

SECTION 4

DIRECT FIX SYSTEM

PATIO DOORS

CONTENTS

<u>Para</u>	<u>Title</u>	<u>Page</u>
1	INTRODUCTION	4.3
2	EQUIPMENT	4.4
2.1	Standard Requirements	4.4
2.2	Recommended Requirements	4.4
3	COMPONENT IDENTIFICATION	4.5
4	ACCESSORIES	4.6
5	COMPONENT AND GLASS EQUATIONS	4.6
5.1	Component Measurements	4.6
5.2	Glass Measurements	4.8
6	OUTER FRAME CONSTRUCTION	4.8
6.1	Cutting Techniques	4.8
6.2	Construction Techniques	4.11
6.2.1	Head/Jamb Assembly	4.14
6.2.2	Gill/Jamb Assembly	4.15
7	INSTALLATION GUIDE	4.17

Sapa's policy is one of continual system development and we reserve the right to incorporate design improvements and changes. Every effort is made to ensure that all details are correct at time of publication. However, it is the responsibility of the customer to check the accuracy of the relevant facts and information before entering into any contract or other commitment. Up to date information is freely available from the Sapa Building Systems Webshop. All Products and systems which Sapa supply are supplied subject to Sapa's standard Terms and Conditions of Sale current from time to time.

ILLUSTRATIONS

<u>Fig No</u>	<u>Title</u>	<u>Page</u>
4.1	PATIO HEAD	4.5
4.2	PATIO JAMB	4.5
4.3	PATIO CILL	4.6
4.4	HEAD/CILL PREPARATION	4.9
4.5.1	FIXED/LOCK JAMB PREPARATION	4.10
4.5.2	MULLION (3 PANE) PREPARATION	4.10
4.6	GILL PREPARATION	4 11
4.7	JAMB PREPARATION	4 12
4.8	HEAD PREPARATION	4 13
4.9	HEAD/JAMB ASSEMBLY	4 14
4.10	CILL/JAMB ASSEMBLY	4 15
4.11	PLASTAZOTE END PLUG	4 16
4.12	PATIO DOORS - OVERALL VIEW (1)	4 19/20
4.13	PATIO DOORS - OVERALL VIEW (2)	4 21/22

1. INTRODUCTION

Direct fix patio doors are supplied in kit form. Each kit contains all the direct fix system outer frame profile components and thermal barrier internal components required to construct a patio door.

The direct fix outer frame components are supplied in standard lengths and are fully prepared for assembly. If, however, they require cutting down use the measurement formulae, re-preparation and construction techniques detailed in this manual.

The internal components are also supplied in standard lengths and are fully prepared for assembly. If they require cutting down, the cutting list should be prepared using the formulae detailed in this manual. The re-preparation and construction techniques however are as detailed in the Manual C-1111.

For the options available refer to the sales codes detailed in Section 5.

2. EQUIPMENT

2.1 Standard Requirements

- 1 CROSS-CUT OR PIVOT SAW WITH MINIMUM TRAVERSE FOR 100mm (4") SECTION.
- 2 TUNGSTEN TIPPED SAW BLADES (REQUIRE LESS SHARPENING AND GIVE A LONGER WORKING LIFE).
- 3 HAND DRILL.
- 4 DRILL SPEED REDUCTION DEVICE TO FACILITATE RE-SITING COUNTERSUNK HOLES.
- 5 FELT OR RUBBER STRIPPED BENCH TOP OR TRESTLES TO AVOID DAMAGE DURING ASSEMBLY OR GLAZING.
- 6 SASH CRAMP AND EXTENSION BAR TO GIVE MINIMUM HOLD OF 240mm (8'0" FOR 'H' TYPE DOORS).
- 7 No.2 POINT POZIDRIVE SCREWDRIVER
- 8 MAGNETIC OR CLUTCH TYPE 'POZIDRIVE' SCREWDRIVER WITH No.2 POINT.
- 9 CUTTING WAX FOR SCREW GROOVES.

2.2 Recommended Requirements

- 1 STILE/INTERLOCKER DRILL JIG - C166 + C1216 (ADAPTOR).
- 2 SIMPLE BENCH DRILL.
- 3 CROPPING TOOL FOR CILL AND HEAD - C3137.
- 4 GILL AND HEAD DRILL JIG - C3138.

3. COMPONENT IDENTIFICATION (Figs 4.1, 4.2 and 4.3)

This paragraph shows the profile and dimensions of the direct fix patio door outer frame material only. For details of the internal components refer to Manual C-1111.

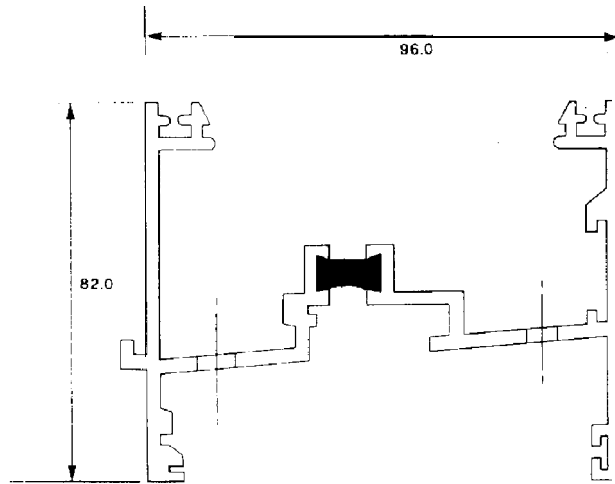


Figure 4.1 - PATIO HEAD

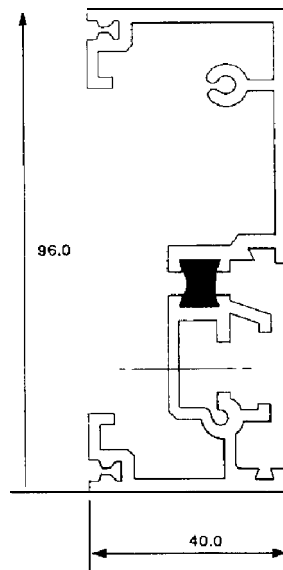


Figure 4.2 - PATIO JAMB

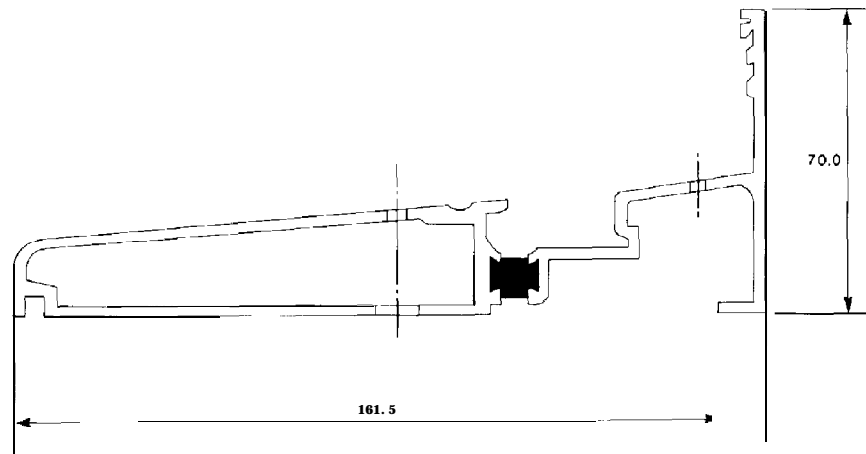


Figure 4.3 - PATIO CILL

4. ACCESSORIES

All the accessories required to construct a patio door are supplied in the kit, excluding the flipper seal.

