

Installation Quality Standard for Applying Window Film to Glass

5.1.8.2 DECEMBER 2001

Foreword

This standard has been developed by the GGF Applied Film Group, in association with all major film manufacturers, to provide a method statement for the assessment and application of window film to glass. It is an evolving specification reflecting current design, material requirements and legislation, which will be subject to review as necessary.

1. Scope

This specification details the equipment, test methods, application and acceptance criteria applicable to the process of applying window film to glass.

The certified applicator shall install the window film in accordance with this GGF standard, and the manufacturer's recommendations, in order to meet the criteria of this Data Sheet and GGF Data Sheet 5.18 "Visual Quality Standard for Applied Window Film".

2. Appropriate equipment/materials

- Pressure spray bottle
- Clean water
- Cleaning/application solution
- Cutting machine
- Access equipment
- Trimming knife
- Glass scraper
- Window cleaning squeegee
- Application squeegees
- Straight edge margin cutting tool
- Calibrated tape measure
- Adhesive tape
- Soft paper towels or water absorbing material (non lint)
- Rubbish bags
- Protective sheets
- External edge sealant
- Sharp disposal container

3. Prior to commencing

Equipment

3.1 Ensure all relevant equipment is present clean and in good working order.

3.2 Check that frame type and condition, glass size and site access all agree with the written work instructions.

4. Location preparation

4.1 The applicator shall ensure that there is sufficient room to operate all equipment safely, with minimum disruption to the client. When a cutting machine is required, it shall be erected in an area where few people pass. Protect all appropriate areas with an absorbent material if required.

4.2 If the glazing area is exceptionally dirty or dusty, pre-clean.

4.3 Spray the window thoroughly with cleaning/application solution.

4.4 Using a glass scraper, clean thoroughly the surface of the glass, removing all foreign bodies, taking care to minimise damage to the edge gasket or paint work.

4.5 Rinse glass and frame from top to bottom with the cleaning/application solution.

4.6 Using a window cleaning squeegee, remove all residual cleaning/application solution from the glass, working from the top to the bottom.

4.7 Using an absorbent material, wipe around the frame of the window to remove excess cleaning/application solution.

4.8 Inspect glass and frame to ensure readiness for film application.

5. Film preparation

5.1 Inspection

5.1.1 Check film specification and note the manufacturer's batch/reference number, and record it.

5.1.2 Remove film from packing and inspect for visual defects and damage.

5.1.3 Any non-conforming film should be labelled "Reject", segregated from other film, and notified to internal quality assurance.

5.2 Material Cutting

5.2.1 Where required, mount the film on a cutting machine and secure in position.

5.2.2 Cut the film to the appropriate size.

5.2.3 Where necessary, roll each piece of film with the release liner outermost, and secure with masking tape with the film reference marked on it.

5.2.4 When the film for a group of pre-measured panes has been cut and rolled, transfer the film from the cutting area to the installation location, storing it carefully.



6. Installation

6.1 Spray the pre-cleaned pane with the cleaning/application solution.

6.2 Remove the liner from the pre-cut film. If the film has an over-coat barrier, rinse off thoroughly with the cleaning/application solution.

6.3 Spray the adhesive face of the film thoroughly with the cleaning/application solution.

6.4 Offer the adhesive side of the film to the prepared surface of the glass and place it in position.

6.5 Spray the surface of the film, using the application solution to enable the squeegee to move freely across the surface without disturbing its position, and to minimise surface abrasion.

6.6 Use the appropriate squeegee to remove the excess application solution from between the film and the glass (see Figure 1), taking care to overlap the squeegee strokes.

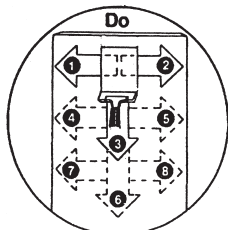


Figure 1

6.7 Where appropriate, place the straight edge margin cutting tool against the window frame. Using a trimming knife with a sharp blade, trim the excess film ensuring all margins are in accordance with GGF Data Sheet 5.18 "Visual Quality Standard for Applied Window Film".

6.8 Repeat the previous squeegee procedure with increasing pressure as necessary. Ensure good contact between the edge of the film and the glass.

6.9 Dry thoroughly the perimeter of the glass and film, using an absorbent material.

7. Splicing of window film

The majority of manufacturers supply film in varying widths, generally up to 1500 mm. Inevitably, some window panes may exceed maximum film widths. Under

these circumstances, it becomes necessary to perform a splice or butt joint using two or more sections of the film.

7.1 Splicing

Splicing is necessary when both the width and the drop of the glass measure greater than 1500 mm, thereby requiring two or more pieces of film.

Under normal circumstances, a splice is vertical and in the middle of the pane. Under some circumstances, horizontal splices or vertical off-set splices can be used.

7.2 Butt splice - for safety and security films over 50 microns

Apply one piece of film (in accordance with Section 6) to one side of the glass up to the trimming stage. The other side of the glass may be used to remove the liner; but ensure re-cleaning is carried out prior to the application of the second piece of film.

Apply the second piece of film to the glass leaving a 25 mm overlay. Slowly slide the film until the two edges butt together.

Both pieces of film shall be applied so that the shading is matched.

If the window bows or the machine edge is not straight, then a cut splice will be required.

7.3 Cut splice

Overlap the film by approximately 25 mm. Using a sharp blade, cut through both pieces of film. Ensure that the splice is parallel to the frame.

Squeegee the film parallel to the splice, and finish the window in the normal way.

7.4 Overlapped joint

This method shall not be used when applying safety and security films.

Overlap the film by approximately 25 mm, positioning the film so that there is an overlap not greater than 6 mm.

8. Quality inspection

A visual inspection of the installation shall be carried out by the applicator in accordance with the GGF Data Sheet 5.18.1 "Visual Quality Standard for Applied Window Film".

Any non-conformities identified, either during installation or on final quality inspection, shall be corrected.

9. Marking of safety films to BS 6206

All safety film installations shall be marked as follows:

- an identifiable name, or trademark, or other mark capable of identification through a suitable source*;
- the type of material, eg. "F" for film applied glass;
- the number of the British Standard, BS 6206.
- the classification relating to the certified impact test behaviour:
*eg. through the Glass and Glazing Federation.

This mark shall be permanent, and applied during installation in a position so that it will remain completely visible and readable after installation.

For asymmetric materials, the classification shall be based on the worst performance of the two sides, and be marked accordingly. However, in the special case where an asymmetric material is classified Ao, Bo or Co, then the marking must be readable from the side which, when impacted, resulted in that classification.

For film applied to glass, the marking shall be applied before or during the application process. Where the film is to be applied to an opaque material, e.g. as the backing to a mirror, the marking may not be readily visible after installation. In such cases arrangements shall be made to enable the marking to be accessible for inspection if required.

10. Housekeeping

The applicator shall clear all the waste film and excess water from the installation and cutting areas, and reinstate the area to the condition in which it was found originally.

11. External films

Where external films have been specified and where circumstances dictate, eg. climatic conditions, glazing angle, the installer shall check the manufacturer's installation recommendations in relation to the use of external sealants.