



# Operation & Maintenance Manual

Window, door and curtain wall systems



SENIOR ARCHITECTURAL SYSTEMS







# Introduction

**Senior Architectural Systems offers a complete range of integrated windows, doors and curtain wall systems.**

Our team of experienced architectural advisers, together with our technical services department, are happy to advise on all issues relating to specification, technical data and calculations.

This document is intended to provide assistance with a range of operational and maintenance areas. For further information or support please contact us on 01709 772 600 or email [info@sasmail.co.uk](mailto:info@sasmail.co.uk)

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# Casement Window

SPW300 / SPW600 / PURe window / Ali VU

## OPERATION

Despite having a variety of configurations, hinge and locking methods; the casement window is operated in the same manner. To operate the casement window, insert the key and depress the button (depending on the handle type) and rotate the handle through 90° to disengage the locking mechanism and open by pushing outwards. To lock the window, reverse the process.

## CONFIGURATIONS

- **Top-hung:** the vent opens from the bottom of the window.
- **Side-hung:** the vent opens from a vertical side of the window.
- **Bottom-hung:** the vent opens from the head of the window.

## HINGE OPTIONS

The casement window consists of being installed with either friction stays or butt hinges. Both are effective in supporting the weight of the window in the open and close cycle.

## FRICTION STAYS

- **Standard Friction Stays** allow a quick and easy one handed operation which doesn't incorporate any sort of restrictor.
- **Restrictor Stays** open to a certain extent that is determined by positioning and fixing a slide bar to a pre-set position, which can permanently restrict the window to an opening angle.
- **Easy Clean Stays** have the same initial opening of the restrictor hinge and will open to a 90° angle. To move the window to the cleaning position, push down and slide the purple slide along. Fully closing this will reset the stay to its normal position.

## RESTRICTORS ARMS

On outward opening windows supported by either standard butt hinges or friction stays, a restrictor can be added. This is independently fixed and is used to restrict the window and provide ventilation and child safety.

## BUTT HINGES

Butt hinges aren't adjustable and are visible externally at the juncture of the frame and vent.

## LOCKING OPTIONS

On all configurations, the three main methods of locking on the casement window consist of:

- Espagnolette Locking
- Cockspur Locking
- Shoot-bolt Locking

### **Espagnolette Locking**

Espagnolette locking systems have a handle fitted in the centre of the vertical or horizontal stile, which operates gearing located within the window section. When the handle closes, the mushroom heads move into recessed keeps and engage, locking the window securely. When closed, the handle will sit equal to the rail.

The vent can be secured by with a key supplied by the installer. To operate, unlock using key and rotate handle through 90° to disengage the locking component and open the window. To lock, simply reverse the process.

### **Cockspur Locking**

This is a surface mounted handle and engages against a nylon wedge on the visible upstand of the outer frame.

To operate, depress button and rotate through 90° to open the vent. To lock, simply reverse the process.

### **Shoot-bolt Locking**

Shoot-bolt locking is has the concept of mushroom heads from espagnolette locking but also includes shoot-bolts situated at the corners of the opening vent of the windows that locate into fitted keeps on the frame of the window. This locking method is used for enhanced security purposes.

To operate, unlock using key or depress button and rotate about 90° and open the window. To lock, simply reverse the process.

## FOLDING OPENERS

In most cases, folding openers are installed on high level windows. This system will have a 'folding cam' system, often linked by rods. There may also be a ring fitted, commonly known as a 'Tandem eye'. This is fitted so it may accept a hook which will usually be fitted on a pole.

To operate, the top arm operating eye is to be pulled upwards to 'unsnap' the folding opener. Rotate the eye away from the window and push down to achieve maximum opening position. To close vent, the top arm operating eye is to be pulled upwards then the tandem eye to be rotated in towards the window. 'Snap' down the top arm to achieve the locked closed position.

**MAINTENANCE**

**WINDOW ESPAGNOLETTES**

To ensure that your window espagnolettes function correctly, it is important that the maintenance procedure (shown in the adjacent diagrams) is carried out.

**HANDLES**

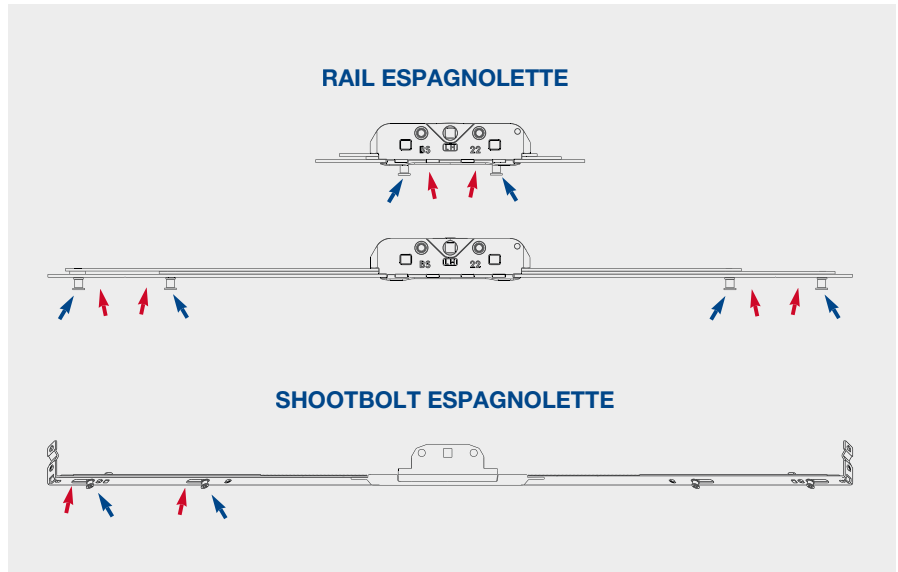
We recommend the below maintenance checks:

- Ensure the handle is free from and building materials and debris which could affect the mechanism. The handle may be cleaned using warm soapy water or a mild detergent using a soft sponge. Ensure that the handle is thoroughly rinsed and dry after cleaning.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Lubricate the pivot points of handles using general light engineering oil with corrosion inhibitors such as 3 in 1.
- Over tightening of the fixing screws could apply unnecessary strain to the locking mechanism's gearbox therefore impairing the lock.