5. COMPONENTS AND GLASS EQUATIONS

5.1 Component Measurement

This paragraph gives the formulae for calculating the component and glass sizes required for the construction of the patio doors.

Where components have an angled bar-end preparation the dimensions are taken over the longest edge of the angle.

All dimensions are in mm.

W is total width of outer frame.
H is total height of outer frame.

The head and cill are square cut. The jambs are cut at 5°.

Height and width measurements are calculated as follows:

Note: Remember to deduct a suitable fitting allowance before calculating component lengths.

Component	2 Pane	3 Pane	4 Pane
Head	W	W	W
Gauze (for hoodvent)	W	W	W
Cill	W	W	W
Threshold	W-36 2	W- 30 3	w - 20 2
Head Infill	w 36 2	W 30 3	w-20 2
Jamb	H 75	H 75	H - 75
Fixed Stile	H 95	H -95	H - 95
Fixed Interlock	H -94	H - 94	H - 94
Sliding Interlock	H · 101	H · 101	H-101
Locking Stile	H-101	H- 101	H · 101
Meeting Stile			H · 101
Mullion		H · 79	
Rails	W- 107.5 2	W-99.5 3	W- 93 4
Hoodvent Flap*	W-60 No: of flaps	W-60 No: of flaps	w - 6 0 No: of flaps
Stainless Steel Track	w - 130	w - 130	w - 130
Plastic Infill	W · 80	W 80	w · 80
Vent Hood	W	W	W

Note: The hoodvent flap may require trimming on site if a thick plaster line is encountered

5.2 Glass Measurements

All dimensions are in mm.

Glass Sizes without Midrails

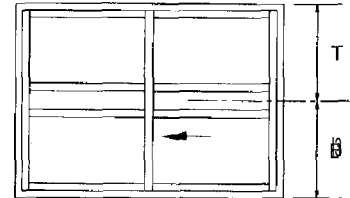
Without Midrail	Width	Height
2 Pane	$\frac{\text{(O/A Frame-I 76)}}{2}$	O/A Frame - 217
3 Pane	$\frac{\text{(O/A F\&e-239)}}{3}$	O/A Frame - 217
4 Pane	$\frac{\text{(O/A Frame-292)}}{4}$	O/A Frame - 217

Standard Midrail Heights

A	B	R
898	824.5	905

Glass Sizes with Midrails - at Standard Height

	A	B and BL	R
Top Pane Height	H-1073	H-1038	H-1087
Bottom Pane Height	766	654	766



Glass Sizes for Non-Standard Midrail Heights

	A	B	R
Top	T- 175	T-213.5	T- 182
Bottom	B- 132	B - 170.5	B- 139

ALL DIMENSIONS FROM OUTER EDGE OF FRAME TO CENTRE LINE OF MIDRAIL ASSEMBLY.

6. Outer Frame Construction

Using the formulae in paragraph 5, create a cutting list from the surveyed sized of the door aperture.

6.1 Cutting Techniques (Figs. 4.4 and 4.5)

The cill and head should be square cut to the length required and prepared as shown in Fig. 4.4.

Using the cill and head cropping tool (C3137), or by careful use of hacksaw and file, cut the inside edge of both the cill and head at each end as shown in Fig. 4.4. This is to accept the jambs.

Using the cill and head drill jig (C3138) drill 2 off 5.5 mm diameter holes at both ends of the cill and head.

The jambs are to be cut to length, with an angle of 5° as shown in Fig. 4.5, from the TOP in accordance with the cutting list. Ensure that the fixed jamb and locking jamb are correctly handed; i.e. the lock jamb channel is towards the outside of the frame and the fixed jamb is towards the inside of the frame.

Cut down the internal components (panel components) as per the cutting list in paragraph 5, and using the techniques described in Manual C-1111 Patio Doors reprepare them prior to assembly.

The outer frame may now be assembled and transferred to the site or, alternatively, transported in kit form for assembly at site.

