3M™ Impact Protection Profile Installation System
Instructions

IMPORTANT: READ INSTRUCTIONS FOR USE BEFORE OPERATING

Intended Use:

The 3M™ Impact Protection Profile Installation System is for installing 3M™ Impact Protection Profile (IPP). It consists of a multifunctional tool used to properly align the profile on the window and to corner cut the profile at an optimal angle for the mitering of joints. It also includes a custom sized applicator roller used to help bond the IPP adhesive to the film and frame. The system is for use only with 3M IPP BP950 and BP700. It is expected that all users will be fully trained in the proper operation of the 3M™ Impact Protection Profile Installation System. Use in any other application has not been evaluated by 3M and may lead to an unsafe condition.

SAFETY INFORMATION

Please read, understand, and follow all safety information contained in these instructions prior to the use of the 3M™ Impact Protection Profile Installation System. Retain these instructions for future reference.

<table>
<thead>
<tr>
<th>Explanation of Signal Word Consequences</th>
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<tr>
<td><strong>CAUTION:</strong> Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury and/or property damage.</td>
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3M Renewable Energy Division
St. Paul, MN 55144-1000
1-800-480-1704
www.3M.com/windowfilm

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Summary of device labels containing safety information

CAUTION: SHARP BLADE

CAUTION

• To reduce the risks associated with sharp cutting blades:
  - Keep fingers out of path of the cutting blade when in use.
  - Ensure that the Base Plate is installed prior to use.
  - Use care when repositioning or changing the cutting blade.
  - Remove blade prior to disposal of the tool.
  - Discard used blades in an appropriate sharps container.

CAUTION

• To reduce the risks associated with impact:
  - Secure tool with safety lanyard when working at height.
  - Keep bystanders away from working area.
  - Replace springs only with Part. No. 9657K414 available from McMaster-Carr (Steel Compression Spring Zinc-Plated Music Wire, 2.50" L,.375" OD,.035" Wire) or a spring of equivalent dimensions and compressive energy.

CAUTION

• To reduce the risks associated with sharp or rough edges:
  - Do not use tool if any part of it is damaged.

Project Site Considerations:

• Ensure the work area is clean, dry and free of obstacles. Film should be allowed to dry for at least 7 days before installing IPP. If residual moisture from film installation is visible near edges of film, do not apply IPP.

• Ensure that the selected size of IPP is appropriate for the project. When flexed in a symmetrical 90-degree orientation, IPP must comfortably span the existing window gasket. For BP950, maximum gasket width is 5/16”; for BP700, maximum gasket width is 3/16”.

• IPP is only suitable for metalized frame systems where there is sufficient frame surface perpendicular to the glass. Do not apply IPP on sloped frame surfaces, wood frames, or other surfaces where IPP does not fit easily.

• Conduct an adhesion test to the existing window frames. Apply a small section (3 – 5 inches) of IPP to the frame by removing the liner from one of the tape strips and affix to the frame using sufficient pressure and a roller tool. Wait a minimum of 6 hours to allow the adhesive bond to cure, and then check adhesion by peeling off the profile at 90 degrees. If IPP peels cleanly from the frame, then 3M™ Primer 94 is required. Conduct a separate adhesion test by first cleaning the frame surface with 3M™ Primer 94. When adhesive residue is left on the frame after the peel test, adhesion is satisfactory.
Materials:
- 3M™ Impact Protection Profile (BP950 or BP700)
- 3M™ Impact Protection Profile Installation System (Installation Tool and Roller Tool)
- Profile cutter
- 3M™ Primer 94 (low odor alternative is 3M™ Adhesion Promoter 111)
- Razor blade or utility knife
- 3M™ Citrus Base Cleaner or rubbing alcohol
- Rubber nitrile gloves
- White grease pencil

Window Prep:
- Ensure window frame and film surfaces are dry and free of dirt, debris, dust and grease. Remove any contaminants on frame surface with 3M™ Citrus Base Cleaner, rubbing alcohol, or commercial cleaning solution. **Do not use soapy water to clean the frame as soap and water residue could reduce IPP bond strength.**
- For difficult to remove contaminants, a plastic scraper or razor blade may be used in conjunction with 3M Citrus Based Cleaner, alcohol, or commercial cleaning solution. Consult with building owner or project manager prior – 3M does not assume liability for any damage that may be incurred during cleaning process. IPP requires a clean, dry and smooth frame surface to bond properly.
- Do not use any abrasive cleaners or tools on the film surface.
- If frame surfaces are relatively clean, 3M Primer 94 may be used as combination cleaning / priming agent. Apply a small amount of Primer 94 on a lint free towel and simply wipe onto the frame.

