GENERAL

Non-insulated exterior doors and windows with single glass panes offer very little resistance to heat flow. The loss of heat, the amount of cold air leakage into the house, and moisture condensation on glass will be greatly reduced by installing storm windows and doors. Plastic covers, even though considered temporary and short-lived, will provide the same effective insulation.

If funds are limited, storm doors and windows or plastic films may at first be placed on the side of the house that faces the prevailing winter winds.

FACTORY-BUILT STORM DOORS AND WINDOWS

Most units are prefabricated out of aluminum and sold by dealers, completely assembled and ready for installation. These units are usually displayed in stores where they may be seen before they are purchased. Wood storm doors are available.

Dealers vary in the services they provide for the customer. Some dealers, in order to guarantee satisfaction, prefer to take all dimensions, furnish standard or custom-built units, and complete their installation. Other dealers will sell units to home builders or home owners, letting them be responsible for taking their own dimensions and making their own installation. In the latter case the buyer should get instructions for installation from the dealer and check all units to see that all parts are included and free of damage before he leaves the store.

CONSTRUCTION FEATURES OF STORM DOOR AND WINDOW UNITS

Several factors, including initial cost, influence the selection of storm doors and windows for the house. In making your choice, consider the following:

1. Strength or rigidity of the main frames and frames for the glass or screen inserts. While thickness of the metal, braces, and width of frames are important, the engineering design is worthy of equal consideration.

2. Weathertightness of design and construction to prevent the entrance of water, cold air, dust, and insects. Note: An opening or weep system is provided at the base of all storm windows.

3. Easy removal of glass and screen inserts or sashes from the inside of the house. This makes house cleaning easier without the necessity of ladders outside the house. Most main frames for storm windows provide for self storage of sash inserts.

4. Ease of maintenance. Can the dealer make repairs or can repairs be made easily by yourself where the dealer furnishes parts?

5. All hardware for doors provided; including: hinges, closers, wind chains, locking latches, vinyl base weather stripping and screws. These accessories should be inspected for quality and sturdiness. Storm windows ordinarily require little hardware except screws for installation.

6. Finish of the metal. Natural, dull or satin, or factory-applied colors are usually available.

7. Guarantees should be checked relative to coverage regarding materials and finish, workmanship of assembly, or installation if done by the dealer.
STORM DOORS

Fig. 1: Glass area divided almost evenly. Smaller kickplate.

Fig. 2: Colonial style or crossbuck at bottom. Bottom not removable.

Fig. 3: Larger top glass area and larger kickplate.

Fig. 4: Self-storing inserts. Lower glass panel slides up and down for ventilation.

Shown above are a few of the styles of storm doors available, Figures 1-4. Tempered safety glass or non-breakable rigid plastic should be used in all storm doors to reduce breakage hazards. Most doors have a kickplate at the bottom to prevent damage from continued use. Doors are also prehung or provided with frames for easy installation.

NOTE: All views shown from outside of house. All glass areas to be safety glass or rigid non-breakable plastic.

STORM WINDOWS

Fig. 5: Storm window for double-hung window.

Fig. 6: Triple-track frame (applied to window stop as shown or to outside casing if necessary).

Fig. 7: Double-track frame (applied to outside casing as shown or to window stop if present).

Fig. 8: All inserts should be removable from inside of house for easy cleaning or repair.

Most storm window frames for double-hung windows have either two or three tracks for the movement and placement of two glass inserts and one screen insert. Regardless of the number of tracks, all inserts should be removable from the frames to the inside of the house. See Figure 5.

The triple-track frame, Figure 6, allows for independent movement of all inserts to up or down positions. They may also be removed separately from the frame. The triple track is somewhat more expensive, but the free movement of inserts does provide for easier cleaning and ventilation at either the top or bottom of the window. Frames allowing for tilt-in positions are also available. See Figure 8.
With the double-track frame, Figure 7, the screen insert is placed under and supports an outside glass insert at the top. The other glass insert can be raised or lowered for ventilation. The screen must be removed from the outside track before the upper outside glass insert can be removed from the frame.

Factory built storm windows or panels for casement, sliding, awning and picture windows (Figures 9, 10 and 11) require special designs, depending upon the style of the original window. Most windows of this type can be insulated by removing screen panels, where they exist, and replacing them with glass or plastic panels on the inside of the existing window.

Storm windows are also available for basement casement windows whether they open to the inside or outside of the basement. See Figure 11.

![Fig. 10](image10.png)

Fig. 10: Sliding and picture windows may require special custom-designed storm windows. Large glass areas should be of safety glass or rigid non-breakable plastic.

![Fig. 11](image11.png)

Fig. 11: Basement window insulation is optional. Make sure that enough air is available for fuel burning furnaces and heaters if located in the basement.

**PLASTIC COVERS FOR EXISTING DOORS AND WINDOWS**

**Film Materials:**

Plastic film for covers may be applied to existing doors and windows for insulation. Film is available in rolled sheets or already cut and packaged in kits including the necessary tacking strips, tacks, and instructions for installation.

Films vary in thickness, clearness, and resistance to deterioration by sunlight. Polyethylene film is fairly clear, flexible, and usually lasts one year. Vinyl sheets are quite clear, flexible, and will last from two to three years in direct sunlight. Polyester film is clear, more rigid, and tends to rattle with high winds. It is usually furnished in 7-mil thickness, stays clear from 6 to 7 years or longer, and is the most expensive film. Some films listed above are reinforced with plastic or steel strands for added strength, but their lifetime use is not necessarily increased.

Where the house is not air conditioned, plastic covers can be marked, removed, rolled up, or stacked, if on frames, and stored in a dark place for the summer.

**Installation**

Plastic films may be attached to home-made wood frames or existing screen frames, as in Figures 12 and 13. They may also be placed directly on the door or window frames, screens, sashes, or outside casings. Insulation will be equally effective, whether the film is located on the inside or the outside of the door or window.
Films may be attached to frames with tacks and cardboard paper strips wrapped in plastic, screen or other wood molding strips. Plastic vinyl tapes, masking and cloth tape, and weather stripping tape also may be used. Some of these tapes do not remove clean and may fail if placed on the inside of screen or wood frames due to wind pressure. They hold better when placed on the outside of the frames and casings.

Fig. 12: Plastic film on wood frame or existing outside screens—outside of house. Well-built wood frames may justify the use of longer lasting clear plastic film or glass.

NOTE: Apply plastic film to screen frames if they exist.

MOISTURE CONDENSATION

After storm doors and windows are installed, condensation on the inside surfaces of glass panes will be reduced considerably. If condensation should occur, there is too much moisture in the house. There may be a slight condensation in very cold weather where drapes or shades are drawn at night. This moisture should disappear soon after the drapes are opened.

Storm windows or plastic covers on windows need not be installed air tight. Factory-built storm windows have bottom vents or drains to allow for some air movement and the drainage of water should excessive condensation occur.

Most installations require no caulking except on rough frames of older houses or at the top of the frame where storm doors and windows must be installed on the outside casings of existing doors or windows exposed to the weather.

Weatherstripping installed on sashes of existing inside windows will usually prevent condensation of moisture on the inside of storm windows. Insulating storm panels or plastic films placed inside the house should have a good seal around the edges to prevent filtration of warm damp air and moisture condensation on the existing outside window glass.

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