

INSTALLATION GUIDELINES

TYROL SERIES SIDE HINGED SWING DOOR

OVERVIEW

Wall systems designed to manage water or that have been upgraded to manage water are important for a trouble free installation. Site conditions, building designs, building materials and construction methods vary from project to project. Determining the proper installation is the responsibility of you, your architect or construction professional. Installation will require a minimum of two (2) or more people depending on the size/weight of the windows, size of the project and schedule.

I. RECEIVING & HANDLING

INSPECTION:

Customer should conduct a thorough inspection of the window products after receiving them. Windows should be inspected for proper type, operability, shipping damage, and size. All damages or freight claims must be submitted in writing within 5 business days of receipt to: service@thinkalpen.com. Follow these steps when inspecting new window products:

- Thoroughly inspect the windows, note that some products contain items that are not to be removed until after the windows are installed properly.
- Check for proper size and location prior to the start of installation.

STORAGE AND HANDLING:

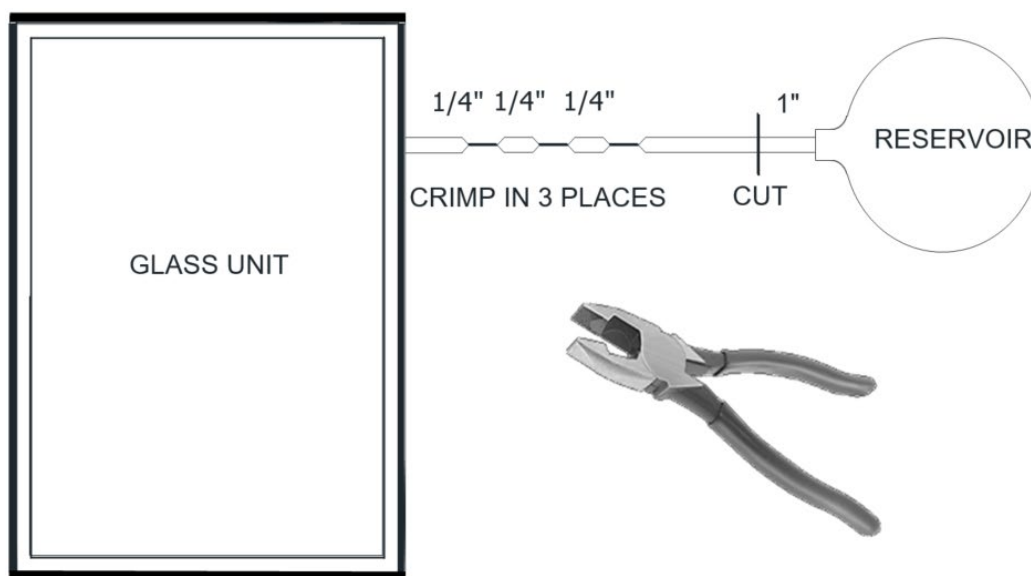
Windows should be properly stored when installation will not take place immediately. The following recommendations will help you store and protect the products until installation can begin:

- Windows shall be transported in an upright position with all manufacturers' packaging in place.
- Do not rack, twist, drag or pull window frames.
- All windows shall be stored in the upright position as close to 90 degrees as possible and placed on their sills.
- If packaging is removed, store with non-abrasive separators between frames.
- Handle units with glass cups as much as possible. Use appropriate manpower when lifting large units.
- Windows shall be stored out of the weather in a clean, dry, low traffic area, away from direct sun light, extreme temperatures and extreme temperature changes. Do not leave wrapped windows exposed to sunlight or heat.