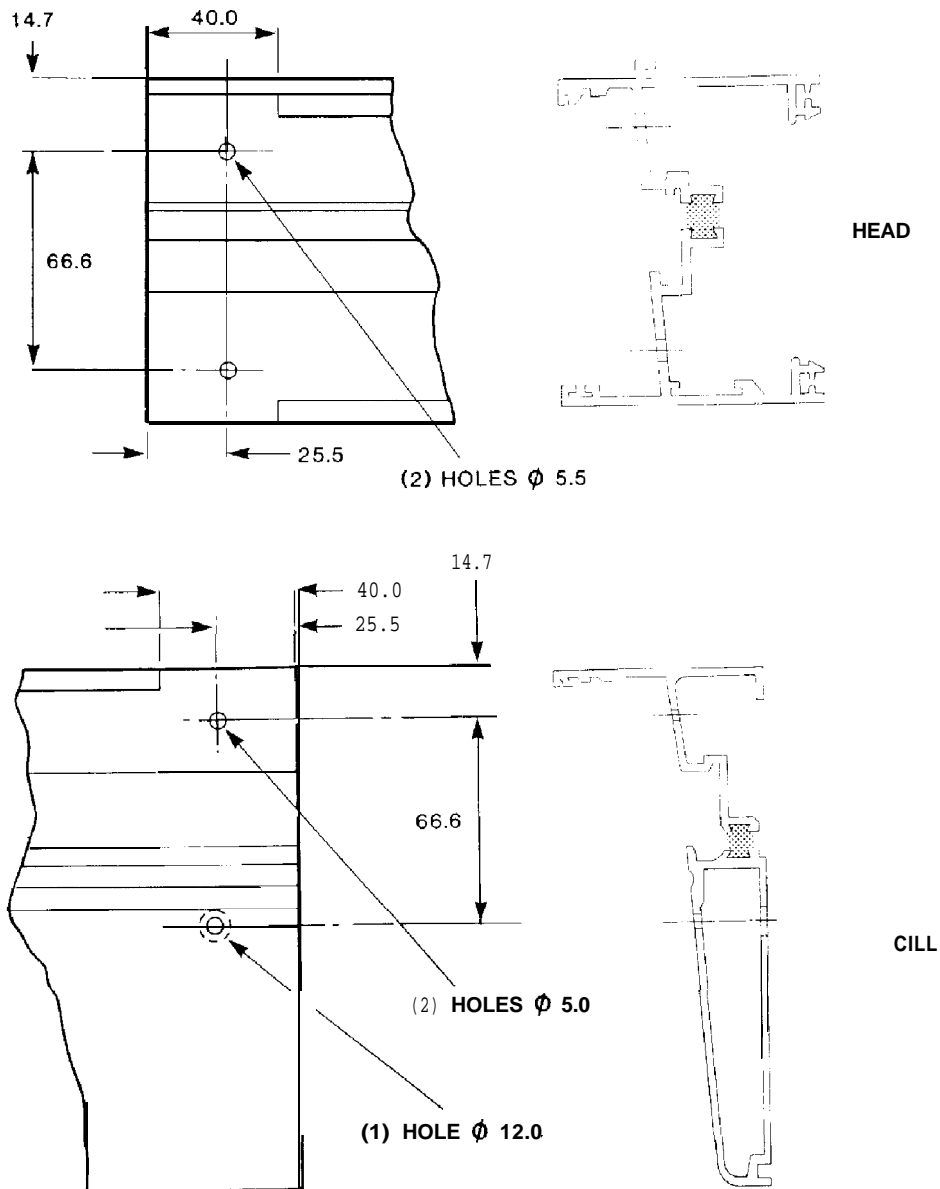


Figure 4.4 · HEAD/CILL PREPARATION

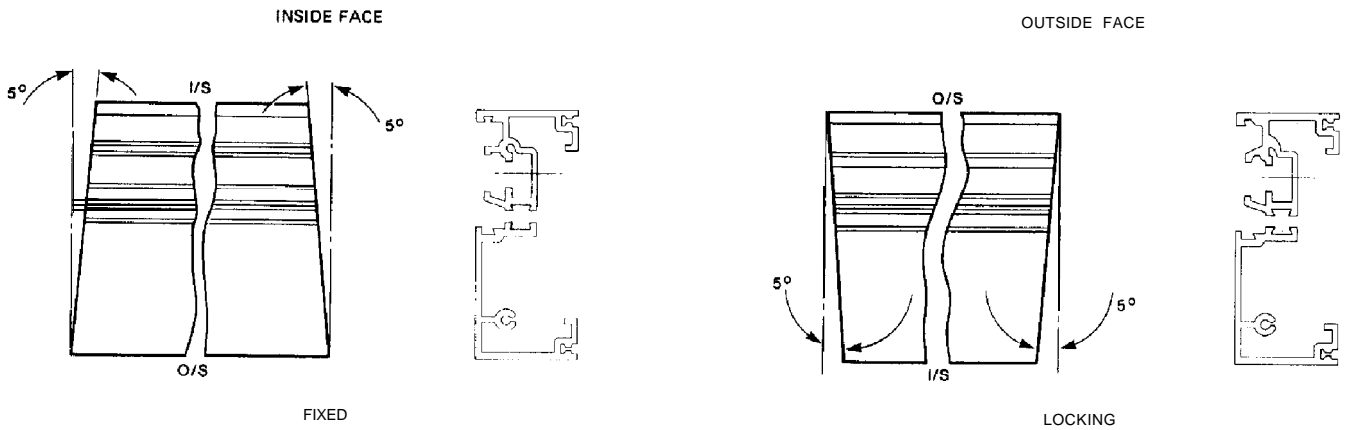


Figure 4.5.1 · FIXED JAMB/LOCK JAMB PREPARATION

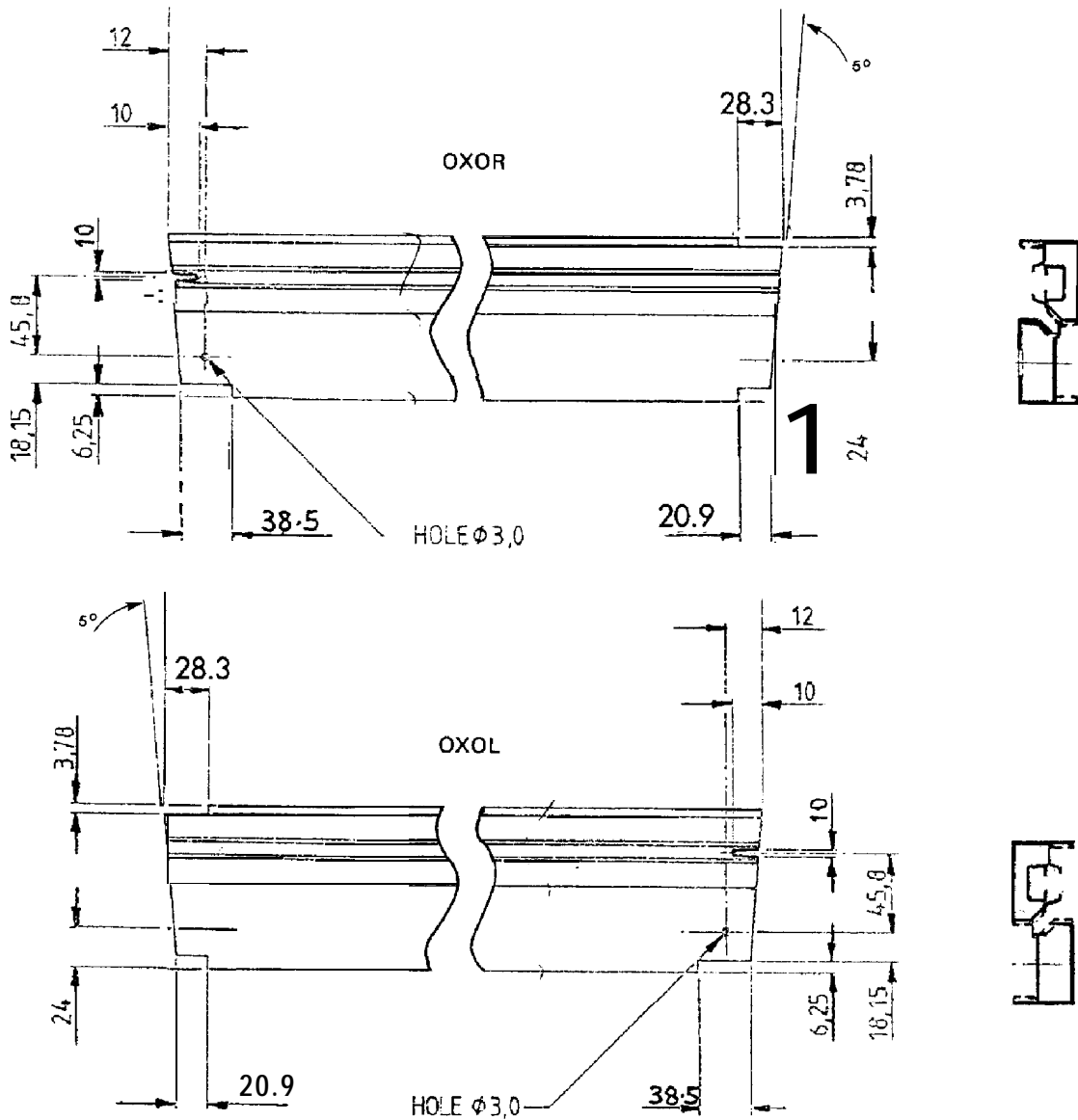


Figure 4.5.2 · MULLION (3 PANE) PREPARATION

6.2 Construction Techniques

The frame and panel must be assembled on a protected surface to avoid marking or damaging the components.