**LOCK MECHANISMS**

We recommend the below maintenance checks:

- Ensure the lock is free from grime, dirt and any debris which could affect the mechanism. Lubricate the component using general light engineering oil such as 3 in 1.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Mechanism can be cleaned using detergent liquids or aerosol based cleaners.
- Ammonia based and abrasive cleaning fluids must not be used on any hardware, only use cleaners



that have no effect on the corrosion protection properties of the fittings.

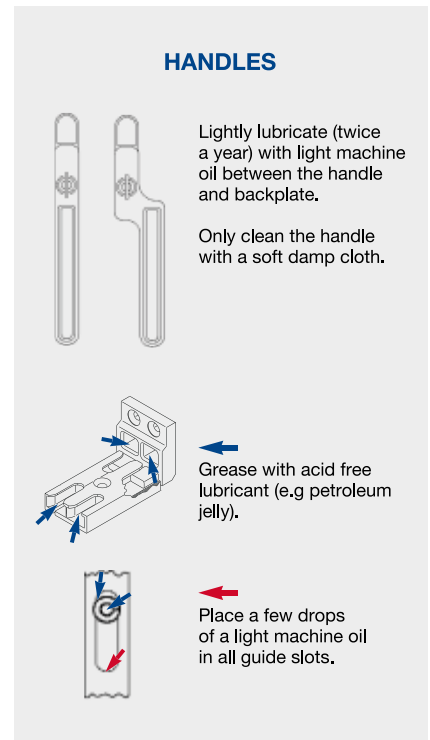
- Exposed components when the window is opened such as locking cams and hook bolts should be wiped with a soft cloth to rid of any residue lubricant and grime.

**FRICTION STAYS**

We recommend the below maintenance checks:

- Friction stays, restriction arms and safety catches should be lubricated with light engineering oil such as 3 in 1.
- Remove any dirt and debris from the, pivot, sliding shoe and track, re-apply lubrication to the pivot points only.
- The friction stays are to be cleaned using a damp cloth, with a mild solution of warm soapy water.
- All fittings must be regularly inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.

**A qualified technician must execute all major adjustments or replacements. Any attempts to complete repairs without the correct resources or product awareness could result in personal injury or damage to the mechanism.**



**For maintenance frequency, please refer to the frequency section at the end of this manual.**

# Tilt & Turn Window

SPW300 / SPW600 / PURe window

## OPERATION

These versatile, inward opening windows are capable of two methods of operation: tilt mode to allow ventilation and a turn mode to allow cleaning on the external face and emergency exit. Locking is achieved by a series of cams (espagnolettes) which are positioned on a sliding mechanism around the periphery of the window. When the handle is in the 'closed' position (downwards) and the window is fully shut, the cams are engaged in the keeps installed around the outer frame.

The handle is rotated to one of three modes – 'closed', 'tilt' or 'turn'. Ensure that the window is completely shut before changing the handle position.

To operate the Tilt & Turn window, turn key to unlock if a locking handle has been fitted.

To select 'tilt', from the 'closed' position, rotate the handle through 90° until the handle is horizontal and pull inwards. The top of the window will tilt inwards to allow ventilation.

To select "Turn" from the "Tilt" position, close the window and rotate the upwards and pull inwards. To lock the window, push the window shut and rotate the handle downwards until it reaches the 'closed' position. This is 180° downwards. Secure using the key and ensure that it is removed when not in use. Do not attempt to open the window when the handle is in between any of the three positions.

## MAINTENANCE

All aspects of the gearing should be visually checked and adjusted if necessary:

- Fixings of link arm, handle, hinges, corner transmission and wedges.
- Ensure that the link arm friction is sufficient to keep the window in tilt position without affecting the normal operation of the window. If necessary the friction can be adjusted by the adjustment screw.
- Check the working of the mishandling device. The handle can only be turned a few degrees when the window is in open position, certainly do not force the handle.

## HANDLES

We recommend the below maintenance checks:

- Ensure the handle is free from and building materials and debris which could affect the mechanism. The handle may be cleaned using warm soapy water or a mild detergent using a soft sponge. Ensure that the handle is thoroughly rinsed and dry after cleaning.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Lubricate the pivot points of handles using general light engineering oil with corrosion inhibitors such as 3 in 1.
- Over tightening of the fixing screws could apply unnecessary strain to the locking mechanism's gearbox therefore impairing the lock.

## GEARING

We recommend the below maintenance checks:

- Lubricate the locking points with a light oil or grease.
- Corner transmissions, handles and mishandling device are greased during manufacture therefore no additional lubrication is necessary.
- When necessary any dust and dirt must be removed from the perimeter locking components as this could affect the smooth operation of the system.
- The system must not be cleaned with water and or other cleaning products as this could affect the lubricants and the corrosion resistance of the gear.
- All fittings must be regularly inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.

**A qualified technician must execute all major adjustments or replacements. Any attempts to complete repairs without the correct resources or product awareness could result in personal injury or damage to the mechanism.**

**For maintenance frequency, please refer to the frequency section at the end of this manual.**



# Pivot Window

SPW300

## OPERATION

The pivot window allows for maximum ventilation and allows the external surface of the window to reverse to allow sufficient cleaning. Pivots shall be suitable for horizontally or vertically hinging reversible windows. The pivot is available in restricted (with various degrees of restriction to a maximum of 100mm) or in unrestricted. The restrictor has a fully automatic ventilation stop at an angle of 10°, 15° or 22° and a spring loaded reverse stop at 180°.