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EQUALIZATION PROCESS AND RESERVOIR REMOVAL INSTRUCTIONS:

1. Once units have arrived at the jobsite, allow them to acclimate to their openings/jobsite conditions for a minimum of 24 hours if possible. Larger units may take up to 72 hours.
2. Once acclimated, the capillary tube requires crimping in three places, and reservoir removal. Crimping should be performed between 12PM and 3 PM, or when the temperature is at the expected seasonal average. Ensure the glass panes are flat before crimping.
3. Crimp (hard enough to collapse or flatten the tube) the capillary tube $\frac{1}{4}$ " from the edge of glass/glazing bead, again at $\frac{1}{4}$ ", and again at another $\frac{1}{4}$ ". Use the flat jaws of a pair of pliers (shown).



4. Cut the tube 1" from the end. Remove the reservoir and then dip the cut end in a sealant that adheres to steel. Let sealant dry.
5. Tuck the capillary tube under/behind the glazing bead using a plastic putty knife, or tape to the edge of the IGU for "Glass Only" products.
6. Please reference "Breather Tube Tucking Instructions" or call your Sales Representative for more information.

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I. SELECT AAMA INSTALLATION METHOD

Each project is different. The most frequently used method on new construction, with weather resistant barrier and fin is the AAMA A1 Method. Other Methods are mentioned in the text that follows, but the primary description in this document is the A1 Method.

AAMA INSTALLATION METHOD SELECTOR	A	A1	B	B1
Weather Barrier Applied (First) Prior to Window		✓		✓
Sill Flashing Applied Prior to Window Installation	✓	✓	✓	✓
Jamb Flashing Applied to Opening (Before) Window			✓	✓
Window Set In Place (With Sealant on Back of Flange)	✓	✓	✓	✓
Jamb Flashing Applied w/ Sealant (After) Window	✓	✓		
Head Flashing Applied After Window Installation	✓	✓	✓	✓
Weather Barrier Applied (After) Window	✓		✓	

A = Flashing applied after the window

B = Flashing applied before the window

1 = WRB applied before window

II. PREPARE ROUGH OPENING

A. GENERAL INFORMATION

1. BUILDING CODES:

The owners, architects, and/or builders are expressly responsible for complying with any and all applicable laws, regulations, and building codes when selecting and installing Alpen products.

2. BUILDING ENVELOPE:

Walls, floors, roofs, fenestrations, and doors fall under the purview of the owner, architect, and builder (or specialized consultant) for design and construction. However, attaching Alpen-brand window/door assemblies to the envelope in a manner that maintains the stability of water/vapor/air barriers is contractually guaranteed by other entities.

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III. PREPARE ROUGH OPENING

A. CHECK ROUGH OPENING DIMENSIONS & CLEARANCES

1. ROUGH OPENING

Rough opening should be minimum 3/8" taller and 3/8" wider than door frame size.

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MINIMUM REQUIRED CLEARANCE (RO)

EACH SIDE:

	SILL	HEAD	JAMB 1	JAMB 2
Finished Concrete	0.375	0.375	0.375	0.375
Flooring, Carpet etc	1	0.375	0.375	0.375

OVERALL:	VERTICAL	HORIZONTAL
Finished Con	0.75	0.75
Flooring, Car	1.375	0.75

FINISH MATERIALS

Do not cover more than 1/4" of door frame on jambs

Allow min. 1/8" clearance between hinges and finish material

Sill: allow 1/8" to 1" clearance depending on height of finish materials

Allow min 1/4" clearance between top of finish material and bottom of door sash

2. CHECK PLUMB, LEVEL, SQUARE

Check that rough opening is plumb, level, square, and in plane. **(This is vital to proper functioning of the unit!)**

The rough openings must be square with level sills and plumb jambs. Check the outside wall-face to confirm that it is straight and plumb.

If you find any rough opening that does not meet the proper conditions, adjust the thickness of the shim blocks until you have achieved square, level, and plumb conditions prior to installing the window or door frame.

If, for any reason, these conditions cannot be met, it is highly advisable that you notify the general contractor or other responsible party and receive written authorization before framing in openings that do not meet the proper standards.

3. ENSURE OPENING IS CLEAN & FREE OF DEBRIS

Verify sill is level and free of debris and that the sill of the rough opening must be solid and level.

