

## **FITTING INSTRUCTIONS FOR FOLDING SLIDING DOOR SYSTEM SF75H**

Please refer to your order or detailed sectional drawing (if requested) to assist you with the configuration of the system supplied and identifying the profiles and their relative position. **Please read the following fully before commencing installation.**

### **Recommended specialist tools/items for fitting of system**

- 4 inch level.
- 2.5mm,3mm and 5mm Allen keys.
- T15 & T20 screwdriver bits
- Flat 28mm wide PVC glazing packers of varying sizes.
- String line
- 3mm,5mm long series HSS drill bits.
- Glazing wedge.
- Gasket cutters.
- Wide roll of DPC (if fitting a flush track system).
- 6mm glazing packers for spacing flush track off aluminium sill.(flush track system on sill only)
- Can of spray adhesive (if fitting a flush track system).

### **1 - Levelling of the base of the aperture**

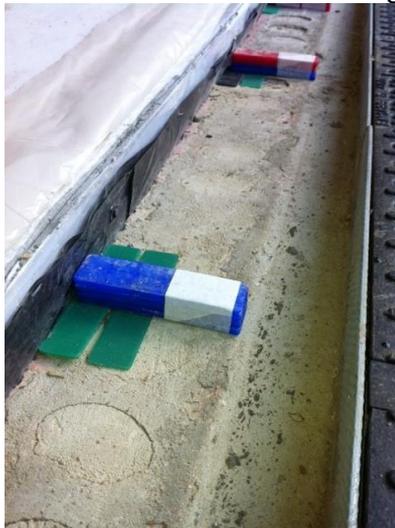
Firstly use a small 4 inch level to check the front to back level of the base on which the door system is to be fitted, starting directly against the side wall and at approximately every 250mm intervals until the edge of the opposite side wall check the front to back level of the base and place a thin packer on either the front edge or back edge of the base as required to correct any discrepancy (*see photo 1*)

Now with a suitable long level proceed to level across the width of the aperture again ensuring packers are placed directly at the ends of the aperture and on top of previously placed front to back packers at 250mm intervals (*see photo 2 & 3*)

The height of the packing should allow a recommended minimum tolerance of 6mm between the top of the door system and the underside of lintel for a fitting tolerance.



*Photo 1: Levelling & packing front to back*



*Photo 2: Packing left to right*



*Photo 3 – Levelling left to right*

## **2 - When fitting with additional sill section**

The sill section will be packaged separately from the rest of the outerframe, it is normally supplied 100mm longer than the width of the door system to allow for the sill to be cut round each end of the aperture to form a horn if so required.

Drill and fix down the sill section through the thermal break of the sill on to previously levelled base. Double check after fixing down that the sill is level across its width with no low points and also from front to back to prevent 'twisting' (see photo 4) Ensure fixings points are approximately 100mm from each end and at maximum centres of 500mm. **Do not try to position back of sill section over an open cavity, the back of the sill must be supported by a solid base to prevent twisting**



*Photo 4 Checking sill is level*

The remaining outerframe sections are flat packed in bubble wrap, take care if using a knife when unpacking these, as they are finished painted surfaces. You will also be supplied with an accessory box the contents of which are detailed below.

### **Typical Contents of accessory box**

- Hinge pins (Qty depends on no of panels)
- Handle set with screws for single leaf panels (only on odd panel configurations)
- Pull handle with longer hinge pin (open out sets only, Qty depends on no of panels)
- Set of keys (Qty depends on no of key locks on door system, three keys per lock)
- Poly bag containing Grub screws for hinges.
- Poly bag containing handle screw covers.
- Panel catch (odd configurations only)
- Stacking clip

## **3 - Identifying and prepping of outerframe sections**

Ideally lay unpackaged frame sections on trestles for ease of prepping the frame.

When measuring and marking out the track for drilling of fixing holes this should always be done on the underside of the track and then drilled from this side so not to risk damage to seen painted surfaces from the chuck of the drill, the fixing holes should be directly through the centre of the thermal break on a weathered track.

As a guide fixing points should be at approximately 125mm from each end and at maximum centres of 500mm, although if fitting directly to a base and not to a sill you may need to offer the track up to aperture to mark fixing points according to where fixings can be gained. Once fixing holes have been drilled on a weathered track you will need to check the number of fixing holes drilled against the number of screw seats within the track and remove any that are not required.

