

BAY & BOW FRAME SPECIFICATIONS

The Standard Vinyl Capped Frame in widths up to 121 1/2" consists of a 1" Veneer Core Select White Birch plywood head and seat board.

The Standard Wood Frame (Uncapped) in widths up to 121 1/2" consists of a 3/4" Veneer Core Select White Birch plywood head and seatboard. (Unless agreed upon otherwise)

The head and seat of frames over 121 5/8" and up to 145 1/2" are made with a 1" Veneer or Lumber Core Select White Maple plywood. (This is due to the availability of certain veneers over 10' in length.) The interior wood trim package is supplied in solid white maple. The vinyl interior package would be matching vinyl with a 5/16" solid maple jamb cover, cut to the required width. Style codes do not change for ordering purposes.

Oak Frames are available with all of the aforementioned specifications up to 145 1/2" in width. The interior trim package would consist of solid oak. The vinyl interior trim package would be matching vinyl with a 5/16" solid jamb cover cut to the required width.

The seatboard is attached to the headboard by 3/4" x 4 3/8" or 3/4" x 3 1/2" Western Idaho Pine. [6 pieces for insert struts for a bay and up to 12 pieces for a 6-bow] The 4 3/8" struts are used for frames with a wood interior trim package and 3 1/2" struts are used for the vinyl interior trim package. This type of wood construction allows for inserts (windows) to be installed similar to a replacement installation. It also affords the unit much more strength as compared to frames where the windows are attached directly to the head and seat. Through each mullion assembly is a continuous 1/4" threaded rod from the head to the seat. This helps reduce sag and frame failure due to the weight of large inserts. The jambs of the frame consist of 2 pieces of the same Sterling Pine cut to the standard required width or as ordered.

On standard wood frames (Uncapped) the seat board is attached to the headboard by 3/4" x 4 3/4" Western Idaho Pine. If the unit is to have sash inserts only, then 3/4" x 3" struts are used. And if the unit is to have a window and sash combination, the 3/4" x 4 3/4" struts containing the sashes will have an extra stop added to accommodate the sash inserts.

The Standard Wood Interior Trim which includes mullion covers, end fillers, and end jamb covers are made of clear knot free pine. The end filler and end jamb cover are shipped loosely nailed to be removed and re-installed after the bay or bow is installed in the structure. This allows for fastening to the structure through the frame jambs for a sound and sturdy installation. It also allows for covering of the fasteners by the end cover. Included in the trim package is a

clear pine colonial (ogee) stop. (Cut about 2" longer than required). This is to be mitered and installed around the perimeter of the inserts after they are installed in the frame.

The Standard Vinyl Interior Trim Package includes mullion covers, end fillers and 2 pieces of clear pine. The pine is used to dress finish the end jamb of the frame after it is installed in the structure. All vertical parts are cut to size required and are made to snap fit to the existing part on the wood strut. Also included, as a horizontal trim, is a 3/8" x 13/16" friction fit angle stop at the head and seat board. This covers existing gaps and eliminates interior caulking.

The Vinyl Exterior Cap is specifically engineered to accommodate the bay and bow frame. The vinyl extrusions will conform to any angle up to 55 degrees. **This allows for frames to be made where in other cases only specific angles and projections are possible.** A tapered sill with draining capacities designed to eliminate moisture damage to the seat board is a unique feature of the unit. Overlap joints are used where feasible and a head cap is applied to cover all joints at the top of the frame. All end joints are fastened or covered in such a way as to insure a clean finished appearance. The points of contact to the inserts are designed with a caulking groove at the head, jambs, and sill, to insure a weather tight seal. (See insert installation instructions.)

Fiberglass insulation is packed in each mullion cavity on vinyl capped frames before it is capped. (See insert installations)

All fasteners are either coated or galvanized to insure long life and a strong assembly.

Interstate implies that all frames be roofed or the headboard covered and insulated in such a way as to insure weather tightness. The seat board as well must be insulated and covered with a protective type of finished wood or other type of pre-finished material. When the frame projection becomes excessive (the projection less the wall thickness is greater than eight (8) inches), turnbuckle kits and/or knee brackets to support the frame to the structure are required. Failure to properly roof, cover, insulate, or support as necessary shall relieve Interstate, Inc. of any liability concerning frame failure.

NOTE: Roof kits, insulated seat boards, turnbuckle support kits, and knee brackets are available.