Prior to assembly check that the following items are correct:

CILL (Fig 4.6)

- a) the plastic infill is fitted to accept the threshold.
- b) the stainless steel track is fitted.
- c) the plastic trim is fitted in both ends of the track groove.

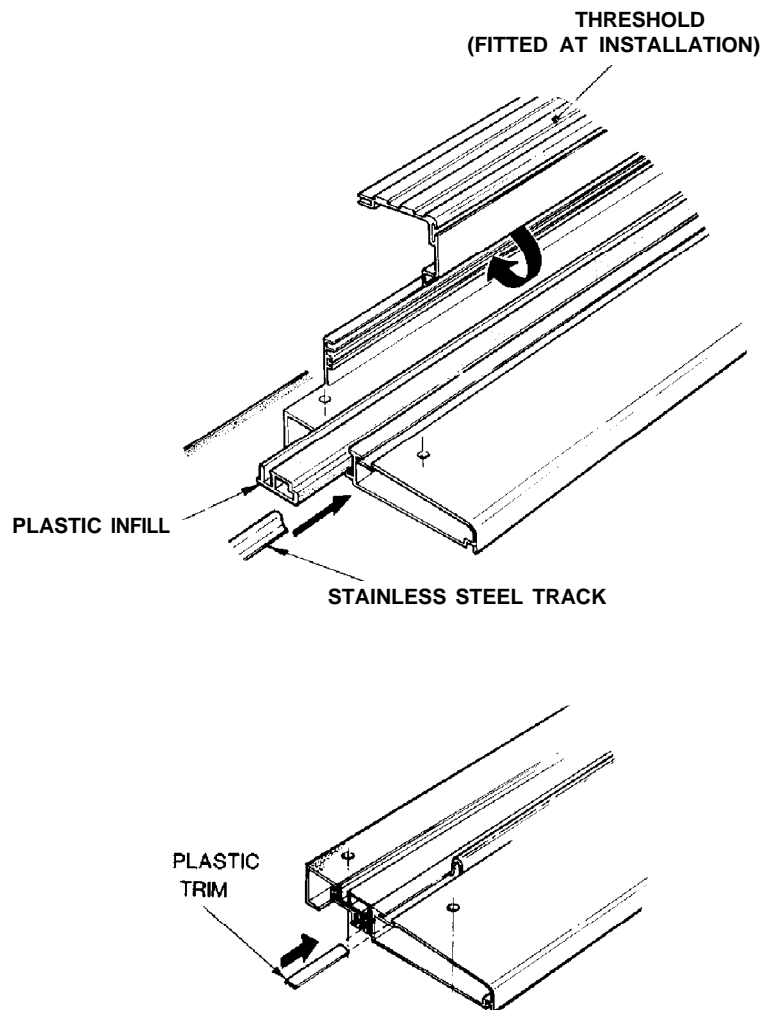


Figure 4.6 - CILL PREPARATION

JAMBS (Fig 4.7)

- d) that sufficient braces have been fitted.
- e) the flipper seal has been fitted.