To operate, depress the handle and rotate through 90° and push. If the pivot is restricted, this will open the window marginally to a restricted position. To free this restriction, push the restrictor down. This will allow reversal of the window and will automatically engage the reverse position at 180° for cleaning purposes. To close the window, simply reverse the process.

## MAINTENANCE

### HANDLES

We recommend the below maintenance checks:

- Ensure the handle is free from and building materials and debris which could affect the mechanism. The handle may be cleaned using warm soapy water or a mild detergent using a soft sponge. Ensure that the handle is thoroughly rinsed and dry after cleaning.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Lubricate the pivot points of handles using general light engineering oil with corrosion inhibitors such as 3 in 1.
- Over tightening of the fixing screws could apply unnecessary strain to the locking mechanism's gearbox therefore impairing the lock.

### LOCK MECHANISMS

We recommend the below maintenance checks:

- Ensure the lock is free from grime, dirt and any debris which could affect the mechanism. Lubricate the component using general light engineering oil such as 3 in 1.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Mechanism can be cleaned using detergent liquids or aerosol based cleaners.
- Ammonia based and abrasive cleaning fluids must not be used on any hardware, only use cleaners that have no effect on the corrosion protection properties of the fittings. qualified technician.

## GEARING

We recommend the below maintenance checks:

- Gearing located on the vent should be cleaned using a soft, damp cloth or sponge with soapy water and thereafter wiped dry.
- All fittings must be regularly inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Clean pivot using a damp cloth.  
**DO NOT LUBRICATE PIVOT.**

**A qualified technician must execute all major adjustments or replacements. Any attempts to complete repairs without the correct resources or product awareness could result in personal injury or damage to the mechanism.**

**For maintenance frequency, please refer to the frequency section at the end of this manual.**

# Overswing (Reversible) Window

SPW300 / SPW600 / PURe window

## OPERATION

Overswing windows are fully reversible windows which are top hung and protrude outwards. When in operation, the opening vent is situated outside the building structure. There are multiple restricted positions that are used in the operation of the Overswing window.

To operate the Overswing window, turn the key and depress the button to unlock handle. Rotate the handle 90° upwards to disengage the locking component and open by pushing outwards. The window will open marginally to a restricted position. To enable the window to open further, depress the release lever located in the frame. To fully reverse the window, push the bottom of the window out as far as possible. Continue the reversal by gripping the top of the vent and pulling downwards until the vent restricts into the fully reversed position. To close the window, depress restrictor lever and push vent in the opposite direction until the restrictor re-engages. Again, depress restrictor lever and pull the window shut ensuring that the handle is turned back into the lock position.

**DO NOT ATTEMPT TO DANGEROUSLY OVER REACH.**

## MAINTENANCE

### HANDLES

We recommend the below maintenance checks:

- Ensure the handle is free from anbuilding materials and debris which could affect the mechanism. The handle may be cleaned using warm soapy water or a mild detergent using a soft sponge. Ensure that the handle is thoroughly rinsed and dry after cleaning.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Lubricate the pivot points of handles using general light engineering oil with corrosion inhibitors such as 3 in 1.
- Over tightening of the fixing screws could apply unnecessary strain to the locking mechanism's gearbox therefore impairing the lock.

### LOCK MECHANISMS

We recommend the below maintenance checks:

- Ensure the lock is free from grime, dirt and any debris which could affect the mechanism. Lubricate the component using general light engineering oil such as 3 in 1.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Mechanism can be cleaned using detergent liquids or aerosol based cleaners.
- Ammonia based and abrasive cleaning fluids must not be used on any hardware, only use cleaners that have no effect on the corrosion protection properties of the fittings.

## GEARING

We recommend the below maintenance checks:

- Lubricate the locking points with a light oil or grease.
- Gearing located on the vent should be cleaned using a soft, damp cloth or sponge with soapy water and thereafter wiped dry.
- Moving parts are to be lubricated with general light engineering oil.
- All fittings must be regularly inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.

**A qualified technician must execute all major adjustments or replacements. Any attempts to complete repairs without the correct resources or product awareness could result in personal injury or damage to the mechanism.**

**For maintenance frequency, please refer to the frequency section at the end of this manual.**



# Rebated Door Systems

SPW300 / SPW600 / Hybrid series 1 / PRe FOLD / Ali FOLD / PRe commercial door

## OPERATION

### SINGLE DOOR

Residential Doors are available in a variety of styles and operations. The doors are rebated meaning they are single action, opening either inwards or outwards.

To unlock the door, insert key in cylinder, turn to unlock and depress handle to disengage the lock mechanism and open the door outwards/inwards depending on the configuration.

To lock the door, ensure the door is fully closed to the stage where the latch engages. Lift the handle upwards until you feel hesitation, then resume action to overcome hesitation and engage the locking device and then release the handle.

### DOUBLE DOOR

To operate double doors, ensure that the master door is always opened first to avoid spraining the locking mechanism.

Your installer should have pointed out which is the master door and which is the slave door.

Dependant on the locking mechanism installed on the door, there are two methods of locking the slave door:

- Full slave locking
- Finger levers

Full slave locking has a shoot bolt which is handled operated, as the master door is. Once the master door is open, you can operate the slave door by depressing handle and open inwards/outwards depending on the configuration.

When there isn't a handle fitted to the slave door, this is finger lever operated. To operate, lift the finger lever located at the head and bottom of the slave door or integral to the keep and push or pull the door depending on the door configuration.

To lock the slave door, reverse the process.

