



11 Installation

ATTENTION! THE FOLLOWING INSTALLATION INSTRUCTIONS ARE SUPPLEMENTAL TO AND NOT A REPLACEMENT FOR BEST INDUSTRY PRACTICES. WASCO RECOMMENDS FOLLOWING THE GUIDELINES LAID OUT BY JOSEPH LSTIBUREK IN HIS *WATER MANAGEMENT GUIDE* (Building Science Press, 2012) OR THOSE FOUND IN THE INSTALLATIONMASTERS™ *TRAINING MANUAL*¹⁸. FOR CONSTRUCTION TYPES NOT COVERED IN THIS DOCUMENT, WASCO RECOMMENDS CONSULTATION WITH A BUILDING SCIENCE PROFESSIONAL. WASCO IS NOT LIABLE FOR DAMAGES DUE TO IMPROPER INSTALLATION.

11.1 General

Whether the 4500 series windows are being installed for renovation or new construction, certain principles apply. The window must be installed plumb, level and square. The window must be properly shimmed and anchored to the rough opening. Steps must be taken to prevent and control water infiltration, and the window should be sealed against air infiltration.

ATTENTION! IN NO CASE SHOULD A BRICKMOLD OR NAILING FIN SUBSTITUTE FOR PROPER SHIMMING AND ANCHORING. THE WEIGHT OF THE WINDOWS IS TOO GREAT FOR THIS PRACTICE AND LONG TERM PROBLEMS WILL DEVELOP WITHOUT PROPER FASTENING TO THE ROUGH OPENING.

HINT: REMOVE ALL OPERATING SASHES BEFORE INSTALLATION IS ATTEMPTED. THE WEIGHT OF THE SASH IS TOO GREAT TO SQUARE THE WINDOW WITH THE SASH OPEN. IN MOST CASES, THE SASH CAN BE TAKEN OUT BY REMOVING A SINGLE PIN. THIS SMALL STEP WILL GREATLY REDUCE THE OVERALL TIME AN INSTALLATION TAKES.

11.1.1 Plumb, level and square

The window must be installed plumb to prevent the sash from swinging with gravity when open. The window must be installed level for proper water performance. Finally, the window must be installed square. If the window is out of square, the multiple lock points will not work properly.

11.1.2 Properly shimmed and supported

The window must be shimmed at the sill to ensure that it is level. Additionally, shims are necessary at certain locations to ensure the transfer of loads from the window frame to the structure.

Shims may be either fenestration-specific “horseshoe” shims (Figure 17), or cedar wedges. If wedges are used, two must be used together to prevent the frame from twisting.

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Figure 17: "Horseshoe" installation shims, also known as frame packers¹⁹

Figure 18 shows the location of shims for various window and door types available in the 4500 series. They are generally placed approximately 6" from any corner where load transfer takes place, and under any jamb or mullion. On operating windows, there will normally be an installation hole in this area. When this is the case, it is usually easier to first start the installation screw, and then slip the required shims in above the screw, in between the window frame and the rough opening.

¹⁹ Picture courtesy of Glazpart Inc., 145 North Yeager Court, Pelham, Alabama 35124 USA, Tel: (205) 621 7845, glazpart@aol.com. Quality shims are available directly from this company.