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B. ADJUST SILL FOR FINISHED FLOOR MATERIAL CLEARANCE

Ensure sill is raised sufficiently to accept interior floor finish materials, apply sill plate if needed.

C. SEALANT & FLASHING

Alpen recommends following ASTM E 2112-01 and AAMA Installation Masters guidelines for sealing and flashing exterior doors. Create a proper seal between the door frame and the rough opening structure.

1. Install sill pan (if used)
2. Apply sealant to sill (polyurethane sealant recommended)
 - a. With sill pan: Apply continuous bead at interior of sill edge of back dam to ensure secure, tight seal. Use discontinuous bead at exterior of sill for drainage.
 - b. If no sill pan is used: Apply three beads of 3/16" diameter beads of sealant across entire width of subfloor between rough opening framing. Allow some sealant to pool in the corners and carry the bead at least 12" up the side of the framing

IV. SELECT YOUR INSTALLATION TECHNIQUE

These techniques are general guidelines only, and may not be appropriate for all performance requirements. Alpen recommends two installation types:

1. Installation bracket method

Installation bracket installation requires use of both anchor brackets and through-frame fasteners.

- a) Installation clips may be factory applied or installed in the field. If using installation clips, the installation clips are installed by turning the clip catches into the frame. No additional fasteners are required to hold the clip onto the frame.
- b) Clips are to be placed 4" from the corners and 20-24" o.c. thereafter. Clips are to be placed around the entire perimeter of the door unless the door has an aluminum thermally broken sill. No clips required at the aluminum sill.
- c) In addition to anchor clips, through-frame fasteners are required to stabilize the door and secure it to rough opening framing.

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2. Screw through frame method

Through-frame anchoring can be used to fully secure the frame to the opening without the use of anchor brackets. Unit may be ordered with factory-applied nailing fin. Through-frame anchoring is still required if nailing fin is applied.

***Do not fasten fin flush to wall if wall is not plumb. Plumb door, shim behind fin if needed to fill voids, then fasten and flash*

Although anchor brackets are not required with this approach, Alpen recommends applying 2-3 anchor brackets (if nailing fin not applied) to the top and bottom of jambs that can be used to temporarily secure frame to opening while door is checked for plumb, level, square and shims and support blocks are applied.

- a) When using the thru-frame anchoring approach, 3/8" pilot holes should be pre-drilled through frame and steel reinforcement for a tapcon or wood screw to be used to fasten the door frame into the opening.
- b) Holes should be drilled 4" from the corners and 12-14" o.c at frame head and jambs
- c) Doors with the aluminum thermally broken sill do not require fasteners at the sill. Shims are required to be placed at the same locations as the fasteners to prevent bowing of the frame. Additional shims are required at the sill where the aluminum sill is fastened to the vinyl jamb.

V. PREPARE THE FRAME

A. METHOD #1 – ANCHOR BRACKETS

1. Apply Anchor Brackets

Anchor brackets are applied by placing bracket at desired location and tapping with rubber mallet until bracket ‘snaps’ into channel.

2. Locate brackets following Anchor Bracket Layout Diagram (Fig 1).

See Fig. 1

Anchor brackets are located:

- a) Strike-Side Jamb:
 - (1) 4" from sill
 - (2) Centered with opposite top hinge
 - (3) Centered at strike plate
- b) Head: 4" from each corner and at center (midpoint)
- c) Hinge-Side Jamb: 4" from top corner and slightly below base of bottom hinge
- d) Apply additional brackets evenly spaced at ~20-24" on center between straps on head and jambs (Fig. 1 Mark 5)