## MAINTENANCE

### HANDLES

We recommend the below maintenance checks:

- Ensure the handle is free from and building materials and debris which could affect the mechanism. The handle may be cleaned using warm soapy water or a mild detergent using a soft sponge. Ensure that the handle is thoroughly rinsed and dry after cleaning.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Lubricate the pivot points of handles using general light engineering oil with corrosion inhibitors such as 3 in 1.
- Over tightening of the fixing screws could apply unnecessary strain to the locking mechanism's gearbox therefore impairing the lock.

### LOCK MECHANISMS

We recommend the below maintenance checks:

- Ensure the lock is free from grime, dirt and any debris which could affect the mechanism. Lubricate the component using general light engineering oil such as 3 in 1.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Mechanism can be cleaned using detergent liquids or aerosol based cleaners.
- Ammonia based and abrasive cleaning fluids must not be used on any hardware, only use cleaners that have no effect on the corrosion protection properties of the fittings.
- Keep locking keeps lubricated using petroleum jelly and ensure that excess oil is wiped clean with soft cloth or a sponge.

We recommend the below maintenance checks:

- The frame and vent should be cleaned using a soft, damp cloth or sponge with soapy water and thereafter wiped dry.
- All fittings must be regularly inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original

**A qualified technician must execute all major adjustments or replacements. Any attempts to complete repairs without the correct resources or product awareness could result in personal injury or damage to the mechanism.**

**For maintenance frequency, please refer to the frequency section at the end of this manual.**

# Non-Rebated Door Systems

SD / SPW501

## OPERATION

To operate a standard commercial door, unlock using key and push or pull depending on the door configuration. A majority of commercial doors will have a face mounted or concealed door closers. When the door is pushed or pulled into position, the closer will automatically revert to its neutral closed position, unless a hold-open closer is used. In this case, if this door is opened past 90°, the door will hold and remain open. The speed of this will depend on how the door closer has been set. The speed can also be adjusted to suit, please refer to door closer in Maintenance.

To lock the door, allow the door to self-close back into its neutral position. Insert key into cylinder and turn to engage the locking mechanism. The key should be removed from the door when not in use. If your door is fitted with automatic gearing, please refer to the manufacturers guide to operation.

## PANIC EXIT DEVICES

Emergency exit devices can be fitted on the internal section of the door. It utilises a push bar or paddle handle which operates a latch. It is important to realise the internal bar/handles are designed to be pushed in an emergency to release the door and although the handles can be used to pull the door closed to reset the hardware (or close automatically), they are not intended to be used in high traffic areas where the handles are used to pull door closed on regular intervals.

## DOOR CLOSERS

Providing the closing and final latching speeds of the door closer have been correctly set on installation, it should not be necessary to readjust at a later date. However, after the door closer has completed a short settling period, minor adjustments may be required. It should be noted that inexperienced tampering with the valve screws would cause irreparable damage. The following notes will enable the operator to make simple adjustments – if in any doubt please seek advice from the manufacturer.

It is important to realise that the two valve screws will adjust the closing and latching speeds of the door closer, they will not adjust the closing or opening forces in any way. It is very likely the door closer will require only very minor adjustment, perhaps one half turn of the valve screw. After any adjustment the door closing speed should be checked twice by opening the door fully and allowing it to close, before proceeding.

Care must be taken not to unscrew the valve head beyond the level of the closer body when increasing the closing speed. Turning the valve past this limit will allow oil to escape and the closer will need to be replaced. On the other hand if the valve is turned clockwise, decreasing the closing speed, adjustment must cease when resistance is felt as will be damaged along with the oil seal if excessive force is used.

## MAINTENANCE

### PROFILE

We recommend the below maintenance checks:

- Ensure frames are free of grime and dirt by wiping with warm soapy water.
- Check drainage holes and remove any blockages which may have accumulated over time. Check for obstructions and ensure fixings are secure.

### HANDLES

We recommend the below maintenance checks:

- Ensure the handle is free from and building materials and debris which could affect the mechanism. The handle may be cleaned using warm soapy water or a mild detergent using a soft sponge. Ensure that the handle is thoroughly rinsed and dry after cleaning.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.

- Lubricate the pivot points of handles using general light engineering oil with corrosion inhibitors such as 3 in 1.
- Over tightening of the fixing screws could apply unnecessary strain to the locking mechanism's gearbox therefore impairing the lock.

### LOCK MECHANISMS

We recommend the below maintenance checks:

- Ensure the lock is free from grime, dirt and any debris which could affect the mechanism. Lubricate the component using general light engineering oil such as 3 in 1.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Mechanism can be cleaned using detergent liquids or aerosol based cleaners.
- Ammonia based and abrasive cleaning fluids must not be used on any hardware, only use cleaners that have no effect on the corrosion protection properties of the fittings.

### PANIC EXIT DEVICE

We recommend the below maintenance checks:

- Check that the emergency exit hardware operates and the door can be opened in the correct manner. Ensure the door operates monthly and carry out routine maintenance as per door manufacturers instructions.
- With the door open depress the bar or paddle handle and release, the bolts should remain retracted whilst the door is in this open position.
- The top bolt should clear the underside of the transom by no less than 3mm. In most cases this will be level with the top of the door. With the door still open activate the trip mechanism, positioned at the top of the door on the closing face, the bolts should throw immediately.

- It is important that the catch operates correctly, especially in the case of fire doors and alarmed door which will otherwise remain ajar or unlocked. If adjustment is necessary remove the screws securing the nylon guide block in place. Take care not to allow it to drop down inside the stile.
- Remove the nylon block and lubricate the steel catch until the spring and catch operate freely.
- If the bolt position requires height adjustment, turn the bolt head until the correct projection is achieved. Ensure the bolt retracts completely when depressing the panic bar or handle.
- Refit the guide block by reverse procedure.
- Adjustment to the bottom bolt can be carried out in the same way.
- Check the housing to both door stiles for the push bar type or the single housing for the push paddle type. The housings can be removed by slackening the three 15/32" x 1/4" set screws with a 3mm Allen key. The active housing can be removed from the door by sliding out the connecting pin from the actuator pin. This will present the two shoulder bolts which should be secured firmly. If an outside rim cylinder has also been fitted two screws should also be visible. Check these screws are secure taking care not to over tighten. The operating mechanism can be lubricated with spray grease through the actuator pin slot and the housing reinstated by the reverse procedure.
- If faults can not be rectified using the information above, contact the supplier for further advice.