**Please note – on all systems we recommend the use of a wide DPC membrane this should be bonded to underside of track or sill, and turned up on the back inside face and at each end ,the DPC being wide is then left to trail down the front face of the base to form a flashing detail similar to sill pressing or a leaded up stand .**

**NOTE care must be taken to ensure packers under track are cut back flush with front face of track so to allow the DPC to have a fall away from the track and prevent the risk of water pooling in front of track and backtracking underneath.**

**The purpose of the DPC is to form a vertical damp and prevent any water from being drawn back under the track and forming damp patches on the internal floor .For further reference recommended position of the DPC is shown on the sectional drawing (if requested) supplied at order confirmation.**

**3a The top track** - as a guide the top track can be pre drilled with fixing holes at approximately 125mm from each end and at maximum centres of 500mm. At the stacking end of the top track additional fixing points are required between the very end fixing point and the first fixing up to a minimum of 125mm centres. This is due to the lateral pull of the panels when in the stacked position. Again the hinged end of the track can be determined by the service cut out in that end of the track.

**3b The hinge jamb** - there may be one or two hinge jambs depending on the configuration of the door system. The jambs will be labelled left and right, remember that this is always viewed from the inside.

The recommended fixing point is through the centre of the jambs additional fixings can be gained through the hinge screws on the hinged jamb ,or the keep screws on the closing jamb .

(See photos 5 & 6)



Photo 5 - Pre-drilled fixing location



Photo 6 --Gasket covers pre-drilled fixing location and screw once fitted

To determine the positions of the fixing points it is best to hold the jamb in position against the side wall of the aperture so to avoid any cement courses and ensure fixing points are drilled where you can obtain a good fixing, as a guide fixing holes should be positioned at every hinge on either edge of the jamb profile to prevent twisting with additional fixing points between the middle and top hinge to cater for the lateral pull of the doors when stacked in an open position.

**3c The closing jamb** - you may or may not have a closing jamb depending on the configuration of the door system. When supplied it will be labelled left or right and is labelled viewed from the inside.

To determine the positions of the fixing points it is best to hold the jamb in position against the side wall of the aperture so to avoid any cement courses and ensure fixing points are drilled where you can obtain a good fixing, as a guide fixing points should be at approximately 125mm from each end with two further fixings spaced evenly between as previously advised.

#### **4 - Assembly & fixing of the outer frame**

Either assemble the frame on trestles or in front of the aperture. Line the end of the of the side jambs up with the ends of the bottom track, and slot in to position. do the same with the top track to form the completed outer frame.

Take care to ensure the correct jamb is positioned on the correct side and the correct way up as advised previously jambs are labelled left and right and this is always viewed from inside. The frame is now assembled **it does not require screwing together.**

If fitting onto sill section previously levelled and installed as above apply a generous silicone bead at either ends of the sill adjacent to the side walls and along top of sill section just behind the line of the front edge of the frame (see photo 8)



*Photo 8 – Silicone bead between sill and track*

Offer the frame into the opening and locate down onto previously fitted sill or levelled base and using a suitably long level plumb and mark frame position onto sidewalls. Proceed to drill and fix side jambs through the earlier pre drilled holes in the jambs into the sidewalls of the structure. Use suitable PVC glazing packers to space out tolerance gap between jamb

and wall. *It is good practice to pack both above and below each individual fixing to prevent flexing the frame.*

Placing the level on edge of the hinges on hinge jambs is the most accurate way of ensuring vertical alignment. Additionally take care to ensure jambs do not twist if packing against uneven brickwork. The ideal end result of packing and fixing side jambs is that you are left with a similar tolerance gap between frame and wall on each side of aperture and that the ends of the jambs are level with the ends of the top and bottom track once this has been achieved then you can proceed to pack and fix the top and bottom tracks again through the earlier pre drilled holes.

Use packers to ensure top track is a constant distance from the bottom track across its entire width and the track is not twisting forward or backwards on an un-level lintel base , using a small 4 inch level on the underside of the top track is the best way to identify this.

**Note on wider systems it is recommended a string line is used when fixing top and bottom tracks to ensure tracks are straight and not bowed.**

### **5 Hanging of door panels**

With the outer frame now fully fixed you are now ready to begin hanging the doors panels.

Panels will be numbered with a label on the top and bottom of each panel the label will inform you of two things. Firstly the door set number the panel relates to e.g. set 1, set 2 etc., so if you are installing multiple sets you can ensure the correct panels end up in the correct frame. Secondly the panel within that set for example (2L-3L), panel two on a three door set folding to the left or for another example (3R -3L-3R) panel 3 right on a 6 door system stacking three panels to each side.