3. DO NOT APPLY BRACKETS AT SILL

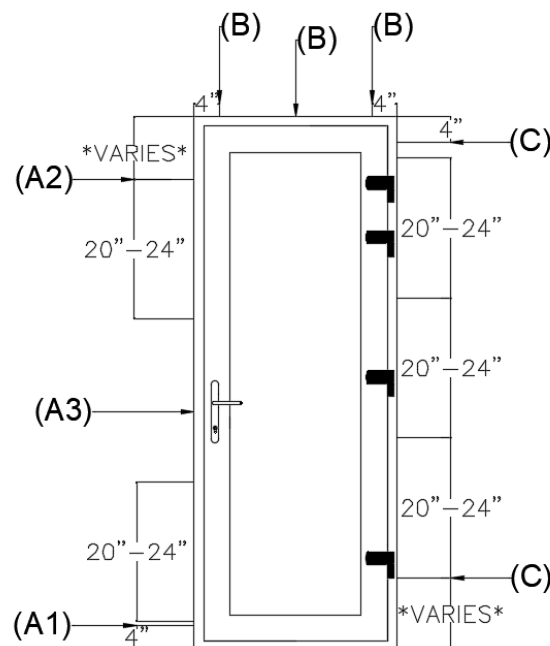


Figure 1

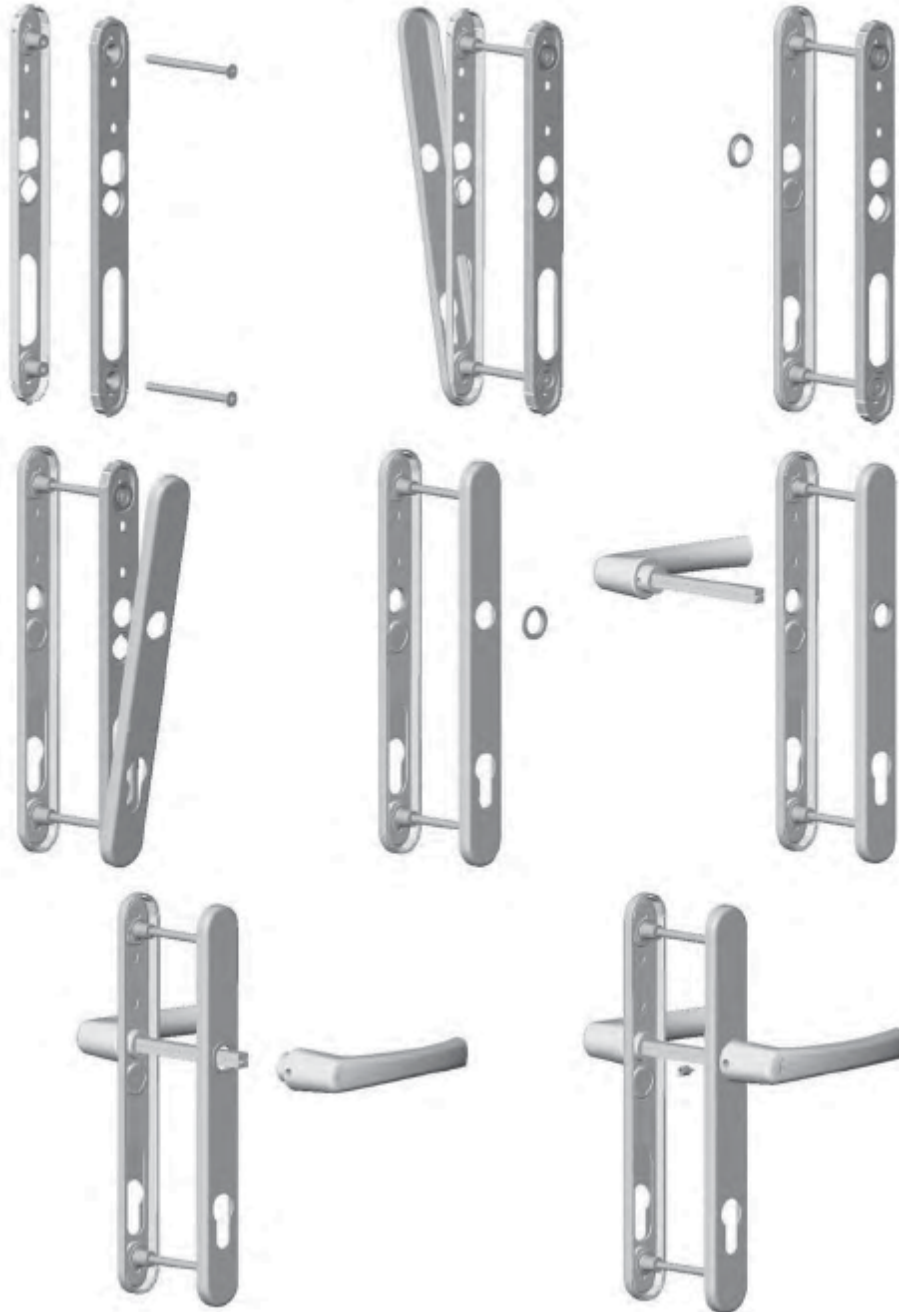
B. METHOD #2 – THROUGH-FRAME ANCHORING

1. If desired, apply anchor brackets at locations A2 and C as shown in Figure 1. These brackets can be used to temporarily secure door to rough opening while shims and support blocks are applied and adjustments are made.



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C. INSTALL HANDLES



*****Do not overtighten screws*****

*****Ensure handle is parallel to ground*****

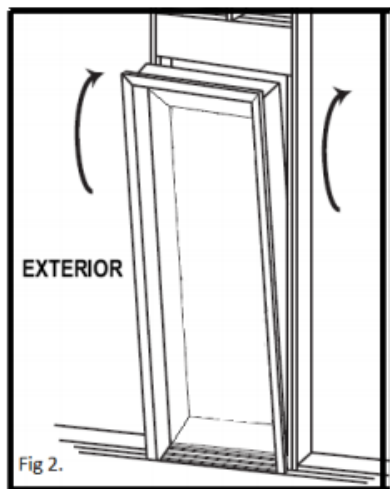
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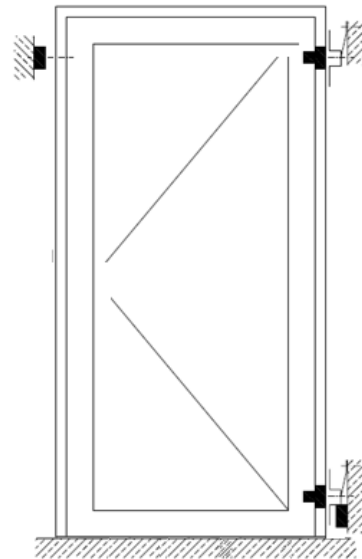
VI. SET DOOR INTO OPENING

A. SET DOOR

1. With the door closed and locked, carefully tilt unit, sill first, into the rough opening. Center the unit in the rough opening. (**Fig. 2.**)