Film Installation:
- Follow 3M Window Film Installation Instructions.
IPP Tool – Components:
The IPP Tool consists of the following features (refer to Figure 1):

a. BP950 Alignment Surface – wide cavity along the side of the tool for positioning larger sized BP950 profile
b. BP700 Alignment Surface – narrow cavity along the side of the tool for positioning smaller sized BP700 profile
c. Positioning Flats – Flat sections on either side of the Alignment Surfaces. These flats rest simultaneously against the frame and film surface to lock the profile into place during installation
d. Alignment Crest – section at the end of the Alignment Surface, nearest the Cutter Knob, that ultimately flexes the profile into the required 90-degree conformation.
e. Alignment Entrance – section at the end of the Alignment Surface nearest the Base Plate, that eases the profile into alignment
f. Cutter knob – rotating knob that drives the miter cutting blade. Rotate clockwise approximately 1 revolution to cut through the profile. The blade has a spring loaded return mechanism.
g. Profile Cutting Slot – section of tool to insert IPP for making properly mitered corner cuts.
h. Base Plate – removable Aluminum plate that secures and positions inserted profile into the proper shape during cutting. There are two sizes: one labeled “950” for use with BP950 and one labeled “700” for use with BP700. Each plate is magnetically secured into place. Each plate can be inverted depending on the type of miter joint to be cut (left-side or right-side miter cut). Each plate also has 4 narrow measuring pockets to determine how far to insert the profile into the cutting slot (see Section on Double-end Miter Cutting).
i. IPP Tool Body – general description referring to the body of the Tool, comprised of the Alignment Surfaces, Positioning Flats, Profile Cutting Slot, Blade Subassembly Cavity and Return Springs.
j. IPP Tool Top – removable section of Tool comprised of the Alignment Crests, Blade Subassembly, and Cutter Knob. This section is removed to change dull or damaged blades, and to set orientation of the blade to BP950 or BP700.

Figure 1.
IPP Tool – General Use

**CAUTION**

- To reduce the risks associated with sharp cutting blades:
  - Use care when repositioning or changing the cutting blade.
  - Discard used blades in an appropriate sharps container.

**CAUTION**

- To reduce the risks associated with impact:
  - Secure tool with safety lanyard when working at height.
  - Keep bystanders away from working area.

To position or change blades:
1. Remove the two screws from the IPP Tool Top.
2. Pull the Blade Subassembly out of the IPP Tool Body.
3. To replace blade, loosen the two screws in the blade mount, carefully remove blade and safely dispose of old blade in sharps container, replace with new blade, and tighten screws to secure. Ensure that the blade is seated properly – there should be no visible gap between the blade and the blade mount clamp. **IMPORTANT – use maximum torque on the screws to tighten the blade.**
4. To set or change orientation of the Blade Subassembly, align the arrow on the top of the blade mount with the number indicating the IPP size on the IPP Tool Body. When arrow is pointing to “700” the blade is set for miter cutting the smaller profile, BP700; when pointing to “950”, it is set for the larger BP 950. Refer to Figure 2.

![Figure 2.](image)

- Blade set for BP 700
- Blade set for BP 950

5. Insert the Blade Subassembly into the cavity of the IPP Tool Body. Make sure the posts on the blade mount are inserted into the two springs in the Tool Body.
6. Rotate the IPP Tool Top so that the two Alignment Crests match the Alignment Surfaces on the IPP Tool Body.
7. Fasten the IPP Tool Top to the IPP Tool Body by reinserting the two screws.
To verify miter cut setting without disassembling:

1. Remove the Base Plate to expose the Profile Cutting Slot
2. Inspect the position of blade angle relative to the Profile Cutting Slot. When the blade angle is tilted more towards the Cutting Slot, it is set for miter cutting BP950 profile. When the blade angle is tilted away from the Cutting Slot, it is set for miter cutting BP700 profile. Refer to Figure 3.

