

3M™ Structural Bonding Tape 9270

Technical Data Sheet

3M™ Structural Bonding Tape (SBT) 9270 is formulated for bonding hardware components to glass, such as rearview mirror components, sensor brackets and mounting pins. 3M SBT is applied as a pressure-sensitive tape and then is heat-cured to develop semi-structural strength.

3M SBT 9270 offers the following key features:

- Excellent holding strength, including applications for heavier mirrors and multifunction sensors
- Excellent resistance to hot, humid environments
- Excellent image stability; reduces reflected image distortion from vehicle vibrations
- 3M SBT's pressure sensitive adhesive features allow for component application to glass without the need for fixturing during cure
- Tape cures to semi-structural strength during most windshield autoclave processes
- For use on glass with ceramic paint (frit) applications
- 3M SBT is pre-applied to hardware components
- Multiple packaging options are available for increased manufacturing efficiency of both automated and manual processes

Physical Properties

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Product	9270
Thickness	0.635 ± 0.08 mm (25 mil / 0.025 inch)
Color (Uncured)	Black
Color (Cured)	Gray

Storage and Handling

The handling of packaged parts should be minimized in cold storage. Under cold storage conditions the tackiness of the SBT and adhesion to the liner is reduced. Reduced tack makes it easier for the parts to become dislodged on the liner if the package is dropped or similarly mishandled. Allow parts to come to room temperature in original packaging prior to handling or processing to minimize the formation of condensation on the adhesive.

If a reel/box is dropped, it should be inspected for part misalignment prior to being used in production. At a minimum, the reel/box should be labeled that it was dropped or mishandled, preferably at the time of occurrence.



Shelf Life

- 3M highly recommends using the “first in, first out” stock rotation method to reduce expired material concerns.
- 3M recommends cold storage, 10°C or below (50°F or below), when not in use.
- Shelf life will decrease with higher temperatures.
- Shelf life of six months at 10°C (50°F) from date of shipment.
- Shelf life of two months at 27°C (81°F) and RH 50% from date of shipment. Refer to “3M Structural Bonding Tape Storage and Handling Guide for Mirror Components and Brackets.”

Application Procedures

1. Hardware component should be removed from the protective liner just prior to application in order to prevent contamination of the tape surface.
 - Either the component can be removed from the liner or the liner can be removed from the component. If removing the component from the liner, it will remove more easily when peeled away from the liner, instead of pulling straight up from the liner. If the liner is removed from the component, the liner should be peeled away from the component at a 90° angle.
 - Avoid any contact with the SBT surface as this can contaminate the tape and reduce its performance. If plasma-coated rollers are used as an interface with the 3M SBT during staging for robotic pick-up, a preventive maintenance schedule should be followed to ensure rollers are clean and the roller coating is functional.
2. Glass and/or frit surface should be free of contamination.
3. When applying hardware components to glass, it is important to achieve full wet-out of the 3M™ Structural Bonding Tape (SBT) to the glass. 3M SBT conformability is a function of three variables: application time, glass and adhesive temperature, and direct pressure. Wet-out can be improved by increasing one or more of these conformability variables. Additionally, wet-out can be improved when glass and component surface geometry are well matched.
 - Firm pressure is essential for full wet-out. The amount of pressure needed will depend on the glass and component mating surface geometry, glass temperature and pressurization time. A minimum pressure of 5.5 - 7.0 kg/cm² (80-100 psi) applied directly on the hardware is typically needed to achieve full wet-out. It may be necessary to directly support the glass underneath the component area during pressurization. Confirmation of wet-out can be seen through clear test windshields without a ceramic paint (frit) patch.
 - Optimal glass temperature for component application is between 82-93°C (180-200°F); this glass temperature range helps soften the 3M SBT and improve wet-out. Wet-out can be achieved at lower glass temperatures with increased application time and/or pressure.
 - Applying components with a rolling action can help reduce air entrapment between the 3M SBT and the glass.

Cure Conditions and Characteristics

A minimum of 95% cure is needed to achieve optimal strength.

- Differential Scanning Calorimeter (DSC) test equipment should be used to verify that cure level of at least 95% is achieved by the autoclave process.

Recommended requirements for autoclave processing:

- Minimum 25 minute hold at 130°C (266°F)
- Minimum 20 minute hold at 140°C (284°F)

Regulatory Information

Please refer to the product label and Safety Data Sheet (SDS) for health and safety information before using. Observe proper handling precautions as outlined in the SDS, which is available on request or at www.3M.com/msds. To obtain published IMDS ID numbers, email requests to 3M-IMDSrequest@mmm.com.

Contact Information

The information provided in this technical document is intended as a guide for this product. For more information or help in selecting a 3M product for an application, please contact your 3M technical service representative or call 1-800-328-1684.

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