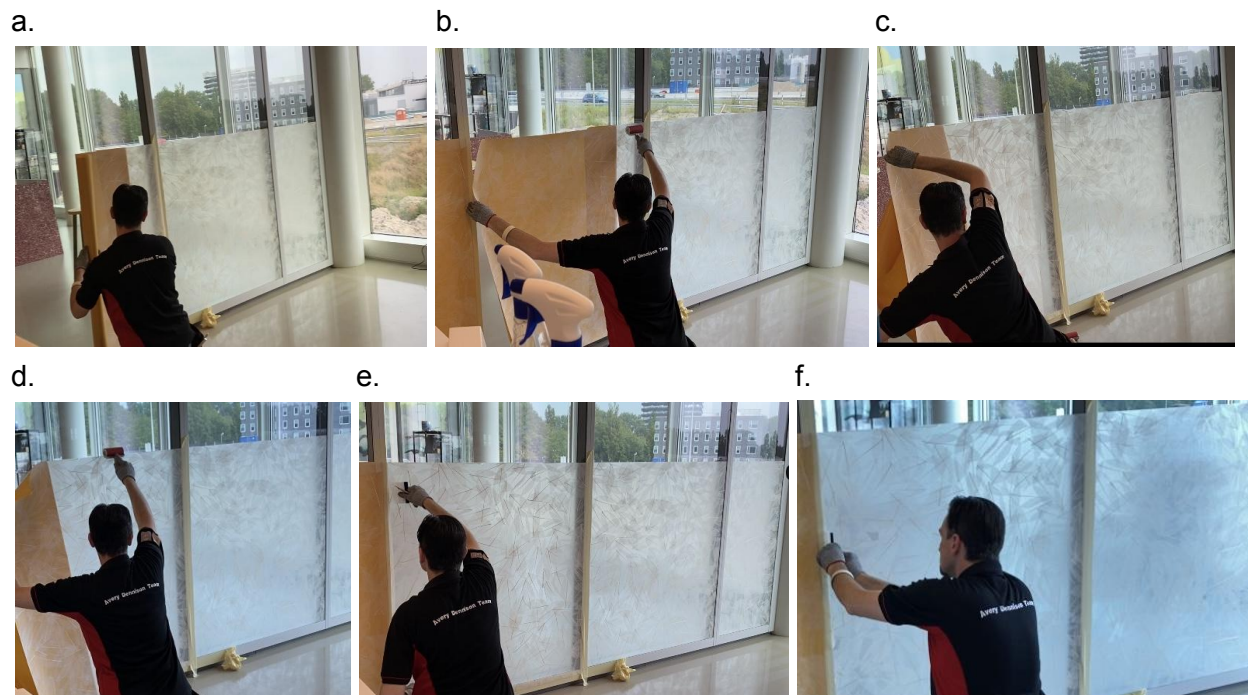


Figure 4. a) Placement of film on one frame and unwinding the first 10-20 cm. b) Applying pressure with a soft roller. c) Unwinding of the film. d) Applying pressure with a soft roller. e) Use of squeegee on the edges. f) Cutting of the excess film

Cleaning and Maintenance

For all Organoid surfaces, using a dry microfiber cloth wipe the surface again removing all moisture and dust from the surface

Cleaning the surface with a dry lint free or microfiber cloth is recommended. Dusting the surface can be done with a soft brush.

Cleaning stains on the material surface can be done with a dry microcloth. It is suggested to clean the stain as soon as possible in order to avoid further absorption of any spills into the film. Chemical resistance of Organoid Natural Surfaces is low. The surfaces absorb the fluid and color changes and visual damages may appear. Therefore, do not use solvents, detergents and other aggressive cleaners. The abrasion resistance is limited on these films but it varies per surface type. In order to prevent the surface from surface damage, It is recommended to avoid excessive pressure or abrasion during cleaning but also during the service life of the film.

Note: These indications represent general guidelines and therefore do not guarantee the complete removal of stains or dirt. Cleaning Organoid surfaces might lead to dropping and damaging of the natural surface

Organoid surfaces are made of untreated natural organic compounds. Aging of the surface is expected over time. Please, further information about aging can be found in the technical data sheets.

Removal

Note: Clean and damage free removal from any substrate should not be expected when using Organoid Natural Surfaces.

Organoid series is constructed with a high tack permanent adhesive that ensures good adhesion on a wide range of smooth and textured surfaces. After applying pressure during application, adhesion increases until ultimate adhesion is achieved, ensuring adhesion even on difficult substrates. Organoid surfaces are difficult to remove as they have been designed to be permanent. They may cause surface damages to the substrate during removal, eg (however not limited to) paint delamination and plaster tearing from walls. Therefore we strongly recommend testing adhesion and removal on the proposed substrate prior to full installation, to establish suitability.

Removal Notes

For best results remove the films slowly. Clean removal from any substrate may not be possible. If the bond of the film to the paint is greater than the bond of the paint to the plasterboard, the paint and possibly the paper covering on the plasterboard could be damaged during removal. Moisture that has penetrated the plasterboard will destroy the painted surface when Organoid surfaces are removed. Remember that, especially in remodeling jobs, plasterboard may have been placed over windows, cooling pipes, etc., that may produce moisture that is transferred to the plasterboard.

Removal Tips

Start at the top of the surface and pull it firmly away from the wall at an angle of between 120° and 180°, peeling off the material. While the use of chemicals is not recommended, low heat (30°C - 40°C) may be used on a suitable substrate, not recommended for plasterboard or windows. The use of blade scrapers can ease the removal process.

If the substrate appears stained after removal, it might be related to adhesive residue. Adhesive residue may be experienced upon removal and the appropriate cleaning, depending on the substrate, may be required.

Note: During the removal process at the end of service life, the substrate' surface can be damaged, especially on soft substrates such as, however not limited to, plaster boards.

Removal from high energy surfaces, such as and not limited to glass, may result in smaller pieces being removed with difficulty.

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