

# 3M™ Polyurethane Protective Tapes 8657DL, 8658DL, 8663DL, 8672 Aircraft Interior Tapes for Fluid Barrier/Wet Area Protection

## Introduction

This bulletin describes the recommended procedures for installing 3M™ Polyurethane Protective Tapes as a fluid barrier in aircraft interiors to help reduce aircraft floor subsystem corrosion. It details the necessary steps to assess and prepare a substrate, seal panel joints, and apply the adhesive backed film to aircraft floor panels. It also describes the techniques used for cutting and trimming, splices, panel joints and surface protrusions.

3M™ Polyurethane Protective Tape Product	Utility	Appearance	Applications
8663DL	Wide area coverage	Transparent	Moisture barrier protection applications
8672	Seal floor panel joints		
8657DL	Wide Area Coverage	Translucent White	Applications where enhanced flame retardant properties are required
8658DL	Seal floor panel joints	Transparent	

## Health and Safety

### Caution

When handling any chemical products, read the manufacturers' container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information.

To obtain SDSs for 3M products:

- By fax, call 1-800-364-0768 in the United States and Canada, For other locations call 650-556-8417 for all other locations, or
- Visit us at <http://www.3M.com>, then select MSDS search, or
- By mail, or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturers' instructions for safe operation.

### Caution

Any activity performed for a long period of time in an awkward position or with a high amount of forces is potentially a risk for causing musculoskeletal strain, pain or injury. When applying film, follow these practices to improve comfort and avoid injury:

- Wear approved safety shoes when required.
- Wear kneepads when kneeling is necessary.
- Cranial and hearing protection should be used as conditions demand.
- Alternate your tasks between crew members during the application.
- Avoid awkward reaching.
- Perform stretches or exercises to improve circulation.

# 3M™ Installation Bulletin

## Polyurethane Protective Tapes on Aircraft Floors

### Tools and Equipment

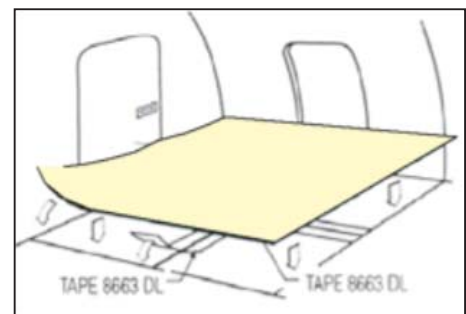
The following tools and equipment are recommended to use for substrate preparation and installation of tape. Item quantities should be determined based on the size and requirements of the installation.

- 3M™ Polyurethane Protective Tape 8657DL or 8663DL (24" wide) for broad area coverage
- 3M™ Polyurethane Protective Tape 8658DL or 8672 (4" wide) to seal floor panel seams
- Knee pads
- Permanent marking pen
- Utility knife
- Scissors
- X-ACTO® knife or surgeon's scalpel
- Applicators
  - Small plastic squeegees
  - 3M™ Doodlebug™ Handblock Pad Holder with Pads 6473 (70-0713-1209-7), or
  - Wide felt squeegee
- Tape measure – 12' minimum
- Scratch awl
- Hard plastic scraper
- Cleaning rags
- Isopropyl Alcohol
- Poly gloves (Nitrile), latex free
- Heat gun

### Installation Procedure

Please read and understand these instructions before attempting the installation. Proper installation of 3M™ Polyurethane Protective Tape to the aircraft flooring can provide many years of service and help minimize subsystem corrosion. Installation of 3M Polyurethane Protective Tape to the aircraft floor system requires the following steps:

- 1) Application Survey
- 2) Surface Preparation and Cleaning
- 3) Tape Application
  - liner removal
  - floor panel seam sealing with 3M Polyurethane Protective Tape
  - floor covering with 3M Polyurethane Protective Tape
- 4) Final Inspection



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## Polyurethane Protective Tapes on Aircraft Floors

### Application Survey

Prior to any installation, conduct a survey of the surfaces where tape will be applied. Substrate conditions will determine the methods necessary to prepare the surface before applying the tape. It will also help you plan the application to optimize the size and placement of individual tape sheets and splices, and to determine the location of areas where special application techniques will be required (e.g. surface protrusions, wall/edge dams, etc.). Inspect the surfaces for imperfections that may interfere with tape adhesion. Foreign matter and old seam tape or sealants are examples that may reduce tape adhesion to unacceptable levels and should be removed prior to installation of the tape.