Starting with panel one attach to the relevant outer-frame hinge jamb using the hinge pins provided followed by panel two which needs to be lifted in at an angle firstly slotting the bracket on the bottom of the panel into the running carriage in the bottom track and up righting the panel slowly whilst guiding the top bracket into the top running carriage; whilst taking care to keep panel two vertical it can now be attached to panel one using the hinge pins provided

**Note;** if your door set is outward opening the pull handle must be fitted to the internal centre hinge between panel 1 and 2 , above the handle using the longer hinge pin provided (see photo 9)



*Photo 9 – fitted pull handle to outward opening systems*

**5a** - Before attaching panel 3, adjust the height of panel 2 using the adjustment on the bottom bracket (see photo 10) Using a 3mm Allen key release the locking grub screw and then with a 6mm Allen key adjust the height of the panel to achieve the same tolerance gap between underside of panel 2 and the bottom track at this point as that on panel 1 between panel and bottom track where it attaches to the hinge jamb.

This adjustment setting is crucial to the system alignment, the hinges on the hinge jamb are pre aligned to panel one in the factory to set the correct tolerance gap between the underside of panel one and the bottom track at the point of the hinge jamb (this is called the "setup height") it is then the aim to ensure this gap is maintained continually along the width of the system.

Close panels 1 and 2 before attaching panel 3 again with hinge pins provided, continue then to connect any remaining panels in the same manner and adjust heights to the "set up height"

Now proceed to follow relevant points below for your system in relation to fitting handles, panel catch, glazing of panels, fitting of closing rebate, stacking clip and making final adjustments and checks.

With all panels now connected and adjusted to height insert the small grub screws (from accessory pack) into the hinges to lock the hinge pins into position (see photo 11)

## **6 - Fitting of handles**

Handles to single leaf doors are supplied separately in accessory pack along with M5 screws to attach and Sunflex logo screw cover caps.

The handles to single leaf panels are called lever handles they stand off the face of the panel further than the pre fitted flush handle on intermediate panels and being more substantial are therefore designed to ease the operation of opening and closing the panel.



*Photo 10 – Adjusting the setup height*



*Photo 11 – Securing hinge pins*

The lever handle like the flush handles work on a 180° movement with the handle facing vertically up when in the unlocked position and vertically down when in the locked position, take care when fitting handles that the handles are fitted correctly in relation to the position of the lock, additionally screw cover caps may sometimes require filing on inside edge to improve their fit due to varying paint thicknesses on handles.

### **7 - Fitting of panel catch**

On odd numbered sets stacking in one direction (i.e. with 3,5,7 etc. number panels) a black PVC panel catch is supplied which is used to lock the single panel back onto adjacent panel. The lead panel can only be released from the catch when all other panels are closed to prevent misuse or damage to the system.

The panel catch is in 2 parts with the male part fixed to the single door panel. This panel catch should be fixed on the side rail of the door 100mm away from either the top or bottom edge of the panel so to avoid the corner cleat within the door panel. (See photos 12-14 below). If the single leaf panel releases from the stack of doors when the system is fully open then the male part of the panel catch has been fitted the wrong way round, remove this part rotate 180° and refix to rectify. The cut-out should always face the opposite way the arm of the catch projects.



*Photo 12 – Female panel catch section with arm projecting across adjacent panel*



*Photo 13 – Male panel catch section with cut-out which should face the opposite way of the projecting arm of the female section*



*Photo 14 – Two sections combined*

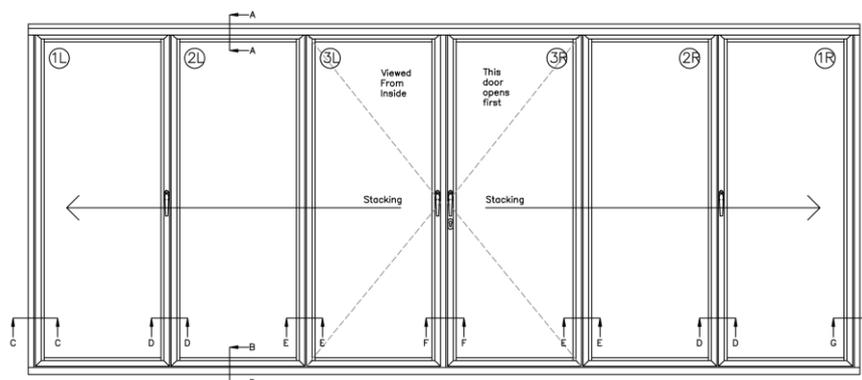
### **8 - Glazing of door panels**

The correct glazing of the glass units into the door panels is crucial and effects how the door system operates and stacks up when fully open

Before glazing the door panels you must ensure that the height adjustment at the points of the running gear is set so the panel height above the track is equal to that at the hinge jamb which is a fixed point and therefore called the "set up height".(refer to point 5a)

Firstly it's important to remember the way we number up our panels.