It is highly recommended that roof kits and insulated seat boards be ordered at the same time as the bay and bow frames for which they are intended to insure proper fit. A significant up-charge applies when these items are ordered separately. (See option pricing).

OPTIONAL – ROOF KIT SPECIFICATIONS

Roofs are hip style, custom sized to each unit.

Standard pitch is “7/12” with a 3” overhang. Custom pitch is available at a 20% up-charge.

Base, back wall and sheathing are constructed with 7/16” OSB (Oriented Strand Board) with 1 x 2 perimeter blocking and 2 x 2 rafters. 1/4” OSB is used at front to lower overhang below vinyl drip cap on frame in order to prevent water from draining back on to headboard. Shingles, metal capping, and insulation are not supplied.

NOTE: It is highly recommended that roof kits be ordered at the same time as the bay and bow frames for which they are intended to insure proper fit. A 30% up-charge applies when ordered separately.

The type of opening (siding or masonry) must also be supplied for all roof orders as well as the following dimensions.

For standard siding exterior: supply **DIM 1** (distance from interior wall to outside of exterior sheathing). Refer to Fig. 2 below.

For masonry (brick) exterior: supply **DIM A** (distance from interior wall to outside of brick mold) and **DIM B** (distance from interior wall to outside of brick). Refer to Fig. 3 below.

CAUTION: Prior to ordering custom roofs, please be sure the minimum clearance exists above the bay or bow unit. Refer to the minimum clearance chart below.

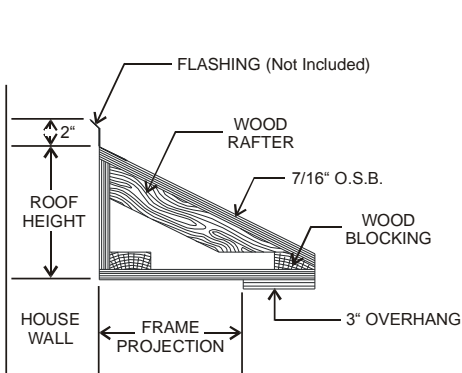


Fig. 1

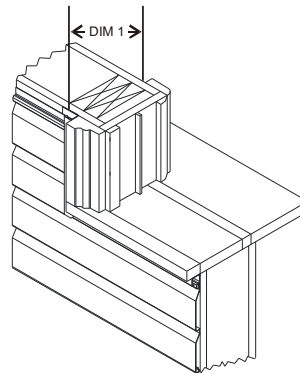


Fig. 2

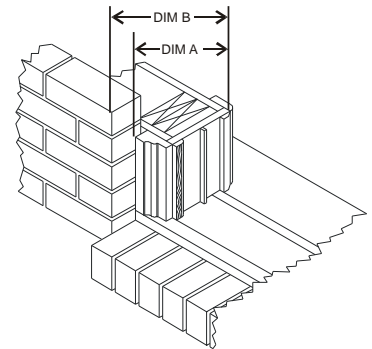


Fig. 3

MINIMUM CLEARANCE CHART FOR OPTIONAL ROOF KITS

NOTE: Clearance includes allowance for 2” flashing at wall. Formula for calculating exterior projection: Overall Projection – Wall Thickness = Exterior Projection. (Round up to nearest inch) IE: 16” Projection – 5 1/2” Wall = 11 1/2” Exterior Projection (Round up to 12”)

A 12” exterior projection requires 12 1/4” above the frame – Refer to the chart below.

Exterior Projection	Min. Height Required Above Frame
6”	8 3/4”
7”	9 3/8”
8”	10”
9”	10 1/2”
10”	11 1/8”
11”	11 5/8”
12”	12 1/4”
13”	12 7/8”
14”	13 3/8”
15”	14”
16”	14 5/8”
17”	15 1/8”

Exterior Projection	Min. Height Required Above Frame
18”	15 3/4”
19”	16 3/8”
20”	16 7/8”
21”	17 1/2”
22”	18 1/8”
23”	18 3/4”
24”	19 1/4”
25”	19 7/8”
26”	20 1/2”
27”	21”
28”	21 5/8”

OPTIONAL – KNEE BRACKET SPECIFICATIONS

Knee Brackets are cut from edge-glued white pine for extra strength.

Nailers are glued and fastened with 2" galvanized screws.

Five sizes available: Small [7 3/8" x 10 3/4"], Medium [9 3/8" x 13 1/2"], Large [11 1/8" x 14 3/4"], X-Large [15" x 17"], and 90 Degree [19" x 21"] (for Box-Bays).

