INTRODUCTION

The Kolbe & Kolbe Installation Clip is an alternative window/door installation anchor system that allows installers to avoid other anchors through the brickmould and/or frame. But the installer may still choose to use those other anchors in addition to the clips. The clips are designed to take advantage of the strength of two screws into any window/door frame, yet have the advantage of not protruding until the installer swings them into position.

It is the installer's responsibility to know the project site's required wind pressure psf. This information may be obtained from the building designer, code official, or directly from the building code.

INSTALLATION CLIP AVAILABILITY

Boxes of clips are available from Kolbe. Each box contains 100 clips. Be sure to specify either **short** 6-15/16" or **long** 10-1/16" clip length. (The fasteners are supplied by the installer)

NOTE

Some codes require the use of preservative-treated lumber to line rough opening. Corrosion-resistant materials, such as stainless steel or hot-dip-galvanized steel, must be used for fasteners and anchors having direct contact with preservative-treated lumber.

CALCULATING REQUIRED NUMBER OF CLIPS

The factory attached clip schedules are based upon 20 psf wind pressure. This can be a concern when a product has a rating greater than 20 psf and the project site's required wind pressure is greater than 20 psf. The installer needs to be able to determine if the furnished number of clips is sufficient or if additional clips are needed.

The installer may wish to attach clips in the field onto a bare window. Here too, the installer needs to be able to determine the required number of clips.

How to calculate required number of clips

1. Most units are rectangles. As an example consider an individual casement unit with the frame size of 36" W x 72" H. Assume the example project site requires 40 psf wind pressure.

W = 36"
H = 72" (In this example **H** is the long side of the frame rectangle)
P = Required wind pressure at the project site in psf.

2. Calculate the required number of clips along each long side of the frame.

$$\text{No. of clips} = \frac{P \times W \times H}{2 \times 144 \times 140\ \#/\text{clip}} = \frac{40\text{psf} \times 36" \times 72"}{288 \times 140} = 2.57 \text{ clips}$$

(140# = the load capacity for clips, **refer to Load Capacity & Fasteners Used section**)

3. Round up to the next higher number, thus use 3 clips equally spaced along each long side.

4. Calculate the spacing between clips along each long side. Select a distance from corner of 8" to 24" and do not let clip spacing exceed 24" on center. On the Kolbe website www.kolbe-kolbe.com is an Installation Anchor Calculator that quickly calculates the required number of clips.

$$\text{Spacing} = \frac{[\text{Long Side"} - 2(\text{corner dist.})]}{[\text{Num. of clips} - 1]} = \frac{72" - 2(12)}{[3-1]} = 24"$$

5. Attach clips to short sides (head and sill) at about the same spacing. In this example 2 clips on the head and 2 clips on the sill. If in doubt reduce the number of clips so that they are not closer than 8" from corner. This example requires 3+3+1+1 = 8 clips total.

6. For Radius units, substitute a rectangle of the same overall width and height. Then attach clips at the calculated on center spacing to the curved and straight sides.

7. For combination assemblies of several individual units, calculate clip spacing for each individual unit and attach clips to the available outside perimeter sides. The interior frame members that span between adjacent units are mulls. At the end of mulls, additional anchorage is often required, check with the project designer, or Kolbe supplier and Kolbe mulling information sent with units.

8. Operating double hung units are often tested and rated without clips along the sill. Large fixed units with Double Hung sloping sills usually require gluing wood wedges to the underside of sill and attaching clips with longer frame screws. See Fig. 1.

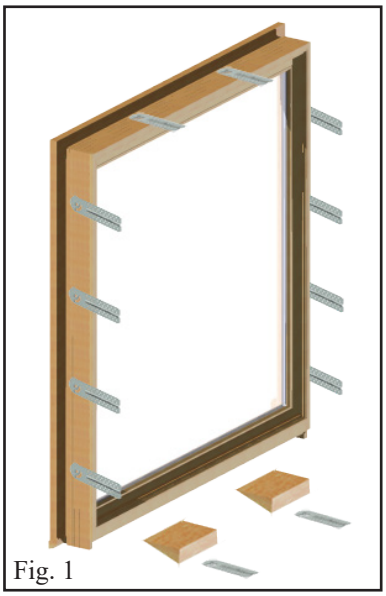


Fig. 1

The wedge need not be a long continuous item. It is probably better to be short (about 3") individual pieces, one associated with each clip. Glue with carpenters glue, staple in place and attach clip using longer screws.

LOAD CAPACITY & FASTENERS USED W/ CLIPS

Each clip is rated for resisting 140 pounds of wind induced load, if attached with **two** # 8 x 3/4" FH SMS screws into the window frame, and **two** 8d common nails 0.131 diameter (or one #8 x 1-3/4" sheet metal screw) at hammer-bend at 20° angle into the wood buck. See fig. 2 & 3. Each clip is rated for resisting 140 # of wind induced load, if attached with **two** #8 x 1-1/14" SMS screw into face of wood buck, without a hammer-bend. See fig. 4.