### Surface Preparation and Cleaning

#### **Caution**

Before handling any chemical products, always read the container label and the SDS. Local air quality regulations may regulate or prohibit the use of surface preparation and cleaning materials based on VOC content.

- Repair or replace any damaged floor panels.
- Remove all tapes, adhesives and sealants from the floor panels. Use only approved scrapers and other tools that will not damage the substrate.
- Remove any dirt, oils or other surface contaminants with an approved surface cleaner or Isopropyl Alcohol. Other detergents and solvents, approved for use on the substrate, may also be used.\*\*

### Tape Application

#### **General Recommendations**

- The intent is to create a shallow containment well to prevent fluids from migrating to underlying structures and initiating corrosion in those structures.
- Floor covering tapes are supplied with liners on one or both sides of the tape. Remove only the adhesive-side liner for installation. The topside liner is removed after tape installation and before an adjacent sheet is applied.
- Typically, teams of two installers are recommended for most tape applications. It is also helpful if each installer is equipped with the tools described in the “Tools and Equipment” section of this bulletin.
- Always make sure the surfaces are clean and dry before applying tape. Do not use a wet application technique recommended for other uses of the 3M™ Polyurethane Protective Tapes.
- Normally, a 3M™ Doodlebug™ Handblock Pad Holder with Pads 6473 or wide felt squeegee are useful for applying full sheet widths; and the smaller plastic squeegee is useful for installing tape on floor panel seams and for working around surface protrusions, in corners and small sites. Use a squeegee with a clean, smooth edge. Replace it when the edge feels rough to the touch.
- Adjacent sheets should be overlapped at least 1" minimum.

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

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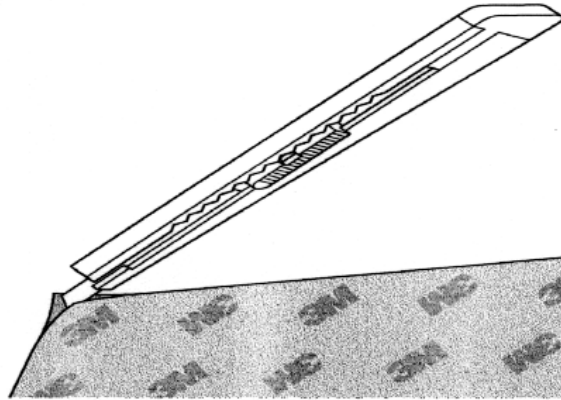
## Polyurethane Protective Tapes on Aircraft Floors

### Tape Application (continued)

#### Liner Removal

Remove only as much liner as required for your application method. Usually 4-6 inches is a good starting point. With experience, and a flat, uniform surface, this can be increased accordingly. The procedure for removing the liner is to pull it away from the tape starting near the edge of the tape with a sharp, continuous motion. Except for small tape pieces, it is recommended to have one person hold the tape sheet near the corners, while another person pulls the liner down away from the sheet. The following methods are recommended to initiate adhesive liner removal:

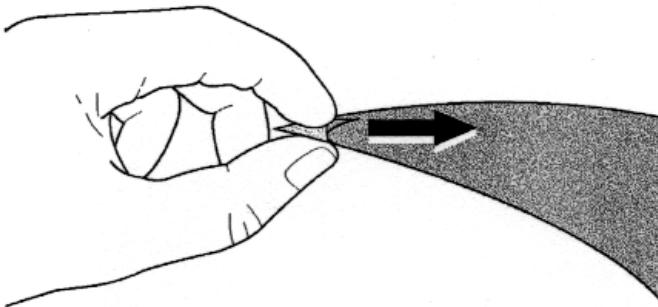
**Method 1:** While holding the tape near a corner in one hand, carefully separate the tape and liner at the corner using a utility knife. See Figure 1. As the liner and tape separate, fold the liner over to keep them separated and assist in gripping and pulling them apart. Applying a piece of strapping (filament) tape or packaging tape to the adhesive liner (3M logo side) at the corner will assist initiating removal of the liner.