2. Temporarily secure door in opening with anchor brackets at the **top of the jamb on both sides** and **bottom of the jamb on the hinge side**



Temporarily secure door with anchor brackets at these locations before making adjustments and checking for plumb, level square



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B. PLACE SUPPORT BLOCKS

Support blocks transfer dynamic loads such as slamming the door shut. These are rigid, non-compressible shims, and are important for longevity of door operation.

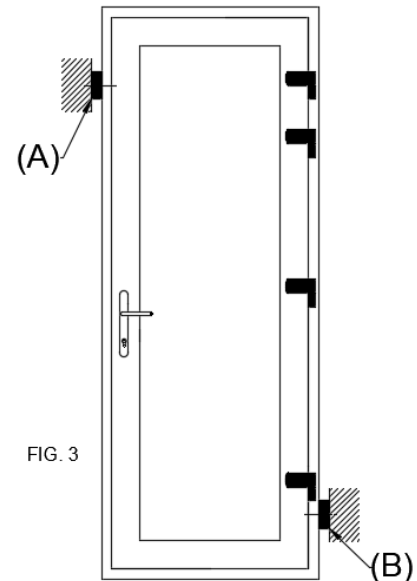
1. Support Blocks should be placed **above** each anchor bracket
2. Position Support Blocks at each location shown on Support Block Layout diagram (Fig 5). **These are critical areas for support.**

See Fig. 3

Support blocks must be located:

- a) Level with the top hinge on the lock side (above anchor bracket)
- b) Under bottom hinge on the hinge side (above anchor bracket).