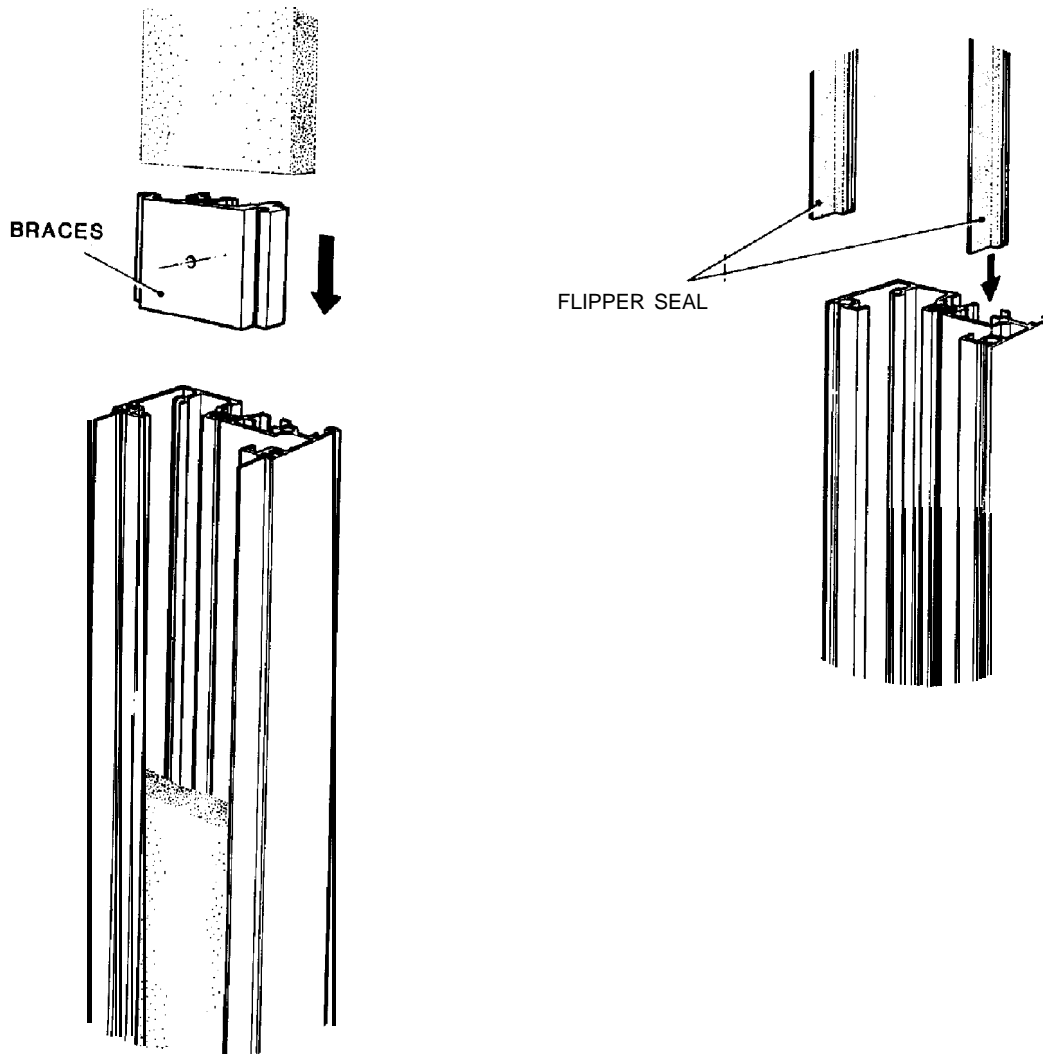


Figure 4.7 - JAMB PREPARATION

HEAD (Fig 4.8)

- f) the plastic infill is fitted to accept the head infill.
- g) that sufficient braces have been fitted.
- h) that the flipper seal has been fitted correctly.
- j) that the plastic head cover trim has been fitted.
- k) that the cill end caps are fitted.
- l) that the vent flaps gauze and magnet have been fitted.
- m) fit the shaped Plastazote end plug.

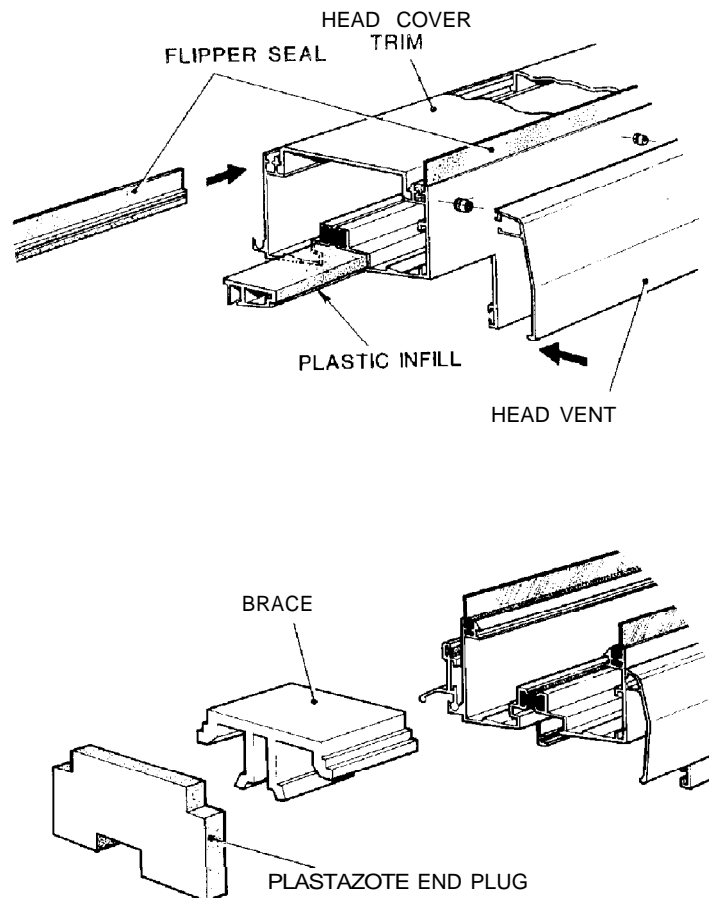


Figure 4.8 - HEAD PREPARATION

fi.2.1 Head/Jamb Assembly (Fig 4.9)

Lay the head onto the bench with the outside face upward.

Position the top of the left hand jamb, outside face upward, against the left hand end of the head.

Apply some small gap sealer to the mating surfaces.

Small gap sealer should also be applied to seal the end of the plastic infill in the head and cill. This is to prevent any water tracking along and being absorbed by the brickwork.

Secure the two sections together using 2 off No.10 x 5/8" self-tapping screws. The screws must engage the screw grooves in the jamb as shown in **Fig 4.9**.

