

Durable Protective Film 7750AM

Application Instructions

Technical Bulletin

August, 2020

3M™ Durable Protective Film 7750AM is a 2-mil high clarity PET film with permanent adhesive, protected by a scratch, abrasion and chemical resistant hardcoat that contains a built-in antimicrobial agent to protect the top clear hardcoat layer. The top clear hardcoat layer contains an EPA-registered silver ion antimicrobial agent built-in to suppress the growth of bacteria, mold and mildew. This product does not protect users or others against viruses, COVID-19, bacteria, germs or other food-borne or disease-causing organisms. This product utilizes 3M™ 400 Adhesive that offers good wet-out, clarity and is non-yellowing when exposed to UV light.

This technical bulletin outlines a recommended procedure for the installation of Durable Protective Film from 3M. It details application techniques and materials that can help with a successful installation.

Tools and solutions suggested for application of Industrial Protective Films include:

Tools	Solutions
3M™ Hand Applicator Wipe	Distilled or Clean Tap Water
16 fl. oz. spray bottles	Surface Cleaner (glass cleaner, IPA*, soap)
Lint free paper towels/clean rags	
Rubber Tipped Squeegee	

***Note:** When using solvents, extinguish all ignition sources, including pilot lights and follow the manufacturer's precautions and directions for use.

Step 1: Prepare Film for Application

- Film should be cut to the correct size and shape to fit the surface being covered. Film may be previously converted by a professional die cutting service. Alternatively, you may measure and cut sheets or patterns as needed to fit the surface.
- There is less chance for debris to build up on the surface causing a potential visual defect if film is applied soon after surface cleaning so the film should be prepared and ready to apply before cleaning surface.

Step 2: Surface Preparation

Surface preparation is a very important step in the process of applying Durable Protective Film.

Surface Cleaning Procedure

- Clean surface of any large debris or particulates. If necessary, use a scraper to remove hard debris on the application surface. If particles remain on the surface, the Durable Protective Film will form a “tent” over the particle which will be a visible defect once lamination is performed.
- Wipe the surface with a lint free paper towel. Concentrate on wiping the edges of the surface where dirt can collect.
- Apply suitable cleaning solution to the surface using a spray bottle. Some suggestions include IPA, acetone, or soapy water depending on the surface.*
- Use a rubber tipped squeegee to remove the solution from the surface. The rubber tipped squeegee is the preferred method to dry the surface as it will not leave any residual lint or paper particles on the surface before film application.

***Note:** When using solvents, extinguish all ignition sources, including pilot lights and follow the manufacturer’s precautions and directions for use.

Step 3: Apply Film to Surface

Application Conditions

It is suggested that the surface temperature and ambient air temperature are both between 55°F and 90°F (13°C and 32°C). Lower temperatures might leave the adhesive too stiff to bond properly to the surface. The surface should not be in direct sunlight. If outdoors, winds should be below 5 mph.

Application Procedure

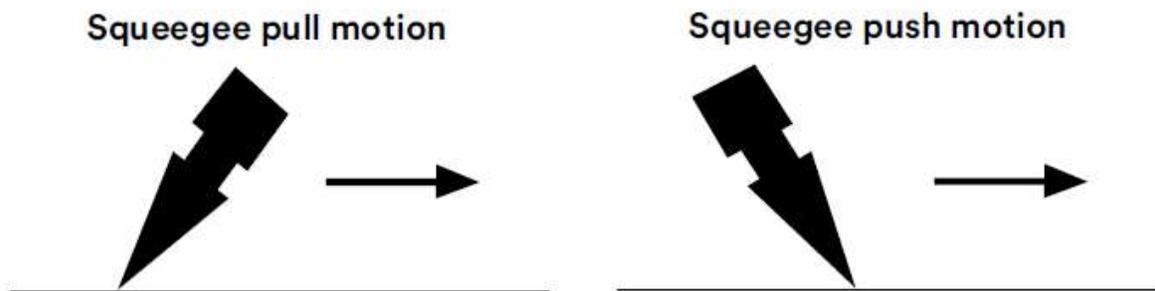
For best results, wash hands thoroughly before application to avoid film contamination, such as fingerprints, which are difficult to remove.

Spray the top surface of the film with the application solution so it is wet throughout the process of applying the film to aid in the squeegee sliding across the film.

Remove the liner to expose the acrylic adhesive. If having difficulty starting the liner, a small masking tape tab on the corner of both sides can aid in easily lifting the liner from the adhesive.

1. Spray your fingers and the surface where the film will be applied.
2. Properly position the film and lay it down on the surface. The water allows you to slide the film into its desired position. Sliding is preferred to lifting because it doesn't introduce air bubbles.
3. Use the squeegee to remove the water. Overlap squeegee strokes to ensure no solution is left between the film adhesive and the surface.
4. Continually re-wet your fingers and the surface of the film with the water throughout the application process as needed to aid in slip and ease of application. During the application, bubbles can be removed by making firm, quick squeegee "pushing strokes" toward the nearest edge that has not been tacked down. Dry the surface with a soft clean cloth and inspect for bubbles that may have been left behind.

There are two different squeegee strokes that are used.



The **“Pull”** squeegee stroke is the most common squeegee method to apply film and can be used for the majority of the application. This pull squeegee stroke is used to remove the bulk of the solution from between the film adhesive and the surface.

The **“Pushing”** squeegee stroke is sometimes referred to as “knifing the squeegee.” This stroke is used when additional direct force is required. The pushing squeegee stroke is most often used to compress film fingers and remove bubbles. Other locations that could benefit from the pushing stroke are concave and confined areas, as well as edges.

- If you cannot get the air pockets or bubbles out, the film can be lifted and re-applied within five minutes of application completion. Be sure to re-wet the film, the surface and your fingers before you lift the portion of the film that has bubbles. Use the same squeegee technique, starting at the center point of the application and sliding the squeegee to the edges of the film.

IMPORTANT NOTE: Do **NOT** wash or disturb the film on the surface for 24 hours to allow maximum bond.

Troubleshooting and Defect Identification

Defect Type	Cause	Resolution
Random Water Filled Bubbles	Squeegeeing Too Quickly	Slow down and maintain sufficient pressure on each stroke
Long Water Filled Bubbles	Not overlapping strokes during application	Make sure each stroke covers a section of previously squeegeed area
Air Filled Bubble	Consider Surface Type, is there any outgassing? Lifting Film during application also possible cause	Give surface time to outgas before film application. Slide film rather than lift. If lifted, re apply water to surface.
Debris Filled Bubble	Debris was left on surface and trapped	Make sure application surface is contaminant free
Adhesion Issue/Lifting	Contaminant like silicone, or surface is not compatible with adhesive	Check surface is clean of contaminants and ensure adhesion meets requirements

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