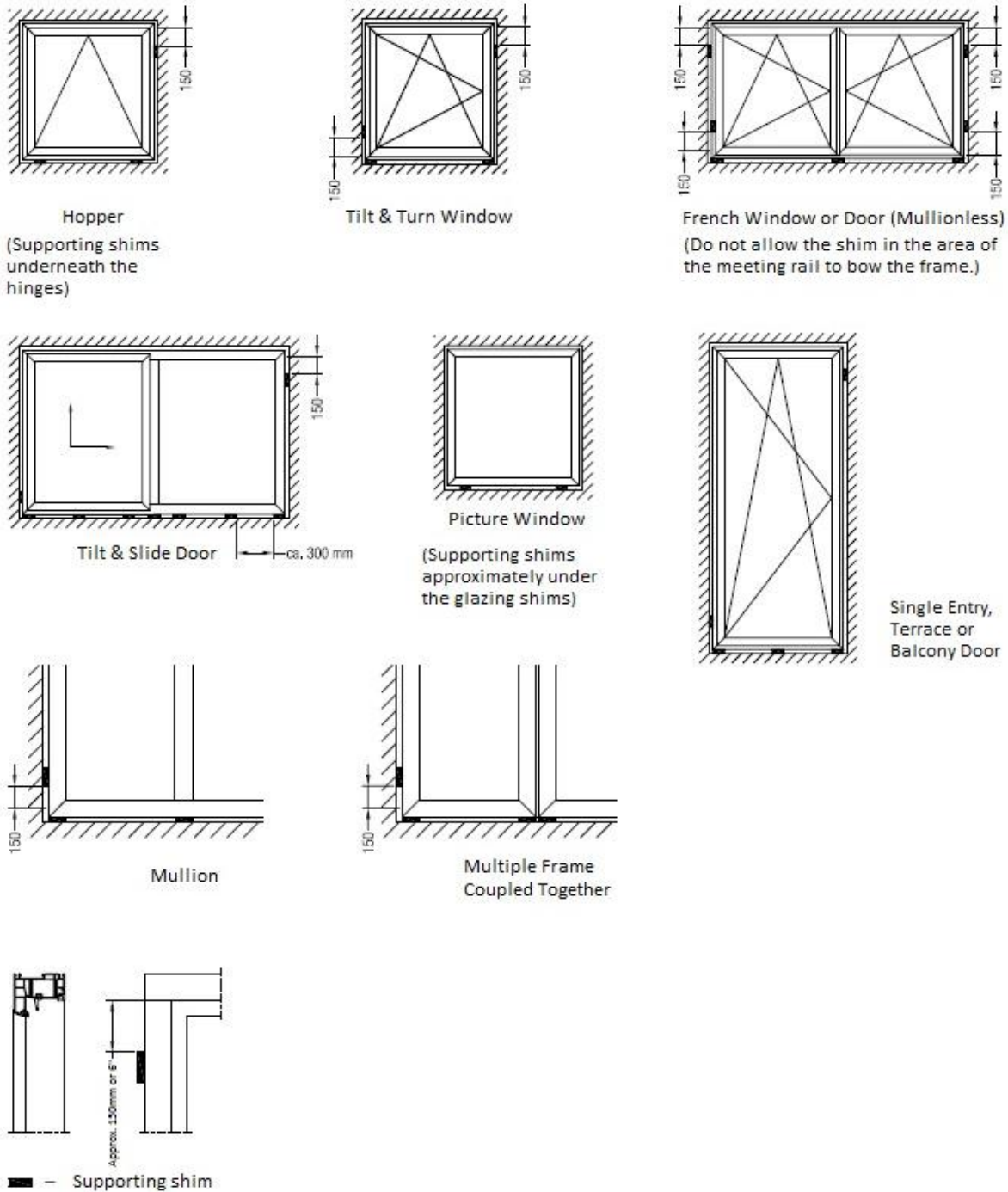


Figure 18: Location of shims for various window types

11.1.3 Anchoring

Operating windows will have pre-drilled installation holes on the jambs and header. In each of these holes, a screw is used to anchor the window frame to the building's structure. Once set, the hole can be

covered with the supplied cap. WASCO recommends #12 construction screws from SPAX or GRK fasteners.



Figure 19: Installation hole (left), and with cover (right)

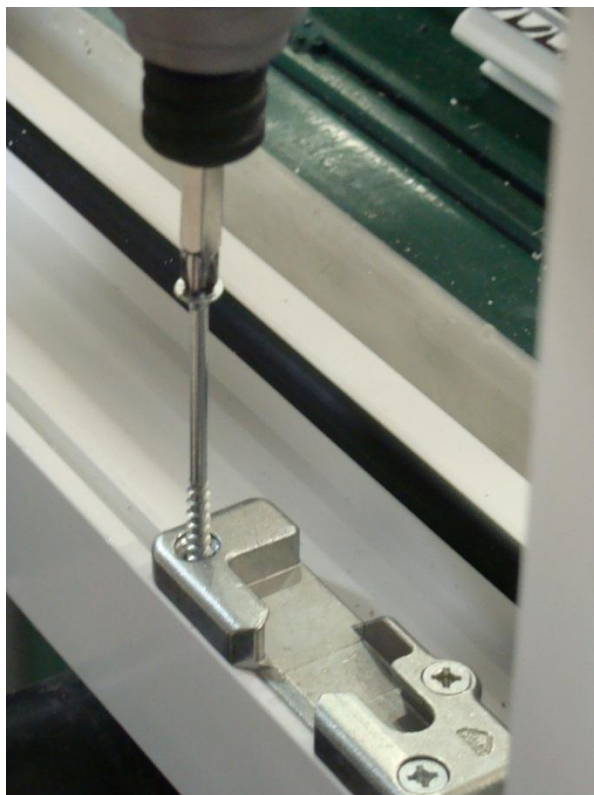


Figure 20: Replacing a keeper screw to anchor sill. Do not do this to screws that do not go through the hardware groove on the innermost side of the frame.

The sill should also be secured against movement. One method of doing this is to use installation straps (Figure 21) spaced out so the maximum distance between the straps is 28". Alternatively, if the distance from the sill to the rough opening is not too great, one of the innermost-screws may be removed from all of the lock strikes along the sill, and replaced with a #8 x 3" screw. WASCO recommends SPAX

Figure 21: Installation strap





construction screws here (Figure 20).

Non-operating windows require the use of installation straps. These should be placed about 6" from the corners of the visible glass and along all four sides so that the maximum distance between straps is 28 inches.

11.1.4 Water control

Windows need to be installed with precautions to (a) prevent water from infiltrating around the window perimeter and (b) allow any water that does infiltrate to escape.

11.1.5 Air sealing

Air sealing may be accomplished through either the use of low-expansion foam specifically designed for windows and doors, or by caulking the inside of the window to the rough opening. Backer rod may be necessary if caulking.

When caulk will be used at the sealant, fiberglass bat should be used to insulate around the perimeter of the window before caulking.

CAUTION! IMPROPER SELECTION OF FOAM MAY DAMAGE THE WINDOWS.

HINT: FIBERGLASS BAT BY ITSELF WILL NOT PREVENT AIR INFILTRATION.

11.2 New construction

In all cases, the window or door should be installed with a sill pan to ensure any water which infiltrates the flashing can escape.

For wood-frame construction, WASCO recommends either a brickmold or a nailing flange. The window should be flashed in accordance with the InstallationMasters™ manual.



11.3 Renovation

In most cases, when the 4500 series is used for renovation, the window should be installed as a new construction window; i.e., the entire old window, including extension jambs, should be removed. In some limited cases, the 4500 series may be used as a replacement window.

In no cases should the window be installed into extension jambs.

11.3.1 Complete tear-out of old window

Before installing the 4500 series window or door, a sill pan should be installed. When installing the new window, it is important that the integrity of the building's water control layer be maintained.

11.3.2 Pocket replacement

If the existing windows are wood double hung windows, and the original frames are in good shape, the 4500 series may be used as a pocket replacement window. Almost all pre-World War II homes, and most homes through 1960 will have substantial enough frames, as long as there is no rot. If weight pockets are present, the area around any installation screws should be reinforced sufficiently to carry the loads when the window is in the tilt position.