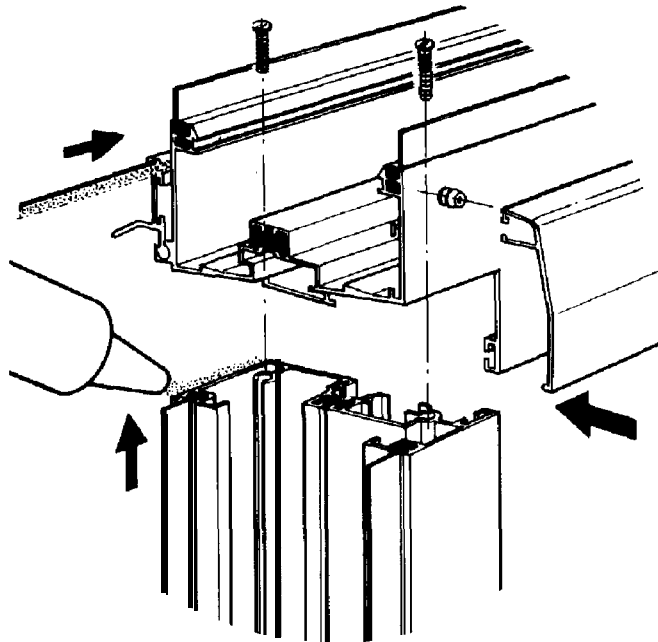


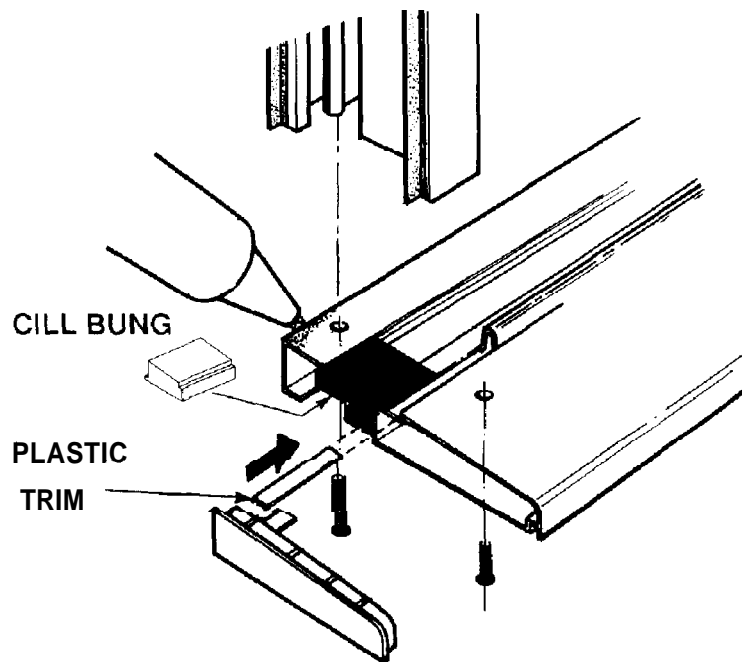
Figure 4.9 - HEAD/.JAMB ASSEMBLY

Repeat the above for the right hand end of the head and right hand jamb.

6.2.2 Cill Jamb Assembly (Fig 4.10)

Assembly of the cill/jamb section is similar to the head/jamb section.

Fit the black foam cill end plugs at both ends of the plastic infill. Silicone them in place and wipe silicone into the jamb/cill joint to prevent water tracking out to the masonry



EARLY KITS (NO PLUGS)

IT IS IMPERATIVE THAT THE JOINT BETWEEN THE PLASTIC INFILL AND THE CILL IS CAREFULLY SEALED. ALSO FILL THE SLOT IN THE INFILL WITH SILICONE. IF THIS PROCEDURE IS NOT CARRIED OUT, WATER CAN TRACK ALONG THIS CILL AND MOISTEN THE MASONRY

Figure 4.10 - CILL/JAMB ASSEMBLY

After assembly replace the foam inserts that were removed from the head, cill and jambs.

Fit the Plastazote end plugs at both ends of the head and silicone into position (Fig 4.11).

Apply silicone to the cill ends then fit the cill end caps by pressing into position at both ends of the cill section

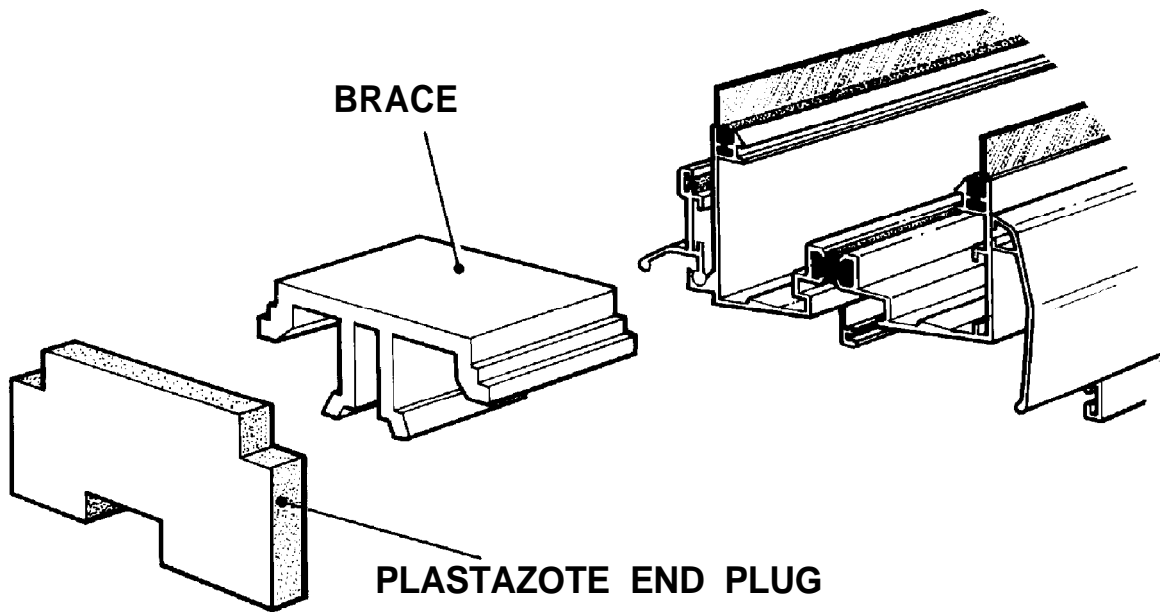
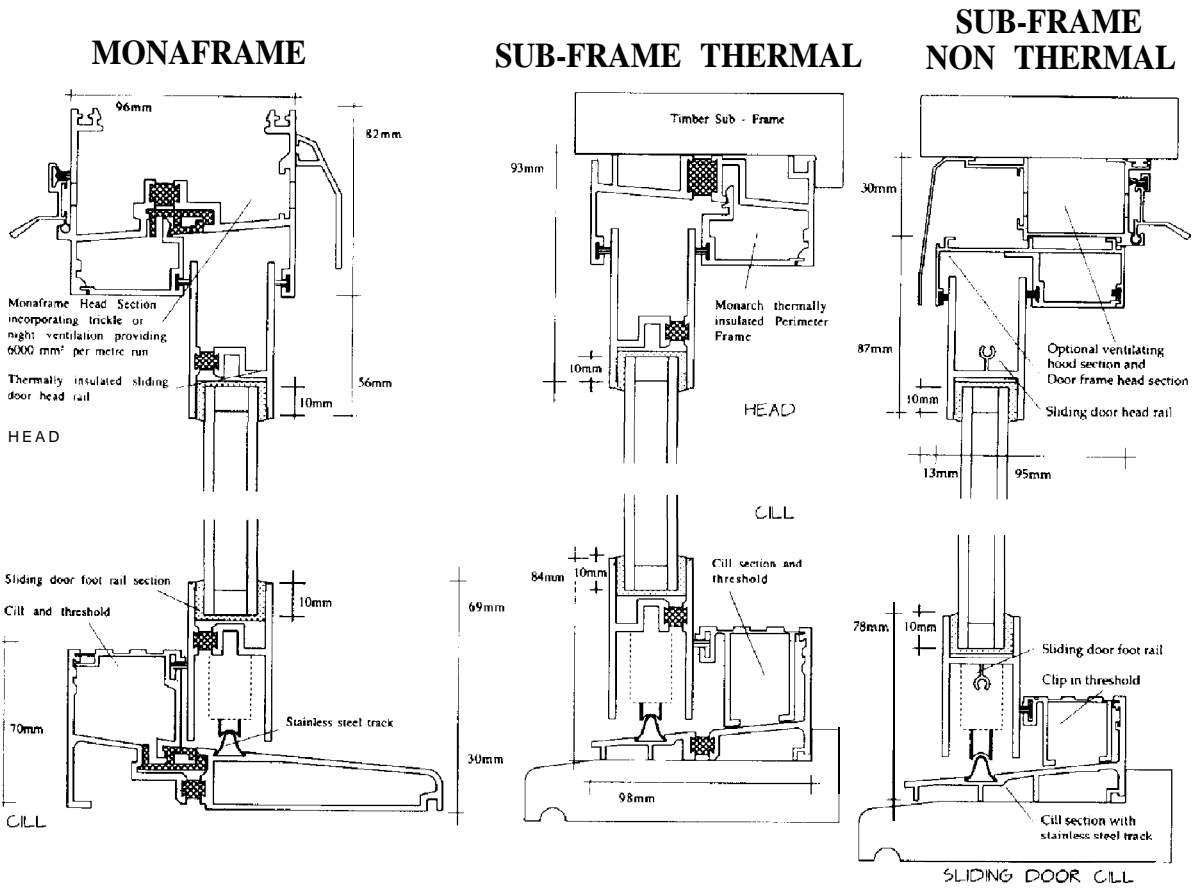


