

3M™ Solar Acrylic Foam Tape Application Techniques

Cleaning

Most substrates are best prepared by cleaning with a 50:50 mixture of isopropyl alcohol (IPA*) and water prior to applying 3M™ Solar Acrylic Foam Tapes.

Exceptions to the general procedure that may require additional surface preparation include:

- **Heavy Oils:** A degreaser or solvent-based cleaner may be required to remove heavy oil or grease from a surface and should be followed by cleaning with IPA/water.
- **Abrasion:** Abrading a surface, followed by cleaning with IPA/water, can remove heavy dirt or oxidation and can increase surface area to improve adhesion.
- **Adhesion Promoters:** Applying an Adhesion Promoter on a surface can significantly improve initial and ultimate adhesion to many materials such as plastics and paints.
- **Porous surfaces:** Most porous and fibered materials such as wood, particleboard, concrete, etc. need to be sealed to provide a unified surface.
- **Unique Materials:** Special surface preparation may be needed for glass and glass-like materials, copper and copper containing metals, and plastics or rubber that contain components that migrate (e.g. plasticizers).

Pressure

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure develops better adhesive contact and helps improve bond strength. Typically, good surface contact can be attained by applying enough pressure to ensure that the tape experiences approximately 15 psi (100 kPa) pressure at the bondline interface. Either roller or platen pressure can be used. Note that rigid surfaces may require 2 or 3 times that much pressure to make the tape experience 15 psi.

Humidity

The suggested humidity target for the application is below 90% R.H. SAFT that has a paper liner should be kept and applied below 70% R.H. There is concern that bringing cold tape or substrates into a warm humid environment can also cause condensation, which impacts adhesion.

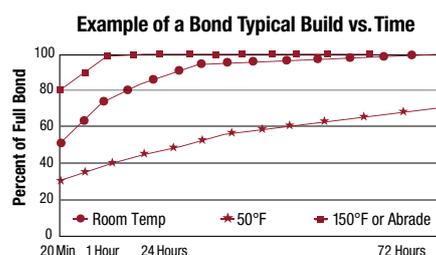
Temperature

Ideal application temperature range is 20°C to 50°C (68°F to 122°F). Pressure sensitive adhesives use viscous flow to achieve substrate contact area. Minimum suggested application temperatures to 10°C (50°F): 3M™ Solar Acrylic Foam Tapes.

To obtain good performance with all 3M Solar Acrylic Foam Tapes, it is important to ensure that the surfaces are dry and free of condensed moisture.

Time

After application, the bond strength will increase as the adhesive flows onto the surface. This flow is faster at higher temperatures and slower at lower temperatures. Ultimate bond strength can be achieved more quickly (and in some cases bond strength can be increased) by exposure of the bond to elevated temperatures (e.g. 150°F (66°C) for 1 hour). This can provide better adhesive wetout onto the substrates. Below is an example of a bond strength typical build versus time for a specific substrate. Actual build strength will depend on substrate type.



***Note:** Cleaning, degreasing, and promoting products are commonly regulated for volatile organic compound (VOC) content. Please consult your local Air Quality Regulations to be sure the cleaner is compliant. When using solvents, be sure to follow the manufacturer's precautions and directions for use when handling such materials.

Note: Initial tape application to surfaces at temperatures below these suggested minimums is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

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65 6450 8888

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86 21 62753535

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91 80 22231414

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