Standard formula to figure correct size brackets needed: Take frame projection, less wall

thickness, less 2". IE: A frame with a 16" projection and a 5 1/2" wall uses a bracket with a maximum depth of 8 1/2" or a small knee bracket. (16" – 5 1/2" = 8 1/2").

Quantity and part number must be specified when ordering. (See page 15 for part numbers).

All brackets are sanded and primed white – ready for finish paint. (Two coats of exterior grade paint recommended).

OPTIONAL – LIGHT KIT SPECIFICATIONS

(Light Kits are Installed)

Light kit Includes (1) 12-volt driver, (2), (3), (4), or (5) 12-volt LED lights, available in Black, Brass, Nickel, or White finish. (Finish must be specified.)

Lights are UL® approved low-profile recessed into headboard with no protrusion above headboard, 12-volt (low voltage) system with driver (transformer) located in end jamb. *Plug in cord with roll switch out bottom of end jamb lattice filler for convenient no hassle installation. (Specify left or right cord exit as viewed from interior.) LED soft white lamps offer long life and energy efficiency.

Light spacing is maximum 30". Spacing is determined by width of frame less 2" for jamb divided by the number of lights plus one.

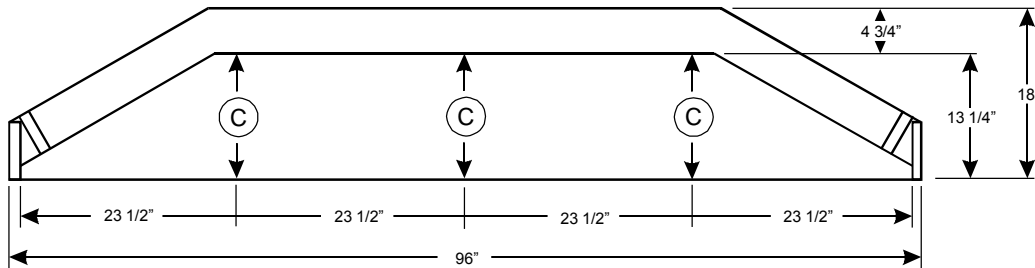
Example: Using a 96" Wide Frame (See light placement drawings below). $96" - 2" (\text{jamb}) = 94" \div 4 (3 \text{ Lights} + 1) = 23 \frac{1}{2}"$ light spacing center to center.

Depth of lights is centered between interior trim and interior wall of structure.

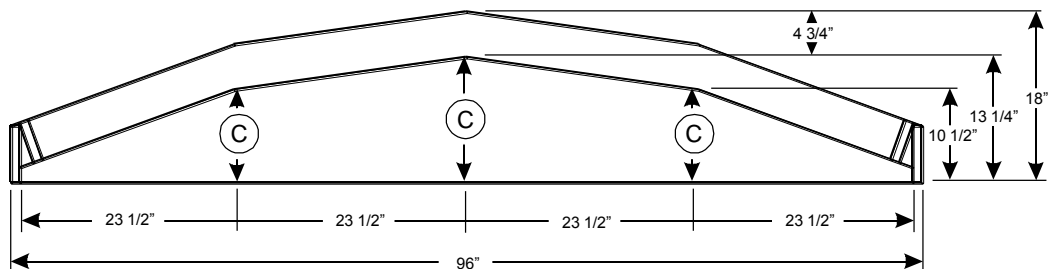
*Hard-wiring option is available. Be sure to specify when ordering. Notch in end filler will be eliminated. 7 feet of lead wire will be rolled into end jamb cavity.

NOTE: Check local codes. A licensed electrician may be required.

TYPICAL LIGHT PLACEMENT FOR BAY FRAMES



TYPICAL LIGHT PLACEMENT FOR 4-BOW FRAMES



OPTIONAL - INSULATED SEAT BOARD SPECIFICATIONS

Frame Widths up to 120". *

3/8" Exterior Fir Plywood with 10 mill vinyl laminate applied.

1" Foam Insulation.

Vinyl Extruded Cap for coverage of edge to existing wall.

Angles of Seat Board cut to pre-fit frame with "L" shaped vinyl attached. Depth of seat will be cut to exact jamb width.

Nails for assembly supplied.

* Frames over 120" with Insulated Seat Board will be supplied with 2 pieces of vinyl laminate with vinyl "H" channel as a center divider. This is necessary due to the availability of vinyl-clad plywood.