ALAD-05A

Figure 1: Separate Tape and Liner with Blade

**Method 2:** While facing the adhesive liner side (3M logo side) and holding the tape near a corner in one hand, bend and roll the edge near the corner with your thumb towards the liner side. See Figure 2. Repeat several times until the liner separates from the tape. Carefully grip the separated liner between fingertips and pull away from the tape. This method is somewhat difficult and requires the ability to grip 1/16" – 1/8" tape. Applying a piece of strapping (filament) tape or packaging tape to the adhesive liner (3M logo side) at the corner will assist initiating removal of the liner. See Figure 3.



ALAD-04A

Figure 2: Roll liner corner away from tape

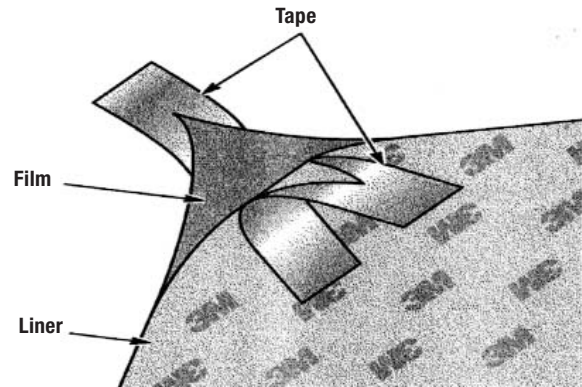


Figure 3: Remove liner with a piece of tape

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## Polyurethane Protective Tapes on Aircraft Floors

### Tape Application (continued)

#### **Floor Panel Seam Sealing Application**

Floor panel joints may be sealed with narrow strips of 3M™ Polyurethane Protective Tape 8672 or 3M™ Polyurethane Protective Tape 8658DL prior to installing the large sheets of film. It is optional to seal these joints with a sealant prior to using tape (consult your maintenance procedures).

1. If a polysulfide or other curing sealant is applied to floor panel seams, install tape over the sealant before the sealant has cured.
2. With a scissors, cut a length of tape to cover the length of the panel joint. If the panel joint terminates at a wall or other structure, allow approximately 2 - 3" of excess tape beyond the end of the panel to construct an edge dam of tape up the wall or structure.
3. Separate 4 - 8 inches of adhesive liner from the tape. Fold the released adhesive liner away from the exposed adhesive.
4. With minimum finger contact, grasp the tape inside the corners and hold close to the application site. With the help of another installer, align the tape over the panel seam and lightly tack the tape leading edge to the panel surface. Before continuing, recheck the alignment of the tape along the seam.
5. Lightly squeegee the tape into position using the recommended small plastic squeegee. It helps to have the second person hold the tape under light tension several inches beyond the tack line and to remove the adhesive liner. This helps maintain a flat, unwrinkled tape surface.
6. If wrinkles or bubbles begin to appear, it is best to back the tape off the surface a few inches with sharp, uniformly applied pulls on the tape where the adhesive liner is still attached, then re-adhere the tape without bubbles. Continue this sequence until the tape is applied.
7. After the tape is applied, repeat the squeegee operation across the entire surface using firm strokes with the squeegee, or rub firmly by hand. This will increase adhesive conformation to the surface and 'chase' air out through the edges.
8. If using 3M 8658DL Tape, remove the topside liner before proceeding. It may be helpful to use a razor blade on the edge of the tape to initiate removal of this liner.

#### **Floor Covering Application**

1. Plan the installation such that overlap seams of tape are not positioned directly above taped floor panel joints.
2. Around the perimeter of the installation, and around other structures, allow approximately 2 - 3" of additional 3M™ Polyurethane Protective Tape 8657DL or 8663DL beyond the edge of the floor panel to provide a fluid dam at the intersection of the floor panel and wall or structure. When floor panels terminate without an intersecting wall or butting structure, cargo liner laminate may be used along the panel edge to provide a vertical stiffener for an edge dam.
3. Prior to installing the floor covering tape, cover any hard points protruding from the floor surface with piece of 3M 8658DL or 8672 Tape. Allow for 1-2 inches of seam tape beyond the limits of the surface protrusion. Use a small plastic squeegee to conform the tape around the protrusion. Applying heat to the tape will assist in conforming it to the protrusion.
4. Cut a sheet of 3M 8657DL or 8663DL Tape to fit a site location.
5. Separate 4 - 8 inches of adhesive liner from the tape. See Figure 1 and Figure 2. Fold the released liner away from the exposed adhesive.