To change Base Plates or Base Plate orientation:

1. The Base Plate is magnetically held into place. To remove, simply slide the plate sideways underneath the heads of the button head screws. It is not necessary to loosen or remove these screws
2. Reverse the plate orientation for left or right cuts; or insert a different plate as needed to install BP700 or BP950.

To position / align IPP on the window:

1. Place Tool over the profile such that both Positioning Flats are in full contact with window film and the frame surface. Readjust profile position if necessary to fit comfortably within the Alignment Surface.
2. Ensure the proper Alignment Surface is being used for the size profile being installed. The narrower face is used for BP700; the wider face for BP950.
3. While maintaining full contact with both Positioning Flats on the window film and frame, and leading with the Base Plate end of the tool, slide the IPP Tool from one end of the profile to the other.
To miter cut IPP:
Depending on how the profile is inserted into the Cutting Slot, a “left” or “right” end miter cut will result. The left and right ends of the profile strips are determined by viewing the sections of the window frame (header, jambs, and sill) from the perspective of the center of the glass (See Figure 4). From this perspective, Left and Right are defined as follows:

- Header: natural L/R orientation
- Right Jamb: L = Top; R = Bottom
- Left Jamb: L = Bottom; R = Top.
- Sill: reverse L/R orientation

NOTE: Profile pieces installed along the sill should not be mitered; both ends should be cut straight.

![Figure 4.]

**CAUTION**

- To reduce the risks associated with sharp cutting blades:
  - Keep fingers out of path of the cutting blade when in use.
  - Ensure that the base plate is installed prior to use.

Left End Cut (See Figure 5):

1. Position the Base Plate with the profile support arch facing **inwards**, so that the letter “L” (for “LEFT”) is visible on the bottom of the Base Plate.
2. Insert IPP into the Profile Cutting Slot until it extends to the other side. **TIP: Insert only straight-cut ends of IPP with tape liner ON to avoid the profile getting stuck in the Profile Cutting Slot.**
3. Cut the profile by holding the IPP Tool Body with one hand, and rotating the Cutter Knob with the other hand. Rotate the knob until it stops (about 1 revolution) to make a complete cut through the profile.
4. Release the knob to back out the blade, and pull the profile out of the cutting slot. Discard the trimmed portion of IPP.

![Figure 5.]
Right End Cut (See Figure 6):
1. Position the Base Plate with the profile support arch facing *outwards*, with the letter “R” (for “RIGHT”) visible on the bottom of the Base Plate.
2. **IMPORTANT:** Always flex the IPP in the same shape as the support arch of the base plate. For right-end cuts, this means the red IPP tape liner must face down (or towards the base plate).
3. Complete the cut by following steps 2-4 from the previous section. These steps are identical for left and right end cuts.

Double-ended miter cutting (see Figure 7):
- Some profile strips require both ends to be mitered. One end is easily cut and positioned into the corner by hand. The other end, however, must be cut with the IPP already partially installed on the window.
- It is recommended that the right-end side of the profile is applied first, then finishing with a left-side miter cut at the other end.
  1. Leave the tape liner on approximately 12 inches (30 cm) from the corner requiring the double end miter cut.
  2. Mark where the profile needs to be cut. Mark the film side of the profile, not the frame side. Place a notch in the profile with a razor blade, utility knife, or mark it with a white grease pencil. Make sure the marking is visible along the very outer edge of the profile. *(NOTE: for marking a right-end cut, the mark must be visible from the profile's tape edge nearest the center).*
  3. Now that you have marked where the profile must be cut, hold the IPP Tool with the Base Plate facing you, and insert the profile into the cutting slot.
  4. Insert the profile until your marking meets the measuring pocket of the Base Plate.
  5. Cut the profile and complete the installation.
IPP Installation

1. Cut length of profiles needed for each side of window. Each strip should be cut about 2 inches (5 cm) longer than final installed length. Use a profile cutter to make straight flat cuts at the ends.