NOTE: It is highly recommended that insulated seat boards be ordered at the same time as the bay and bow frames for which they are intended to insure proper fit. A 20% up-charge applies when ordered separately.

INSTRUCTIONS FOR INSTALLING WINDOW UNITS INTO FRAMES WITH VINYL INTERIORS

- (1) Be sure that units will fit into frame properly, check both height and width.
- (2) Caulk frame with a high grade of caulking at exterior vinyl frame cap. (Small groove is recessed both in side rails and head for this purpose.) This is done before installing the window unit permanently. A large bead of caulk must be laid at the sill groove toward the exterior of the frame and at the top of the slope (interior of frame) at a location to insure a seal of unit and frame to eliminate water infiltration. Do not caulk area that allows moisture drainage. (See sill detail, p. 22)
- (3) After caulking, install unit as you would a regular replacement installation. Shim square and secure with screws at jamb members. Be sure not to over draw screws which could cause a bow in frame or window jambs.
- (4) Pack sides, top, and sill with insulation if there is sufficient space for it. Be sure not to over-pack which may cause bowing or restriction of sash travel.
- (5) This step is very important. Go back and check to see if steps 1 - 2 - 3 - 4 were all done. This is necessary because inside trims are somewhat difficult to remove once they have been installed.
- (6) Take the interior mullion cover and fit into receptor (mullion snap) fastened to wood jambs. Tap this firmly into place with a hammer using a block of wood at a point both right and left of center groove approximately 1/2" from center. Do this from top to bottom being sure that both snap locks are engaged. Do not directly use hammer face or other hard object which could damage the vinyl.
- (7) Remove 5/16" finish strip from Bay or Bow jamb and install the end fillers. (Do not remove back-up strip.) Align this to receptor on jamb and tap into place with block of wood as you did with the mull

cover. Again be sure it locks in place. Re-install 5/16" finish strip with small brads or finish nails.

NOTE: If window units are installed at factory, do not attach end filler and finish strip permanently. This will not allow for Bay or Bow to be fastened to structure through the side jambs as necessary. Attach at job sight only.

- (8) After mull & end filler is in place, cut bottom horizontal friction fit angle stop to exact size (Fit between interior mull covers). Slip into place (see sill detail, p. 22) and tap stop with a block of wood and/or a tool until it contacts window unit snugly and remains square. Do not drive past square point. Cut top horizontal friction fit angle stop to exact size. Slip into place at head (into already attached stop clip) and tap into place as at sill. Again do not drive past square. If all parts are cut properly no caulk should be necessary on interior.
- (9) Exterior should now be cleaned and caulked, especially at sill. Cut away original excess caulk first. If sides and top are caulked sufficiently before installation of windows, and unit is not twisted or racked during installation, it may not be necessary to re-caulk jambs and top, although a small bead is highly recommended.

NOTE: It is recommended that the windows be installed last, due to the fact that some caulks tend to separate from vibrations and movement. This may cause the unit to leak in the future. Should the installation take more than one day, install units temporarily overnight and cover. Install after unit is roofed, insulated at seat, and securely fastened to structure.

Should the window units be factory installed, the entire unit should be left standing without movement to allow caulk to dry at least 24 hours before shipment. Past experiences have shown separation of some caulks due to sash movement, especially a slamming or quick closing motion as on a tilt sash or casement unit.

INSTRUCTIONS FOR INSTALLING WINDOW UNITS INTO FRAMES WITH WOOD INTERIORS

- (1) Be sure that units will fit into frame properly, check both height and width.
- (2) Caulk frame with a high grade of caulking at exterior vinyl frame cap. (Small groove is recessed both in side rails and head for this purpose.) This is done before installing the window unit permanently. A large bead of caulk must be laid at the sill groove toward the exterior of the frame and at the top of the slope (interior of frame) at a location to insure a seal of unit and frame to eliminate water infiltration. Do not caulk area that allows moisture drainage. (See sill detail below)
- (3) After caulking, install unit as you would a regular replacement installation. Shim square and secure with screws at jamb members. Be sure not to over draw screws which could cause a bow in frame or window jambs.
- (4) Pack sides, top, and sill with insulation if there is sufficient space for it. Be sure not to over-pack which may cause bowing or restriction of sash travel.
- (5) This step is very important. Go back and check to see if steps 1 - 2 - 3 - 4 were all done. This is necessary because inside trims may be damaged if removal is necessary.
- (6) Attach wood end jamb cover to frame jamb with small finish type nail. (Be careful when nailing since this will be a finished part.) Now attach end jamb filler, by fastening on insert strut and at angled edge as near to end as possible without splitting.