After support block is placed, fasten adjacent anchor bracket to hold block in place.



C. APPLY SHIMS

1. With door temporarily secured in place with anchor brackets (Step A-2), check for plumb, level and square. Add shims as needed to correct and straighten door in addition to locations noted below.
2. Use 1/8" thick minimum, non-compressible, impervious shims. Thicker shims may be required depending on door rough opening but should not exceed 1/4". Shims should be wide and long enough to fully support the door frame.
3. Shim along the head and side jambs at 4" (102mm) from the corners/ends. Also, shim at the fastener spacing.
 - a) Use two shims per anchor bracket—one on each side (technique #1).
 - b) Use one shim at each screw location if screwing through the frame (technique #2);
 - c) At support block locations, shims should be placed **below** anchor bracket.
4. Aluminum sill requires additional shimming at the sill jamb where the vinyl jamb attaches to the sill.

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D. SECURE DOOR TO FRAMING

Before proceeding, double-check to ensure the sill is straight and level, and plumb the side jambs. Level the exterior head jamb. Adjust the shims if necessary. Then secure door to opening.

METHOD #1: ANCHOR BRACKETS

If using method #2 (through-frame fasteners only), skip this.

1. After door is temporarily secured with anchor brackets and door is plumb, level and square, continue to secure all remaining anchor bracket locations.

FASTENER TYPE:

Substrate	Fastener Size/Type
Concrete	#10 x 3-1/2" Stainless Steel Tapcon
Wood	#10 x 3-1/2" Stainless Steel Flat Head Wood Screw

2. Place shims on above and below each anchor strap to prevent frame bowing.
3. Starting with **an interior upper corner**, bend clips to the rough opening frame and fasten to rough opening (**FIG.5**).
4. Continue around the perimeter, making sure the jambs are straight and the unit is square. Frames should not bow or move while anchor brackets are fastened.
5. Proceed to Step 2 to secure with through-frame anchors.

IMPORTANT: All anchor bracket connections must also be secured with through-frame fasteners as detailed in Method 2.

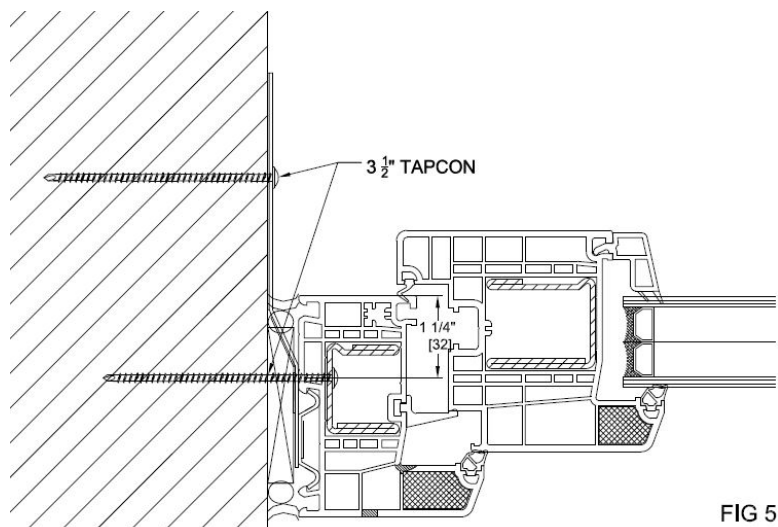


FIG 5

METHOD #2: THROUGH-FRAME FASTENERS

Fasteners are required at all critical attachment points shown in **Figure 6**. Ensure all through frame fasteners are secured through the door frame and through support blocks and/or shims. Frames should not bow or move while fasteners are applied.