#### CONCEALED OVERHEAD TRANSOM CLOSERS

We recommend a **6 monthly** maintenance of the following:

Detach the door (you may need a professional to carry out such a task), remove the cover plate and expose the closer. Tighten all fixing screws and bolts. Inspect the door bearing and wipe away any debris, check the bearing rotates freely and the bolt is secured firmly in the plate or threshold. Lubricate with grease if necessary. Tighten all

fixings, including the three screws to the bottom rail of the door securing the pivot shoe. Replace the cover plate and remount the door. Tighten all the top arm fixings, particularly the clamp block screws and centre screw. Replace the name plate and clean down the door as per finisher's recommendations.

#### CONCEALED OVERHEAD TRANSOM CLOSERS SPEED ADJUSTMENT

Providing the closing and final latching speeds of the door closer have been correctly set on installation it should not be necessary to readjust at a later date. However, after the door closer has completed a short settling in period, minor adjustments may be required. It should be noted that inexperienced tampering with the valve screws would cause irreparable damage. The following notes will enable to operator to make simple adjustments – if in and doubt please seek advice from the manufacturer.

It is important to realise that the two valve screws will adjust the closing and latching speeds of the door closer, they will not adjust the closing or opening forces in any way. It is very likely the door closer will require only a very minor adjustment, perhaps only one half turn of the valve screw. After any adjustment the door closing speed should be checked twice, by opening the door fully and allowing it to close, before proceeding.

Care must be taken not to unscrew the valve head beyond the level of the closer body when increasing the closing speed. Turning the valve past this limit will allow the oil to escape and the closer will need to be replaced. On the other hand if the valve is past this limit will allow oil to escape and the closer will need to be replaced. On the other hand if the valve is turned clockwise, decreasing the closing speed, adjustment must cease when resistance is felt as will be damaged along the oil seal if excessive force is used.

**A qualified technician must execute all major adjustments or replacements. Any attempts to complete repairs without the correct resources or product awareness could result in personal injury or damage to the mechanism.**

**For maintenance frequency, please refer to the frequency section at the end of this manual.**



# Inline / Lift & Slide Door

PURe SLIDE

## OPERATION

For Inline/Lift & Slide Door operation guidance please refer to the relevant End User Guidance manual, which can be obtained from our website:

- PURe® SLIDE Inline Sliding End User Guidance
- PURe® SLIDE Lift & Slide End User Guidance
- Hybrid Lift & Slide End User Guidance

**A qualified technician must execute all major adjustments or replacements. Any attempts to complete repairs without the correct resources or product awareness could result in personal injury or damage to the mechanism.**

## MAINTENANCE

### BOTTOM PROFILE/TRACK

We recommend maintenance on the bottom profile every month:

- Overtime, dirt and general debris may gather in the bottom profile of your sliding door. Clean and if necessary, clear the drainage slots of any materials which may have collected over time.
- Keep the tracks free from obstruction and excessive dirt or water. Visible surfaces should be cleaned using a damp cloth and mild detergent, then wiped dry.

### HANDLES

We recommend the below maintenance checks:

- Ensure the handle is free from and building materials and debris which could affect the mechanism. The handle may be cleaned using warm soapy water or a mild detergent using a soft sponge. Ensure that the handle is thoroughly rinsed and dry after cleaning.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Lubricate the pivot points of handles using general light engineering oil with corrosion inhibitors such as 3 in 1.
- Over tightening of the fixing screws could apply unnecessary strain to the locking mechanism's gearbox therefore impairing the lock.

## LOCK MECHANISMS

We recommend the below maintenance checks:

- Ensure the lock is free from grime, dirt and any debris which could affect the mechanism. Lubricate the component using general light engineering oil such as 3 in 1.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Mechanism can be cleaned using detergent liquids or aerosol based cleaners.
- Ammonia based and abrasive cleaning fluids must not be used on any hardware, only use cleaners that have no effect on the corrosion protection properties of the fittings.

## GEARING

We recommend the below maintenance checks:

- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Locks, rollers, guides etc. should be checked and lubricated with general light engineering oil.

**For maintenance frequency, please refer to the frequency section at the end of this manual.**

# Folding Sliding Door

PURe FOLD / Ali FOLD

## OPERATION

For Folding Sliding Door operation guidance, please refer to the End User Guidance manual, which can be obtained from our website:

- PURe® FOLD Outward Opening End User Guidance
- PURe® FOLD Inward Opening End User Guidance
- Ali FOLD Outward Opening End User Guidance
- Ali FOLD Inward Opening End User Guidance

**A qualified technician must execute all major adjustments or replacements. Any attempts to complete repairs without the correct resources or product awareness could result in personal injury or damage to the mechanism.**

## MAINTENANCE

### BOTTOM PROFILE/TRACK

We recommend maintenance on the bottom profile every month:

- Overtime, dirt and general debris may gather in the bottom profile of your folding sliding door. Clean and if necessary, clear the drainage slots of any materials which may have collected over time.
- Keep the tracks free from obstruction and excessive dirt or water. Visible surfaces should be cleaned using a damp cloth and mild detergent, then wiped dry.
- Check on the tracks to ensure they are free of debris and in a suitable condition. If grease is applied, this will just retain dirt and dust therefore minimizing the lifespan of the wheels, so we recommend avoiding this..