2. First install profile along the window sill (bottom of window).
   a. Remove about 6 inches (15 cm) of tape liner from one end of the profile. The section of removed liner should flare out from both sides of the profile. Avoid touching the adhesive tape with fingers to reduce contamination.
   b. Holding the edges of this end of the profile with your thumb and index finger, use your forefinger to flex the profile such that the two adhesive taps strips are perpendicular to each other. See Figure 8. Gently apply the flexed profile into the bottom corner of the window frame. **IMPORTANT:** Position the end of the profile about 1/8" (~3mm) from the edge of the frame jamb.
   c. Gently tack down the first 6" of length from the corner by hand. To help the profile remain in alignment, gently pull it towards the other end of the window.
   d. Place the IPP tool in the corner over the section of applied profile, with the Base Plate facing towards other end. Ensure you are using the correct Alignment Surface for the specific size of profile being applied. Ensure that both flats of the IPP Tool are pressed flush against the window frame and applied window film, and that the base plate is the leading edge. Refer to Figure 9.
   e. With one hand on the IPP Tool and the other hand on the profile, align the rest of the profile by simultaneously removing the tape liner while moving the IPP Tool across to the other end. Maintaining tension on the profile will help guide it through the Alignment Surface.
   f. Leaving the last 6 inches of tape liner on, make a straight, flat cut on the end of the profile, leaving a 1/8" (~3mm) gap from the frame jamb as before.
   g. Pull off the remaining liner and use the IPP Tool to complete alignment.
   h. Now, using the IPP Roller, apply firm pressure to the profile to activate the adhesive bond to the window. Center the wheel of the roller onto the profile and press deeply to ensure that both adhesive strips receive sufficient pressure. Use the IPP Roller along the entire length of profile.
   i. Use the handle of the roller to tack down the ends of the profile at the corners.

3. Install profile along the frame jambs (vertical sections)
   a. Create a miter cut with the IPP Tool. Refer to previous section on miter cutting IPP. **Reminder:** when inserting IPP into the cutting slot, always flex IPP so it is curved in the same direction as the Base Plate arch. Poor cutting results may occur if this instruction is not followed.
   b. Install the profile beginning with mitered end first.
   c. Repeat steps 2c – 2i to align and position the rest of the profile.
4. Install profile along the header.
   • The last section of profile requires both ends to be mitered. The one end is mitered before installing, but the other end must be mitered while the profile is partially installed on the glass.
     a. First create a RIGHT-END miter cut.
     b. Repeat steps 2a to 2e to align and position the profile.
     c. Leave about 12" (30 cm) of liner on at the other end of the profile.
     d. To miter the other end of profile (Refer to Section on Double End miter Cutting):
        i. Place a visible mark where the film side edge of the profile needs to be cut.
        ii. Set the base plate for a LEFT-END miter cut.
        iii. Insert the profile through the cutting slot until the marking meets the measuring pocket on the Base Plate. Cut the profile at this mark.
        iv. Repeat steps 2g to 2i to complete the installation.

Care, Maintenance, and Disposal

⚠️ CAUTION

- To reduce the risks associated with sharp or rough edges:
  - Do not use tool if any part of it is damaged.

- To reduce the risks associated with sharp cutting blades:
  - Keep fingers out of path of the cutting blade when in use.
  - Use care when repositioning or changing the cutting blade.
  - Remove blade prior to disposal of the tool.
  - Discard used blades in an appropriate sharps container.

- To reduce the risks associated with impact:
  - Replace springs only with Part. No. 9657K414 available from McMaster-Carr (Steel Compression Spring Zinc-Plated Music Wire, 2.50" L,.375" OD,.035" Wire) or a spring of equivalent dimensions and compressive energy.

• Take care not to drop the tool, which could damage parts, causes dents along critical surface areas, or compromise its function. Do not use the tool if any part of it is damaged.
• Do not use if blade becomes dull or damaged. A dull blade will result in less precise cuts. To change the blade, refer to previous instructions on changing blades.
• If the nut inside the IPP Tool Top begins to rotate or recess out of the tool, check to make sure the two set screws in the IPP Tool Top are properly embedded into the nut.
• Dispose of blades in an appropriate sharps container
• If the tool becomes unusable, remove the blade and the tool may be disposed of in the regular trash.

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