

Industrial Protective Films 7070UV & 7071UV



Application & Removal Instructions

Technical Bulletin

May, 2015

3M™ Industrial Protective Films (IPF) 7070UV and 7071UV are abrasion resistant, pressure sensitive adhesive backed film products designed to protect multiple industrial surfaces from damage caused by abrasion, scratching, erosion, UV and minor impacts.

This technical bulletin outlines the recommended procedures for the installation of Industrial Protective Film (IPF) from 3M. It details application techniques and materials necessary for a successful installation as well as it outlines the suggested techniques for removing film applied to a surface.

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

Tools

- **3M™ Hand Applicator Wipe** (Blue quantity 5 SKU 75-3467-0774-0 or quantity 25 SKU 75-3454-4264-6)
- **2 16 fl. oz. spray bottles**
- **Lint free paper towels/clean rags**
- **Rubber tipped squeegee**
- **Scissors/utility knife**

Solutions

- **Johnson's® Baby Shampoo** (by Johnson & Johnson)
- **A source of clean tap water**
- **3M™ Glass Cleaner**
- **70% Isopropyl Alcohol, 30% Water***

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

3M™ Industrial Protective Films 7070UV & 7071UV

Application & Removal Instructions

Step 1: Solution Preparation

3M suggests using a two-solution application method for optimal appearance and results.

Preparing the Alcohol Solution

- Isopropyl Alcohol can be purchased in a concentration of 70% Alcohol, 30% water. If this cannot be obtained, the solution can be mixed.
- Label one 16 oz. spray bottle with the words “Alcohol Solution”.
- Fill the 16 oz. spray bottle with 75% clean water and 25% Isopropyl Alcohol.

Preparing the Soap Solution

- Label one 16 oz. spray bottle with the words “Soap Solution”.
 - Fill the 16 oz. spray bottle with clean water and add 4 drops (0.6 ml) of Johnson’s® Baby Shampoo.
 - The soap is added last to prevent foaming.
-

Step 2: Surface Preparation

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

Surface Cleaning Procedure

- Apply 3M™ Glass Cleaner to the surface.
 - Use a rigid scraper to remove any particulate that may have attached to the surface. If particles remain on the surface, the Industrial 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 alcohol/water solution to the surface using a spray bottle.
 - Use a rubber tipped squeegee to dry 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.
-

Step 3: Prepare Film for Application

- Film should be cut to the correct size and shape to fit the surface being covered. This can be done by hand trimming with a scissor or sharp razor knife. Film may also be previously converted by a professional die cutting service.
- A piece of 3M™ Industrial Protective Film should be readily available so it can be applied directly after cleaning 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.

3M™ Industrial Protective Films 7070UV & 7071UV Application & Removal Instructions

Step 4: Apply Film to Surface

Industrial Protective Film Application Procedure

It is suggested that the surface temperature and ambient air temperature are both between 55°F and 90°F (13°C and 32°C). The surface should not be in direct sunlight. If outdoors, winds should be below 5 mph.

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

3M suggests using two application solutions as shown below for achieving the best appearance and results.

- Soap Solution (as described in step 1)
- Alcohol Solution (as described in step 1)*

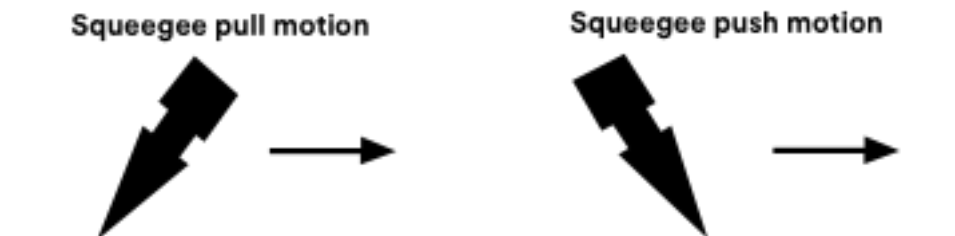
***Note:** When using solvents, extinguish all ignition sources, including pilot lights and follow the manufacturer's precautions and directions for use.

The top surface of the film should be wet with the soap solution throughout the process of applying the film to aid in the squeegee sliding across the film with ease.

There are two different squeegee strokes that are used when applying 3M™ Industrial Protective Film.

The **“Pull”** squeegee stroke is the most common squeegee method to apply Industrial Protective 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.



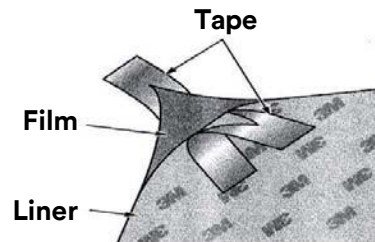
3M™ Industrial Protective Films 7070UV & 7071UV

Application & Removal Instructions

Step 4: Apply Film to Surface (continued)

Note: Overlap squeegee strokes to ensure no solution is left between the film adhesive and the surface.