Set nail heads very carefully and fill all holes with comparable filler.

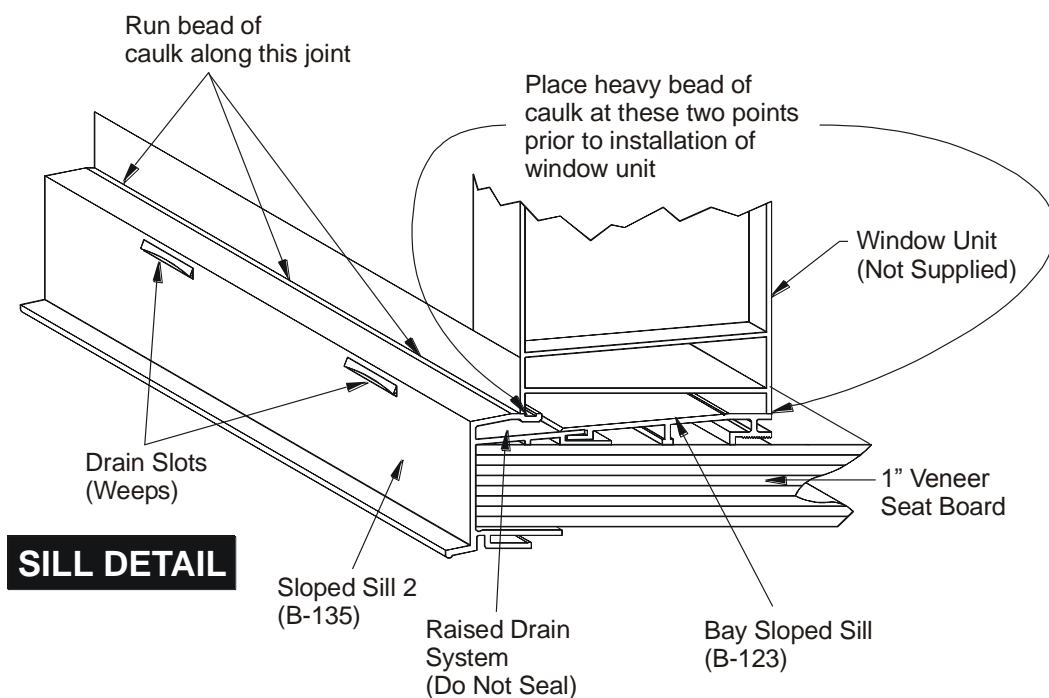
NOTE: If window units are installed at factory, do not attach end filler and jamb cover permanently. This will not allow for Bay or Bow to be fastened to structure through the side jambs as necessary. Attach at job sight only.

(7) Miter cut wood stops supplied to exact sizes and fasten to frame with small finish type nail. Be sure that corners are tight for neat appearance. Set nail heads and fill holes with comparable filler.

(8) Exterior should now be cleaned and caulked, especially at sill. Cut away original excess caulk first. If sides and top are caulked sufficiently before installation of windows, and unit is not twisted or racked during installation, it may not be necessary to re-caulk jambs and top, although a small bead is highly recommended.

NOTE: It is recommended that the windows be installed last, due to the fact that some caulks tend to separate from vibrations and movements. This may cause the unit to leak in the future. Should the installation take more than one day, install units temporarily overnight and cover. Install after unit is roofed, insulated at seat, and securely fastened to structure.

Should the window units be factory installed, the entire unit should be left standing without movement to allow caulk to dry at least 24 hours before shipment. Past experiences have shown separation of some caulks due to sash movement, especially a slamming or quick closing motion as on a tilt sash or casement unit.



OPTIONAL – ROOF KIT INSTALLATION INSTRUCTIONS

CAUTION: Be sure to check that window frame is not sagging prior to roof installation. Level seat board and temporarily support if necessary. Failure to do so may make it impossible to adjust once roof is installed causing misalignment of operating windows.

Remove stretch wrap from unit. Remove screws from angled roof panels and remove panels. This will make unit lighter and allow for attachment to structure wall and head board of bay or bow frame. Bottom panel of roof has been pre-drilled to allow all-thread rods to pass through. Place the roof unit on top of the frame. Roof should fit flat on frame with 1/8" clearance at frame vinyl drip cap to allow for return of soffit metal.