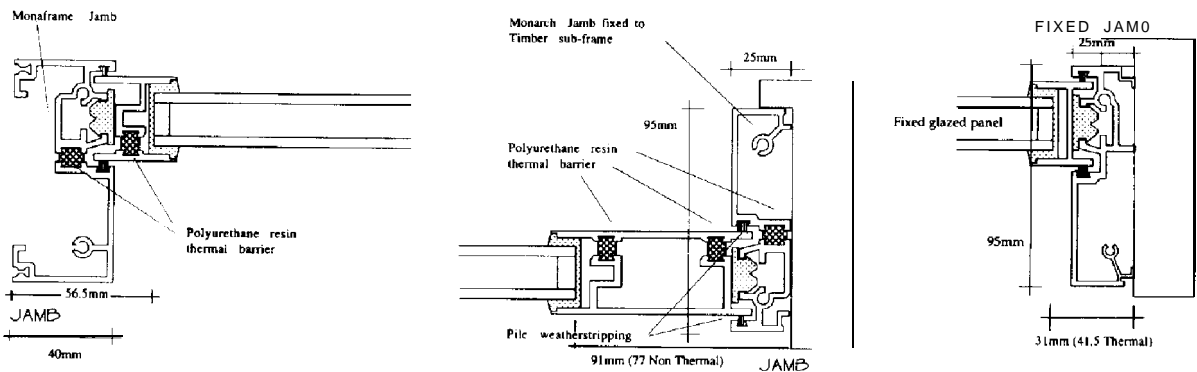
Figure 4.11 - PIASTAZOTE END PLUG

7. INSTALLATION GUIDE

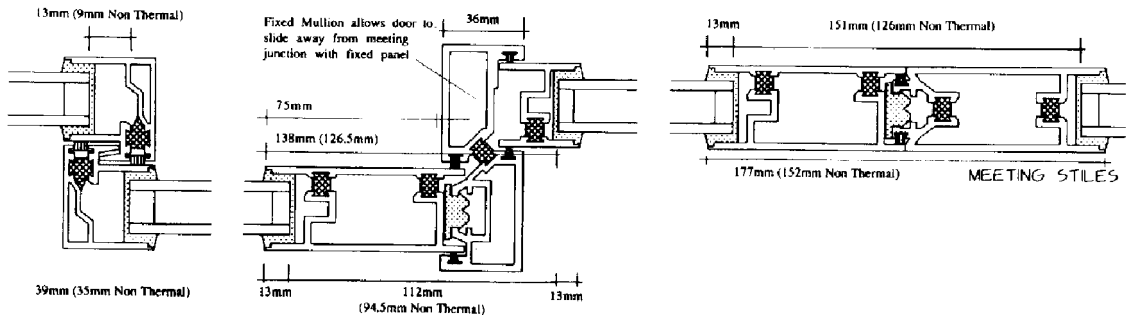
- 1 Check that the frame fits the masonry opening.
- 2 Check the masonry for soundness,
Adjust the position of the braces so that they align with the proposed fixing points.
- 3 Ensure that the foam infill is fitted between the braces.
- 4 Ensure that the Plastazote end plug is fitted to both ends of the head. Fit the cill end caps.
- 5 Drill the clearance holes for the screw fixings in the head and jambs to align with the braces.
- 6 Fit the frame into the aperture.
- 7 Drill the masonry at the fixing points, remove the frame and plug the fixing point holes.
 - a Replace the frame into the aperture, engage the fixing screws through the holes in the frame/brace into the fixing point plugs. Fix the frame loosely.
- 9 Check the frame diagonals, width and height.
- 10 Using the packers, pack the frame at the fixing points to square up the frame. Ensure that the framework is not bowed.
- 11 Tighten the fixing screws and re-check the measurements. If necessary re-adjust the packing.
- 12 Use normal procedures to fit any fixed panels as on thermal break/wood-fix patio door.
- 13 To fit the threshold - engage the outside edge into the cill infill and press the inside edge into the slot in the cill upstand.
- 14 To fit the head infill - engage in groove in head and plastic infill and press home.
- 15 Fit sliding panel.
- 16 Square cut and fit the nylon rod in the hood vent flap. Position the flap to clear the reveal.