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### Tape Application (continued)

#### Floor Covering Application (continued)

6. With minimum finger contact, grasp the tape inside the corners and hold close to the application site. With the help of another installer, align the tape over the panel and lightly tack the tape leading edge to the panel surface. Before continuing, recheck the side edge alignment.
7. Using the recommended applicator, begin at the initial tack line and with constant pressure on the squeegee, adhere the tape as the liner is removed. A second installer is helpful to maintain tape alignment and remove the liner as the first person operates the squeegee.
8. When hard point surface protrusions are encountered, lightly lay the tape over the hard point and mark a cutout location on the tape with a marking pen. With a scissors or utility knife, trim out the tape to allow the sheet to fit around the protrusion previously covered with seam tape.
9. Continue this sequence until all liner is removed from the sheet and the tape is adhered to the floor.
10. After the liner is removed, repeat the squeegee operation across the entire surface using firm strokes with the squeegee. This will increase adhesive conformation to the surface and ‘chase’ air out through the edges.
11. Using a small plastic squeegee, conform the tape perimeter up any adjacent walls or other structures. At corners, the tape can be slit and overlapped to form a sealed corner.
12. Remove the topside liner of each sheet before the adjacent tape is applied. A piece of packaging tape or strapping (filament) tape may be applied to a corner of the liner to aid removal. See Figure 3.
13. Where fasteners must be installed through the tape, use a scratch awl, X-ACTO® knife, surgeon’s scalpel or similar tool, to puncture the tape at each fastener location. This will allow for easier reattachment of the fastener after the tape is installed.
14. Overlap adjacent sheets by 1" minimum.

**NOTE 1:** Remember to remove the top liner from an installed sheet before overlapping the next adjacent sheet.

**NOTE 2:** Some operators leave the top liner on the floor covering tape until monument installation is complete in order to protect the tape surface from dirt and traffic. If you choose to do so, pull back the top liner a few inches along the length of the tape at the overlap area to allow for bonding of the adjacent section of tape. Once the new length of tape has been bonded, lay the top liner from the previously installed section back over the overlap area. Leaving the top liner on until the installation of the monuments is complete will result in less clean up and a better bond of the non-textile flooring to the tape surface.

### Final Inspection of Tape Installation

- Inspect each application site to confirm that the tape was applied as planned with the correct overlaps, edge configuration, adhered edges; and that the surface protrusions are covered and trimmed properly.
- Inspect and confirm that all fastener holes have been punctured.
- Inspect any movable structures or equipment to ensure that the tape will not hinder their operation. Perform an operational test of each piece of equipment or structure if necessary to confirm unhindered operation.

### Shelf Life and Storage

- **Shelf Life:** Two (2) years from the date of manufacture or as expressly certified by 3M.
- Store tape rolls in their original container. Return all partially used rolls to the original shipping container, and to protect the tape edges, replace the roll-end inserts.
- Store the tape in a clean, dry area under standard warehouse conditions.

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### Precautionary Information

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, please visit [www.3M.com/msds](http://www.3M.com/msds) or call 1-800-364-3577 or (651) 737-6501.

### For Additional Information

In the U.S., call toll free 1-800-235-2376, or fax 1-800-435-3082 or 651-737-2171. For U.S. Military, call 1-866-556-5714. If you are outside of the U.S., please contact your nearest 3M office or one of the following branches:

<b>Australia</b> 61-2-949-89333 tel	<b>Austria</b> 01-86686-298 tel	<b>Brazil</b> 55 19 3838-7876 tel	<b>Canada</b> 800-410-6880 ext. 6018 tel
<b>China</b> 86-21-62753535 tel	<b>Denmark</b> 45-43-480100 tel	<b>France</b> 0810-331-300 tel	<b>Germany</b> 02131-14-2344 tel
<b>Hong Kong</b> 852-2806-6111 tel	<b>India</b> 1-800-425-3030 tel (inside country only)	<b>Italy</b> 02-7035-2177 tel	<b>Japan</b> 03-3709-8165 tel
<b>Korea</b> 02-3771-4114 tel	<b>Malaysia</b> 60 3 7806 2888 tel	<b>New Zealand</b> 64-9-477-4040 tel	<b>Netherlands</b> 31-71-5-450-272 tel
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<b>Switzerland</b> 01-724-9114 tel	<b>Thailand</b> 66-2260-8577 tel	<b>United Kingdom</b> (0) 161-237-6174 tel	

### 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.

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### 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.

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These products were manufactured under a 3M Quality Management System registered to the AS9100 standard.



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