### HANDLES

We recommend the below maintenance checks:

- Ensure the handle is free from and building materials and debris which could affect the mechanism. The handle may be cleaned using warm soapy water or a mild detergent using a soft sponge. Ensure that the handle is thoroughly rinsed and dry after cleaning.
- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Lubricate the pivot points of handles using general light engineering oil with corrosion inhibitors such as 3 in 1.
- Over tightening of the fixing screws could apply unnecessary strain to the locking mechanism's gearbox therefore impairing the lock.

### LOCK MECHANISMS

We recommend the below maintenance checks:

- Ensure the lock is free from grime, dirt and any debris which could affect the mechanism. Lubricate the component using general light engineering oil such as 3 in 1.

- All fittings must be inspected to ensure that they are firmly fixed. Where necessary all fixing screws have to be tightened, with all damaged/worn parts exchanged for original parts by a qualified technician.
- Mechanism can be cleaned using detergent liquids or aerosol based cleaners.
- Ammonia based and abrasive cleaning fluids must not be used on any hardware, only use cleaners that have no effect on the corrosion protection properties of the fittings.

### ROLLERS & PIVOTS

We recommend the below maintenance checks every 3 months:

- Wash with soap or mild detergent and warm water followed by rinsing with clean cold water and wipe dry.
- Apply a light application of corrosion preventative to all surfaces.

### GUIDES

We recommend the below maintenance checks every 3 months:

- Guide roller and guide channel must be kept clear and free of obstructions.
- Wash with soap or mild detergent and warm water followed by rinsing with clean cold water and wipe dry.
- Apply a light application of corrosion preventative to all surfaces.

### HINGES

We recommend the below maintenance checks:

- Visible surfaces should be cleaned using a damp cloth and mild detergent, then wiped dry
- Apply a light application of corrosion preventative to all surfaces, using a dry cloth to remove excess.

**For maintenance frequency, please refer to the frequency section at the end of this manual.**

# Overall General Maintenance

## OPERATION

Senior Architectural Systems offers a range of systems which are easy to use and maintain but in order to ensure maximum lifespan it is important to maintain individual parts regularly.

In order to maintain the system warranty the following cleaning and maintenance instructions should be carried out at least **once per year**. However a more regular maintenance regime will be required if they are subjected to any of the following:

- Strong sunlight on south facing facades.
- Installed in a marine or industrial environment.

## CURTAIN WALL

In terms of maintenance, not much can be done when it comes to Curtain Wall systems. We recommend frequent cleaning of the aluminium profile and glazing with warm soapy water using a soft sponge/cloth. All cleaned areas should be thoroughly rinsed and dried after. Gaskets may be cleaned using warm soapy water or a mild detergent using a soft cloth or sponge. Ensure no gaskets become dislodged when cleaning.

## TIMBER

The wood frame should be dusted with the occasional use of domestic furniture polish and wiped clean regularly.

Wood is a natural product that can contain resin. Occasionally beads of crystallised resin may form on the surface of the frame. These beads can be removed by gently rubbing with a cloth dampened with meths or other alcohol based substance. After this process the lacquer must be re-applied to the repair area. The frames should be checked for breaches in surface treatment at least once per year.

If the surface has been damaged it should be repaired immediately using a water based lacquer, to prevent the wood from absorbing moisture. If any algae growth exists, a fungicidal wash is recommended as a pre-treatment for external wood.

Replacement: 40+ years.

## GASKETS

Gaskets should be cleaned using warm water with a few drops of mild detergent.

Contact with paint or wood preservative must be avoided. The visible part of the surface of the product shall be cleaned every 6 months (e.g. in connection with window-cleaning, etc). When cleaning, use a lukewarm soap and water mixture or a 1.5% sodium bicarbonate solution, some dilute alcohol solution can be used when the surface is very dirty. Apply the solution on the product using a sponge or cloth; wipe the wet product with a clean soft cloth. When cleaning, do not use any sharp edged objects or tools e.g. wire brushes, emery paper, etc. and do not use any kind of strong solvents as white spirit, acetone, etc. Special requirements, like to have a more "glossy" surface, use products for treatment of rubber products, e.g. sold by traders in spare parts for cars. These surface treatment products should be used in accordance with the information from the respective agent.

When cleaning the gaskets, it is essential to ensure that a mild cleaning agent is used, which contains no organic solvents. Sharp acidic or caustic cleaners are also to be avoided. Commercial glass cleaners that contain ethanol or isopropanol are not a problem for the sealing-materials, as long as they are allowed to evaporate directly after use.

To prepare the gaskets optically, they can be treated with a suitable care product like glycerine, applied by softly rubbing on to the surface. Strong pressure on the gaskets while cleaning or applying a care or cleaning agent is to be avoided.

Replacement: 20-25+ years.

## GLASS

This should be cleaned with a soft cloth and luke warm water with a few drops of mild detergent (detergents must not contain solvent or abrasive substances). Hard brushing, scrubbing or the use of steel wool will produce scratches and must therefore be avoided.

Replacement: 25+ years.

## POWDER COATED FINISH

To retain the aesthetic qualities and ensure a long coating life, powder coated articles have to be cleaned.

The British Standard for powder coating on aluminium for external use, BS 6496:1984 (1991) states that a six monthly cleaning schedule is the maximum recommended frequency.

Areas of high industrial pollution, marine or swimming pool environments (aggressive environments) will require different cleaning frequencies and other coating/fabrication parameters should be considered on an individual project basis but generally cleaning should be carried out at least every 3 months. To retain a guarantee on the coated metal it is a mandatory requirement to have logged proof of cleaning on a monthly basis, which is to be retained by the building occupier. This is to be held for the lifetime of the guarantee, normally 15 to 25 years, except in aggressive environments where each building is given an individual time span for the powder coating guarantee.