JAMB COMBINATIONS



INTERLOCK/STILE/MULLION COMBINATIONS



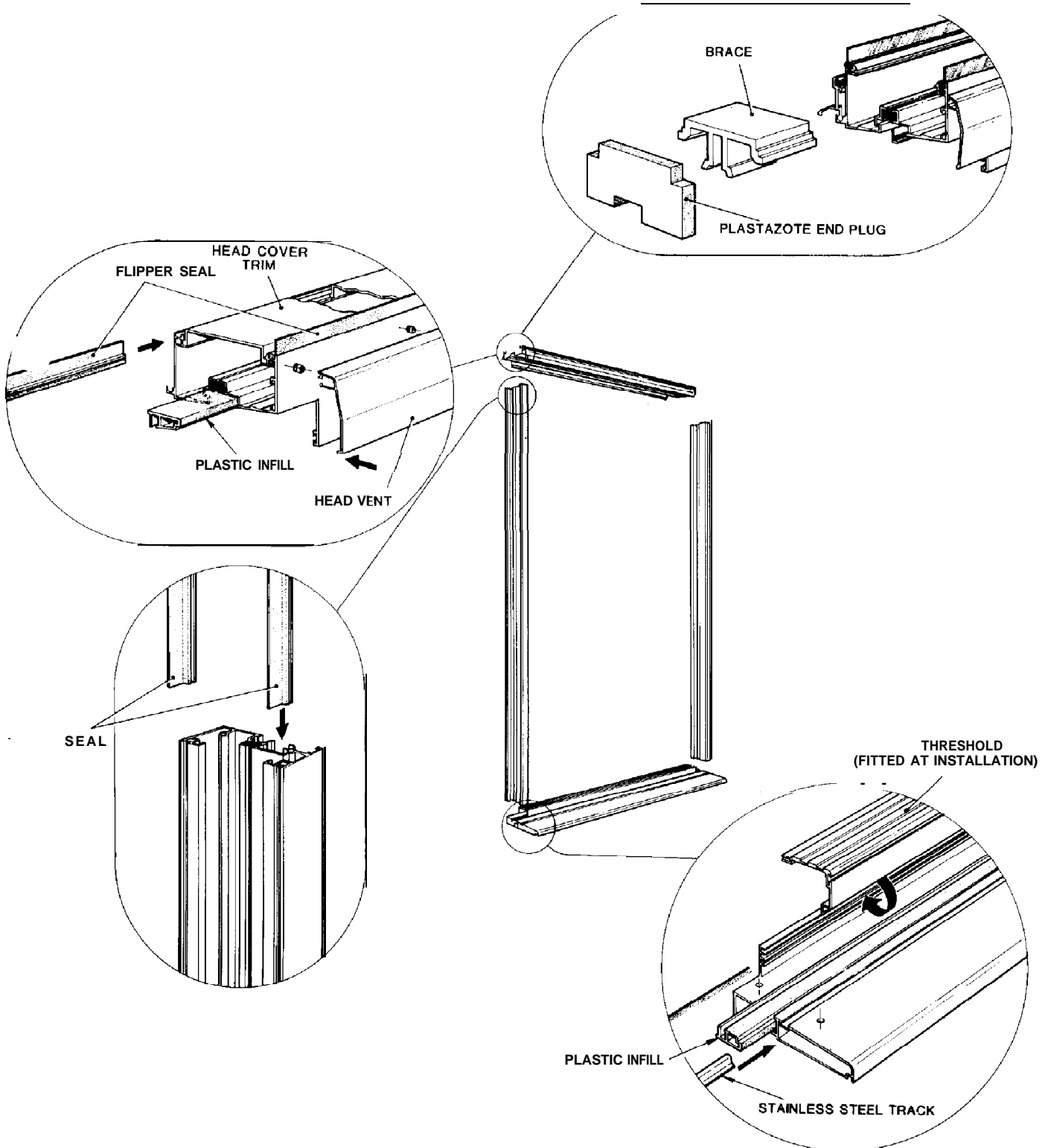


Figure 4.12 - PATIO DOORS - OVERALL VIEW (1)

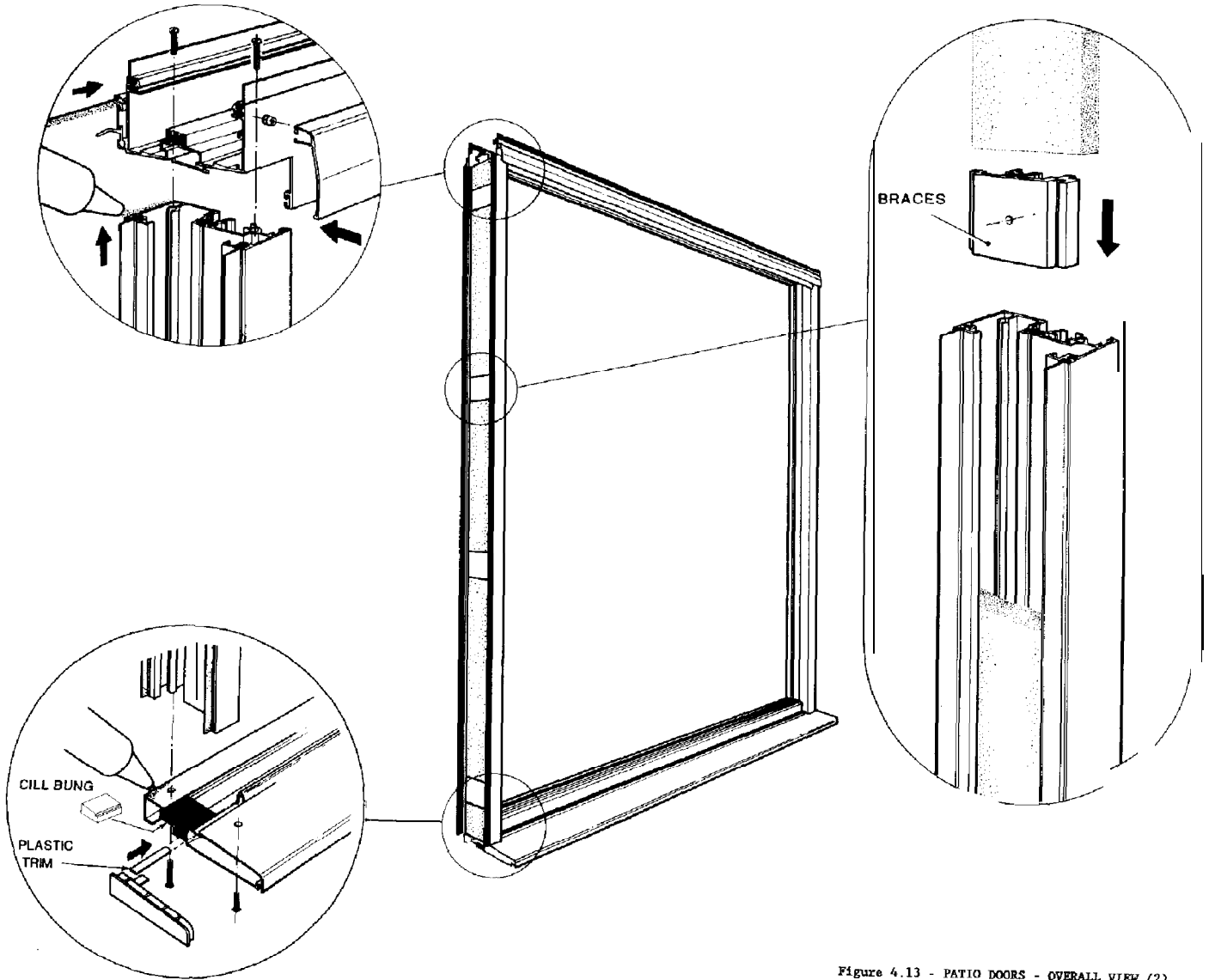


Figure 4.13 - PATIO DOORS - OVERALL VIEW (2)