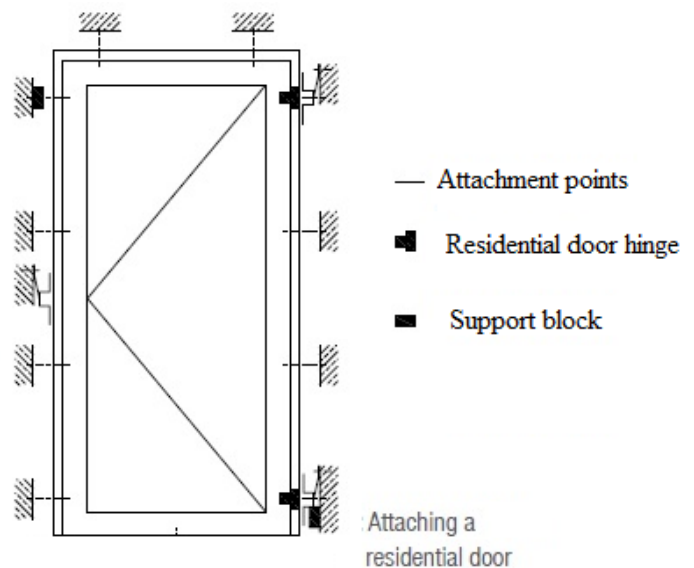
If following Method #2, additional fasteners are required. Fasteners must be located at critical anchoring locations shown in Figure 6 and located at 14-16" on center thereafter.

- a) With door securely in place, and plumb, level, and square, open door sash to expose interior of door frame on all sides.
- b) Starting at the bottom hinge side, drill a 9/64" (4mm) diameter hole at the support block above the anchor bracket.
- c) Using a #10 x 3-1/2" Tapcon (concrete substrate) or Washer Head Wood screw (wood substrate), fasten through the jamb, support block, and into the rough opening framing (**FIG 5**). Repeat at the top strike side support block.
- d) On the lock-side jamb, pre-drill and secure frames with 3-1/2" screws, ensuring that one screw runs through a hole in the strike plate. This hole is pre-drilled from the factory. Use shims to stop any movement.
- e) Repeat at all fastener locations as shown in Figure 6.
- f) When all fasteners are installed apply silicone and insert 3/8" plugs (not supplied) into each fastener location to seal out water.

Residential doors

Residential doors are subject to dynamic loads, such as for example slamming the door shut, rather than static loads. Moreover, fewer closing points exist on a residential door than on a window. Due to this reason, additional attachments have to be applied (see fig.9) in addition to the afore-mentioned conventional fixing points.

The reinforcement profiles are to be attached additionally in residential doors with a mullion consisting of several parts or as connected individual elements.



E. FINAL CHECK FOR SQUARE

Measure the distance from the interior upper left frame corner diagonally down to the lower right frame corner, then measure the other two corners. These measurements must be within 1/16" (2mm) of each other.

In addition, the height of the frame at the center must be the same as the height at each end. The margins around the door should be even on all sides. Adjust the shims and screw tightness as necessary.

VII. SASH ADJUSTMENT

With the door frame now plumb, level, square, and secure within the rough opening, it is time to adjust the sash to ensure proper unit operation. Fig. 7 illustrates the functionality of the hinges:

1. Using a 4mm Allen key, the hinges can be moved along the x-axis +/- 5mm
2. Using a 6mm Allen key, the hinges can be moved along y-axis +/- 1mm
3. Using a 6mm Allen key, the hinges can be moved along the z-axis +/- 1.75mm.
4. Roughly three full turns translates to 1mm adjustment on x-axis and y-axis.

**1/2 turn recommended at a time to limit potential for hinge binding.*

Figure 7