To clean the building, mild detergent dissolved in warm water is to be used. Approved products to dilute are: Ajax Cream / Liquid Gumption / Flash and Ajax Liquid Abrasive cleaners, strong acidic or alkaline cleaners or cleaning products containing solvents, bleach, washing soda, caustic soda, hydrochloric acid brick wash etc. must not be used on or near the coated articles. The use of these cleaning agents will negate the guarantee for the coating, and will reduce its life span. An assessment of the cleaning product data sheet will be required to ensure safe working practise is observed by the cleaning contractor, ensure splashing and run off rinse is not going to be a problem to your employees or the Local Environmental Agency.

Replacement: 40+ years.

## CONDENSATION

Water vapour is indefinitely present in the atmosphere. In a home environment the content is increased through daily activities such as cooking, boiling water, bathing etc.

To control condensation, sufficient ventilation is the best method. Achieve this by opening windows, fitting extraction units or by fitting wall vents to provide an air flow.



# Cleaning Frequency

## NATURAL ANODISED / ANOLOK FINISH

In order to protect the appearance of the materials, the finish must be regularly maintained. This is best carried out as part of the window cleaning programme.

Fabrications should be protected by tape during installation. Any adhesion residue should be removed with solvent recommended by the tape supplier. The anodised surfaces should be washed down every three months. In Heavy Industrial or Marine environments, this cleaning may need to be more frequent, but the condition of the surface will make this apparent. This should be carried out using a non-alkaline detergent (i.e. Tepol) in warm water and dried down with a cloth such as a chamois leather. Cleaning solutions should have a PH figure of between 6.5 and 7.5.

Use of a more aggressive cleaner will not compensate for the lack of regular maintenance. In fact the use of such a cleaner will damage the surface.

An unobtrusive area should be test cleaned before work begins. The cleaner should be in the same concentration as will be used and applied in the same manner. The cleaner should be allowed to dry on the surface to judge the effect on the finish. It may be necessary to scrub some surfaces, particularly in areas where dirt accumulates because rain does not wash away very fine deposits naturally. This should be carried out using Scotchbrite pads (fine or ultra fine), stiff bristle or nylon brush. In the case of tenacious deposits or smut reformation, it may be necessary to use more aggressive cleaners such as Floxal Reiniger or Scotchbrite pads. The latter problems usually only occur when the general cleaning is inadequate for the local environment. After all cleaning, surfaces should be washed down to prevent deposits remaining on the finish. A normal 25 micron Anolok film, located in a city, rural or marine atmosphere maintained as described, would be expected to give excellent performance for many years.

Replacement: 40+ years.

### Externally Visible Hardware

External Environment	Maintenance Frequency
All Other Areas	Every Twelve Months
Marine/Industrial From 5-20 Km	Every Six Months
Marine/Industrial From 0-5 Km	Every Three Months

### Locking & Miscellaneous Hardware

External Environment	Maintenance Frequency
All Other Areas	Every Twelve Months
Marine/Industrial From 5-20 Km	Every Six Months
Marine/Industrial From 0-5 Km	Every Three Months

*The frequency of cleaning will also depend on the desired appearance. Accumulation of dirt may result in increased cleaning frequencies for windows and doors. Position on the building may also be a factor, for example low level windows and doors may require cleaning more regularly than high level windows.*

# Cleaning Dos And Don'ts

## DO

- Carry out a trial in an inconspicuous area to make sure cleaning has no adverse affects.
- Clean frames with mild detergent and warm water every month to remove grime and dirt which may have built up over time.
- Remove stubborn dirt with a non-abrasive proprietary.
- Ensure drainage slots are free of blockages and clean regularly.
- Clean and lubricate hardware as necessary.
- Clean weather seals with warm soapy water and should they come loose, carefully re-insert them to their grooves.
- Clean the internal glazing using window cleaner and a dry lint free cloth.
- Clean the external glazing using a soft sponge/cloth with a mild detergent and warm water.

## DON'T

- Use high pressure hose or steam cleaners.
- Use solvent based cleaners.
- Use steel wool, sandpaper, abrasive papers etc. to clean.
- Disturb sealants when cleaning.
- Use unnecessary force when cleaning the glass with leaded Georgian bars.
- Use abrasive cream cleaners or bleach when cleaning weather seals.

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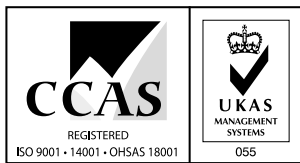
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1996/026