Secure roof to frame with 1 1/4" screws (supplied).

NOTE: Do not use screws longer than 1 1/4" as they may protrude through the head board causing damage to the interior of the bay or bow frame.

If necessary, shim between back of roof and structure wall to maintain proper clearance. Attach roof to structure wall using adequate sized fasteners. Attach turnbuckle system if required.

NOTE: Roof is not designed to be a frame support. A turnbuckle kit or knee brackets must be used for proper support.

Install fiberglass insulation in roof cavity. Re-install angled roof panels and fasten securely in place. Install soffit and fascia metal, drip edge, and shingles per manufacturer's recommendations.

OPTIONAL - KNEE BRACKET INSTALLATION INSTRUCTIONS

Knee brackets may be substituted for turnbuckles, however substantial lateral support must be provided. (IE: Brick wall or wood siding). If exterior wall is vinyl siding, siding must be cut back. If applicable, foam insulation should be removed so knee brackets can be attached directly to wood sheathing. If wood support is not adequate, a double stud should be inserted in wall under sill at each knee bracket location. Attach knee brackets to wall using finish head nails or screws.

Counter sink below surface and fill all holes with glazing putty. Apply two (2) coats of exterior grade paint. (Brackets are primed only).

NOTE: Be sure that fasteners used to attach the brackets to the frame are of the correct length and do not protrude through the frame seat board damaging the interior.

OPTIONAL – TURNBUCKLE KIT INSTALLATION INSTRUCTIONS

Install frame into opening. Level seat board and install shims as required. Plumb jambs and install shims as required. Using 3" drywall screws, fasten frame into place. Install double screws at top and bottom of jambs to eliminate frame from pulling inward caused by tensioning of turnbuckles.

Cut chain into two even pieces. The two outermost all thread steel rods will be extended on frame approximately 2". Install end of chain over these two rods and install one washer over these two rods. Install 1/4" nuts on rods to lock down chain.

Install wall hooks into wall or roof truss. **NOTE:** Wall hooks must be installed into 2x for proper strength. Pre-drill pilot hole with 9/64" drill bit to eliminate splitting of 2x.

Attach eyehooks on turnbuckles to chain on frame. Attach opposite end of eyehooks on turnbuckles to wall hooks that are screwed into 2x.

Level seat board by adjusting turnbuckles.

NOTE: Excessive torque on turnbuckles may cause top of frame to project in past house wall.

OPTIONAL - INSULATED SEAT BOARD INSTALLATION INSTRUCTIONS

SHIPPING NOTE: Frame and insulating unit are shipped seat board up, partially assembled. After removing insulating unit, flip frame over for installation.

- (1) Detach insulating unit from bay or bow by removing Phillips head screws in order to set frame into opening.
- (2) After setting bay or bow unit into opening, slide frame toward outside of wall and slip insulated seat board into place.

NOTE: Insulated seat can only be removed or replaced with bay or bow unit slid to outside of wall. (Approximately 1" or more)

- (3) [If necessary] Should seat be too long, remove vinyl trim and cut long side towards wall. Trim vinyl seat board cap as required (shears). Should seat depth need increased, this may be accomplished by pulling vinyl clad plywood and 1" foam insulation slightly back from vinyl seat board cap. A bead of caulk should be applied where vinyl seat board cap snaps into and butts against structure wall.

NOTE: Do not secure bay or bow unit to structure until seat board has been properly set.

- (4) After unit is securely installed, push seat board cap tightly into place and drive 2" nail (supplied) through vinyl-clad plywood, insulation, and into main seat. Be careful not to strike vinyl as damage may occur. This will hold cap and insulated seat securely in place. Seal and caulk joints as necessary.
- (5) Seal unit for weather tightness by placing a small bead of caulk at point where seat cap contacts sill vinyl, (Fig. 3) and a substantial bead where unit meets wall. An alternate to caulking unit at wall would be attaching an angle or feature strip at this point. Caulking is still recommended under the angle or feature strip.

NOTE: If knee bracing is used, braces should extend as close to front of unit as possible. Be certain that screws or fasteners are long enough to catch main seat of frame, but not too long as to go through completely. Thickness of vinyl clad plywood and insulation is 1 7/16" - main seat thickness is 1" (2 7/16" overall thickness)