Each clip is rated for resisting only 70 # of wind induced load, when attached with only **one** # 8 x 3/4" FH SMS screw into the window frame, and/or **one** 8d common nail 0.131 diameter at hammer-bend at 20° angle int wood buck. Similar to fig. 2, 3 or 4.

TIPS

1. Lead holes are usually not required in pine when using sharp pointed, self starting, sheet metal screws. In hardwood or for splitting wood problems try drilling a 3/32" diameter lead holes.

2. The factory installed screws into the window or door frame usually do not need to be re-tightened if the clips are swung out just once. Repeated swinging will sometimes loosen frame screws and require re-tightening. Be careful not to over-tighten, this will strip the screws in the wood.

ATTACHING CLIPS

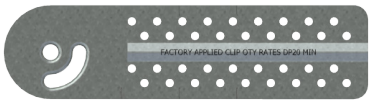
1. Obtain clips & fasteners, and calculate required number of clips.

2. Attach the clips to window/door frame with #8 x 3/4" or longer FH SMS screws as shown in Fig. 1, page 1. The clips can be parallel or perpendicular to window plane. **Be sure the clips are at least 1/8" away from the back of the nail fins to allow for the bead of sealant required by installation instruction for the unit. There are inch marks along clip edges to aid locating the clips and on most products there is a locater groove to help properly locate the clips.**

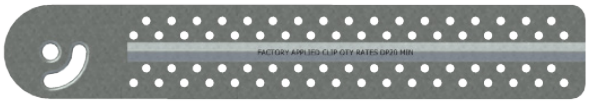
3. Swing the clips out then install the unit into the rough opening, with proper sealing, squaring, etc. per installation instructions.

4. Hammer-bend the clips around the buck as shown in Fig. 2 & 3 or do a face mount as shown in Fig. 4.
   If using the hammer-bend application insert a temporary shim between the clip and window frame while hammering to maintain straightness of the length of clip between bend at window frame fasteners and the buck hammer-bend fastener(s).

5. Install fasteners (one # 8 x 1-3/4" SMS or two 8d common nails) at 20° angle through pre-punched holes at hammer-bend within 1/8" of buck corner or two #8 1-1/4" SMS for face mounted clips.



6-15/16"
Clip



10-1/16"
Clip

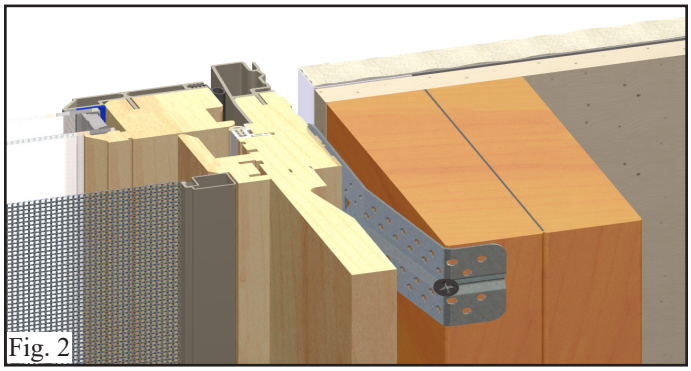


Fig. 2

Hammer-bend Mounted Clip
w/ #8 x 1-3/4" SMS Screw

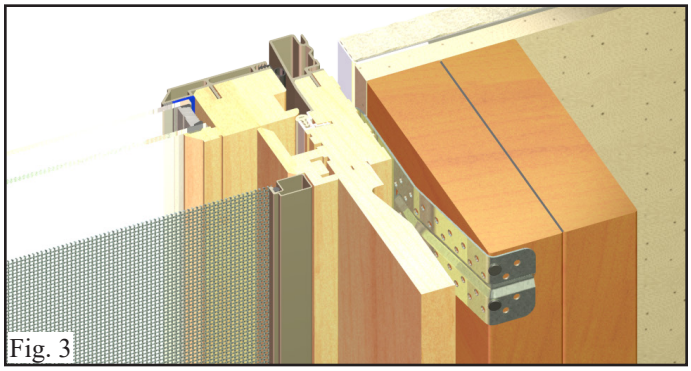


Fig. 3

Hammer-bend Mounted Clip
w/ 2 8d Common Nails

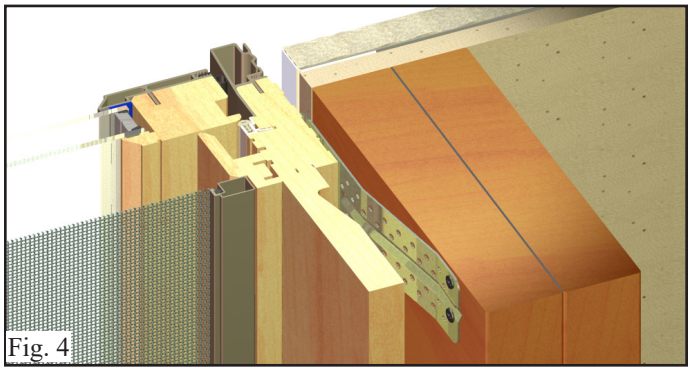


Fig. 4

Face Mounted Clip w/ two
#8 x 1-1/4" SMS Screws