- Remove the protective paper liner to expose the acrylic adhesive. If having difficulty starting the liner, a small masking tape tab placed on the corner can aid in easily lifting the liner from the adhesive.



- Using the Soap Solution, spray your fingers, the surface where the film will be applied and the adhesive side of the film. The Soap Solution allows you to slide the film into its desired position.
- Properly position the film and lay down on the surface followed by using the squeegee to remove the Soap Solution.
- Continually re-wet your fingers, film and surface with the Soap Solution throughout the application process as needed to aid in slip and ease of application.
- Dry the surface with a soft clean cloth and inspect for bubbles.
- During the application, bubbles can be removed by making firm, quick squeegee “pushing strokes” toward the nearest edge that has not been tacked down.
- If the film part requires stretching into place, Alcohol Solution will be needed. The most common method is the “Center Tack Method” of installation. Slightly lift the film and spray the center of the adhesive side with the Alcohol Solution. Properly position the film and squeegee the center to lock in place.
- The Alcohol Solution washes away the soap and softens the adhesive to allow an instant bond.
- For best results, work with one half of the film at a time. Position and secure the first half of the film and then move to the other half.
- Keep the adhesive wet during application to facilitate repositioning.
- When film requires stretching, such as applying film to a curved surface, use the “**Palm Stretching**” method.

3M™ Industrial Protective Films 7070UV & 7071UV

Application & Removal Instructions

Step 4: Apply Film to Surface (continued)

“Palm stretching” method:

- Dry the surface of the film where you will be applying pressure with your palm.
- Using your dry palm, stretch the film to line up with the next tact point.
- Squeegee the film to lock the stretch into place.
- Repeat as necessary.
- Re-wet the film again with the Soap Solution.
- To remove remaining solution beneath the film, squeegee from the center point of the application and slide toward the edges of the film.
- If film fingers (linear film pockets, formed at the edge of the film that have not adhered to the surface after initial squeegeeing) have formed, spray inside the fingers with Alcohol Solution and re-squeegee. This motion pushes out any remaining solutions.
- Wipe the film with a clean dry cloth to get a clear look at the application.
- If any water pockets or air bubbles are remaining, re-wet the surface and your fingers with the Soap Solution and re-squeegee.
- 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.
- Repeat this procedure on the second half of the film.

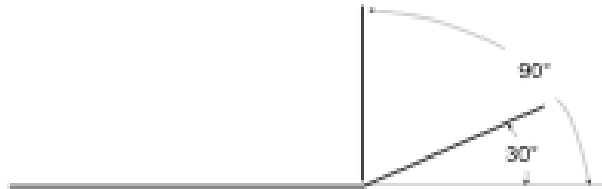
IMPORTANT NOTE: Do **NOT** wash or disturb the film on the surface for 24 hours to allow maximum bond.

3M™ Industrial Protective Films 7070UV & 7071UV Application & Removal Instructions

Step 5: Film Removal 3M™ Industrial Protective Film Removal Procedure:

- The film can be removed at any time, if desired. Lift a corner of the film and remove with a pulling action using a 30° to 90° degree angle.

Removal angle



- If the film is difficult to remove due to age or cold temperatures, then a steamer can be used. 3M suggests a wallpaper or clothes steamer, which is available in stores. Steam softens the film and makes it easier to remove. Using the steam removal method, the adhesive stays on the film during removal, requiring less adhesive clean-up. The steamer should be used by steaming through the backing of the film while lifting the film from one end and peeling. Do **NOT** steam the adhesive leading edge.



Wall paper steamer

- A heat gun or hair dryer can also be used to soften the adhesive. This method may cause the adhesive to split which will require more adhesive to be cleaned off the surface.
- If any adhesive remains on the surface after removal of the film, it can be removed by using 3M™ General Purpose Adhesive Cleaner (3M Part #08984 or #08987), 3M™ Woodgrain and Stripe Adhesive Remover (3M Part #08908) according to the package directions or 3M™ Natural/Citrus Cleaner. These products are available from 3M.

3M™ Industrial Protective Films 7070UV & 7071UV

Application & Removal Instructions

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer

Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability

Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

ISO 9001

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

3M

Industrial Adhesives and Tapes Division

3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-362-3550 • 877-369-2923 (Fax)
www.3M.com/industrial



Recycled Paper
40% pre-consumer
10% post-consumer

3M is a trademark of 3M Company.
Johnson's Baby Shampoo is a registered
trademark of Johnson & Johnson.
Printed in U.S.A.
©3M 2015 (5/15)