At Sunflex we label our panels with a simple number/letter reference, for example, for a set of doors opening to the left the panels are labelled starting with the first panel onto the hinge jamb 1L,2L,3L,4L,5L etc. and then for a set of doors opening to the right again starting with the first panel onto the hinge jamb 1R,2R,3R,4R,5R and so on. See illustration below.



### **8a - The correct packing points to toe and heel the glass:**

On a set of doors opening to the left: the packing points on odd numbered panels 1,3,5 etc. are bottom left corner and top right corner and on even numbered panels 2,4,6 etc. bottom right corner and top left corner.

On a set of doors opening to the right: the packing points on odd numbered panels 1,3,5 etc. are bottom right corner and top left corner and on even numbered panels 2,4,6 etc. bottom left corner and top right corner.

On single leaf panels it is recommended that additional packing down the sides of the panel are inserted, but care must be taken not to bow out the side of the panel. With the intermediate panels the hinging between the panels keeps the sides of the panels straight so additional side packers are not necessarily required, but if used take care again not to bow out the sides of the panel .

To begin glazing a door panel. Carefully remove glazing beads. In areas where beads are stuck firmly to the panel or to each other, do not force apart as this can split the timber and damage the finished surface. Use a sharp Stanley knife blade to cut along the line of joint to allow beads to be removed especially at the corner mitres.

The inside rebate of the door panel to which the glass will rest on must be wiped clean of any sawdust and checked for any high spots formed by excess glue during manufacture, these can be removed by using a sharp chisel. The rebate should then be keyed with an abrasive paper.

Apply a bead of silicone to the edge of the keyed up door rebate. Sunflex Uk Recommend a low modular silicone for this, You must ensure the sealant used will suitably adhere to the glass and timber, place a 6mm packer in the required bottom corner and a temporary packer in the opposite bottom corner of the panel to support the glass. Now insert the glass unit onto the packers, next insert packers in the sides of the required packing corners at the top and bottom packing point ensuring that the sides of the glass units spacer bar is running parallel with the gaskets of the panel and there is an equal margin of gasket visible on each

side.

Once the sides are packed you can remove the single temporary packer from bottom as the glass is held now by the packing in the single bottom corner and the packer at the top in the opposite side, now you can insert a packer in the top corner above the side packer which will then lift the edge of the panel. The size of packer required depends on how much the end of the panel has to be raised to meet the required "set up height" (a glazing paddle is recommended to assist with this process).

**Packers should now be siliconed into position to prevent them from slipping with a neutral cure silicone (to prevent reaction to the sealed units own sealant)**

Ensure that all packers are pushed down below the top surface of the glass so as not to obstruct glazing beads.

silicone either side of packers to prevent packers from sliding out of position when panel is moved,

After packing the panel apply a thin bead of silicone on the face of the glass panel level with the edge of the spacer bar onto which beads can be bedded down

re-fit glazing beads, Make sure bead is compressed down onto glass; use a timber block with a hammer and gently tap to ensure that beads are down onto glass panel and level at the corners and

silicone compressed.

Continue to glaze all panels in this manner, observing notes below.

**IMPORTANT – MAKE SURE GLAZING BEAD IN CORNERS ARE FLUSH AND NOT STEPPED !!**

Pin glazing beads 150mm from corner and then approximately every 400mm (note; additional pins may be required)

Tool off excess silicone on both sides of panel

Glazing pinholes to be filled as follows

Oak doors - oak woodfiller to all holes.

Stained pine / meranti doors - appropriate wax stick.

Stained oak doors – appropriate wax stick to all holes

Painted pine / meranti doors - fill all holes with paint

Clean glass panel taking care not to disturb sealant on edges of glass

### **8b - The reason and aim of packing**

When packing the glass in the door panels it is important to understand what you are aiming to achieve, which is the same tolerance gap between the underside of the panels and the top of the bottom track along the entire width of the system. Below we explain why this is important and if this is done incorrectly what issues will result and why this occurs.

### **8c –Over-packing**

If the panels are over-packed (toe and heeled too high) making the gap between panel and track slightly greater than that of the set up point, this will result in the side of the end door being out of plumb to the closing jamb.

You will see a larger gap at the bottom of the panel to the jamb, to that of the top, this is caused by the over-packing pulling the bottom of the panels across back towards the hinge jamb.

Correcting this is simply done by reducing the packing in the heads of the door panels thus allowing the side of the end door to return to vertical.

### **8d – Under packing**

If the panels are under-packed (toe and heeled too low) then you will get the reverse of this; a larger gap at the top of the end panel to the jamb to that of the bottom, in this instance the increasing of the packing in the heads of the panels to the glass will correct the problem.

### **8e - Weight transfer**

This another important point to learn about glazing and how it can affect the performance of a folding door system.

When glazing panels one and two, ensure panel two is the main load bearing panel so the weight is transferred onto the running block on the end of this panel. This greatly improves the balance and running of the door and helps to ensure the doors when stacked together do not lean out at the top.

We know it is normal practice to start glazing a door system starting with panel one, which then means that this panel is packed to the set up point, and becomes the main load bearing panel, however this can then lead to this panel trying to lift panel two causing unbalance of the door stack and leaning of the panels.

How door panels stack together is affected by which panel is the load bearing panel and by adjusting the packing of the glass in odd numbered panels to even numbered panels will alter the stacking of the doors.

So for example if you make the odd numbered panels in a door set the main load bearing panels and then go to stack the doors up at the end the bottom of the panels will touch and the tops will lean out, if you reverse this and make the even panels the main load bearing panels then the tops of the panels will pull in and the stack will look a lot straighter.

As a guide if we were glazing a seven panel system all opening in one direction we would ensure panels 2 and 6 are taking the weight of panels 1 and 5, then with panels 3 and 4 packed evenly, the lead door panel 7 would be packed as normal. This should ensure a smooth running door system and a nice vertical stack at the end with weight transferring onto the wheel blocks.

On a five panel system I would ensure panels 2 and 4 are taking the weight of 1 and 3 with the lead door panel 5 packed as normal, to obtain the same result.

### **9 - Adjustment of jambs, fitting of closing rebate profile and sealing ends of track**

Panels are now hung, adjusted and glazed,

Close all the panels you can now check the visual alignment between the last single leaf door and the closing jamb. To gauge the tolerance gap use a couple of PVC packers to ensure this gap is equal all the way down, ideally you are looking to achieve an equal tolerance gap of 9mm for the closing rebate profile to fit between, adjusting this gap is achieved by loosening fixings into wall and increasing or reducing the packers between jamb and side wall before re tightening fixings. **(take care to ensure jamb is not twisted)**

On door sets that hinge at both ends so that you have doors meeting together you will also need to gauge the gap between the two panel edges to ensure that there is an equal tolerance gap of 6mm, as before adjusting this gap is achieved by loosening fixings into wall on either or both jambs and increasing or reducing the packers between jamb and side wall and then re tightening fixings. **(take care to ensure jamb is not twisted)**

Finally and very importantly seal the ends of the bottom track against the side jambs with silicone to prevent water from running out the ends of the track and into the fabric of the building.

### **10 - Fitting of stacking clip**

The black PVC stacking clip comes in two parts the larger section which has to be fixed into the head track can be found in your accessory box with the smaller black PVC cylindrical tube section already fitted to the end of the adjustment bolt on the top guide bracket.

The purpose of the stacking clip is to ensure that when the panels are fully stacked open the stack of the panels is tight, secure and perfectly vertical. Additionally it prevents young children from trying to play with the doors which can be a common problem on other systems with children getting fingers trapped between the panels.

To fit the stacking clip first clip the larger section into the stacking end of the head track (see photo 16-18) and then slide the top guide bracket with the second part along so the two parts clip together then slide the panels along until all the panels are stacked tight together, at this point using a 3mm long series drill bit, drill up through one of the fixing holes in the clip and screw into position with screws provided.

You will find the clip quite strong however the tension of the clip can be reduced by simply reducing the leading edge of the clip either with a file or a sharp Stanley knife to allow the bracket to engage and disengage with less force.



*Photo 16 – larger section of catch fitted to head*



*Photo 17 – adjustment bolt with collar*



*Photo 18 – completed stacking catch*

## **11 - Finishing**

We recommend:

- Gaps under the track or sill that are too large to silicone are cement 'pointed'
- Expanding foam is applied around heads and side of frame to fill any gaps between outer frame and structural opening.
- A silicon seal or trim is used around the outer frame to finish to the structural opening as required.

### **Important Notice**

Please note that under no circumstances should the keys remain in the locking profile cylinder whilst the doors are being operated (opened and closed) as this could cause damage to the system.

Please contact your supplier should you require any additional advice.