BES 6001: Issue 3.1  
Cert/Ref No. RS0054



Enhanced Security Door  
Enhanced Security Window  
Window General Performance



012



Council for Aluminium  
in Building  
Member



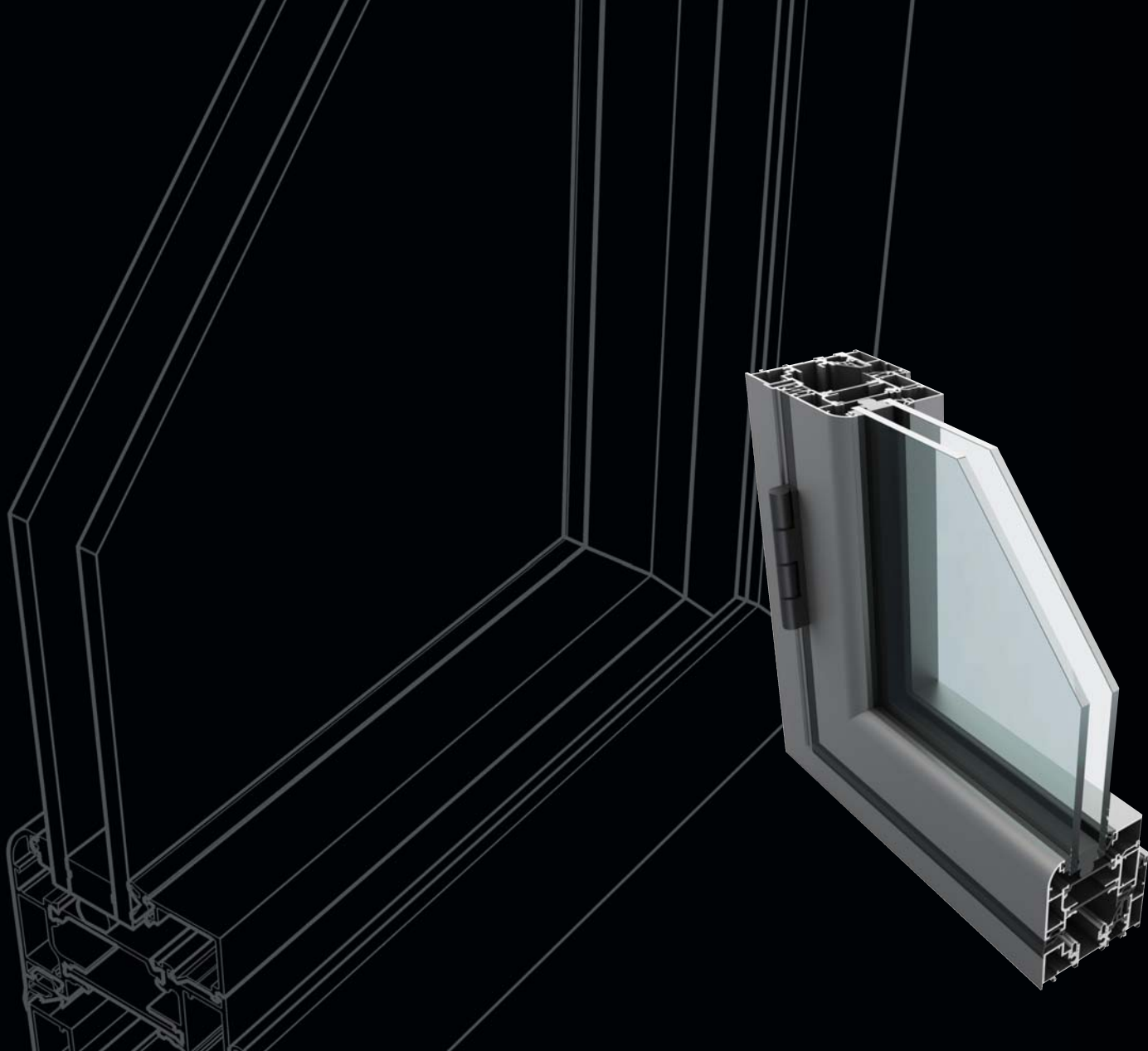
# bringing buildings to life



**SENIOR ARCHITECTURAL SYSTEMS**

Senior Architectural Systems is a major UK supplier of fenestration solutions, specialising in providing innovative aluminium and timber glazing systems to the highest standards.

Whilst every effort has been made to ensure the accuracy of this publication, no responsibility for content is taken by Senior Architectural Systems Ltd. We strongly recommend the specification for any given application is checked with Senior Architectural Systems before an order is placed. Senior Architectural Systems reserves the right to alter any of the specifications given in this publication without prior notice due to a process of continual development.



Technical information

# Ai FOLD

## folding sliding door system



SENIOR **ALUMINIUM** SYSTEMS™



## Scope

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The Ali FOLD folding sliding door has been designed to meet current and future building regulation, with impressive U values and thermal performances. Ali FOLD is an evolved generation of aluminium door systems manufactured in the UK. They combine the long life and low maintenance of powder coated aluminium externally with a polyamide high performance thermal barrier. Ali FOLD folding sliding doors are capable of accepting glazing up to 48mm thick depending on weight.

## Materials

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- All aluminium sections are extruded using Aluminium Alloy 6060 or 6063 T6 to BS EN 755 part 9 2008 or BS EN 12020-2.
- Polyamide thermal barriers are manufactured in accordance with PA66 GF25.
- Gaskets are manufactured in accordance with BS3734.

## Finishes

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Ali FOLD folding sliding door sections are available typically in two finishes.

- Polyester Powder Coating to BS EN 12206:2004 Part 1 – painted in house. Surface finish at 40 microns standard, or enhanced to 60 microns for marine environments, in accordance with ISO 9001, ISO 14001 and ISO 18001.
- Anodised finishes are to BS3897: 1991 to a minimum of 25 microns (AA25), supplied in either satin or polished finish in a limited range of colours.

## Construction

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Ali FOLD is constructed using mitred corners, joined with crimped or mechanical cleats; alignment chevrons assist in clean, accurate mitres.

A proprietary sealant is used on all metal joints in line with good practice.

## Weather Rating

Tested to BS6375-1, BS6375-2 and BS6375-3 Annex A

## Typical\* sizes

Max Door Leaf Width	1000mm
Max Door Leaf Height	2616mm
Max Outerframe Width	6000mm
Max Outerframe Height	2700mm
Max Weight Per Door Leaf	100Kg

\*For guidance only – when exceeded please consult our technical department

## Glazing

Thickness	28mm - 48mm
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For thicker options please consult our technical department

## Average U values

CEN standard - Standard	2000 x 2180mm
28mm Double Glazed Unit	1.64 W/m <sup>2</sup> K
48mm Triple Glazed Unit	1.21 W/m <sup>2</sup> K

CEN standard - Thermally Enhanced	2000 x 2180mm
28mm Double Glazed Unit	1.61 W/m <sup>2</sup> K
48mm Triple Glazed Unit	1.19 W/m <sup>2</sup> K

For glazing specification please contact our technical department

## Security

Security tested to PAS24: 2012, security hardware required. Q-Mark fully certified.

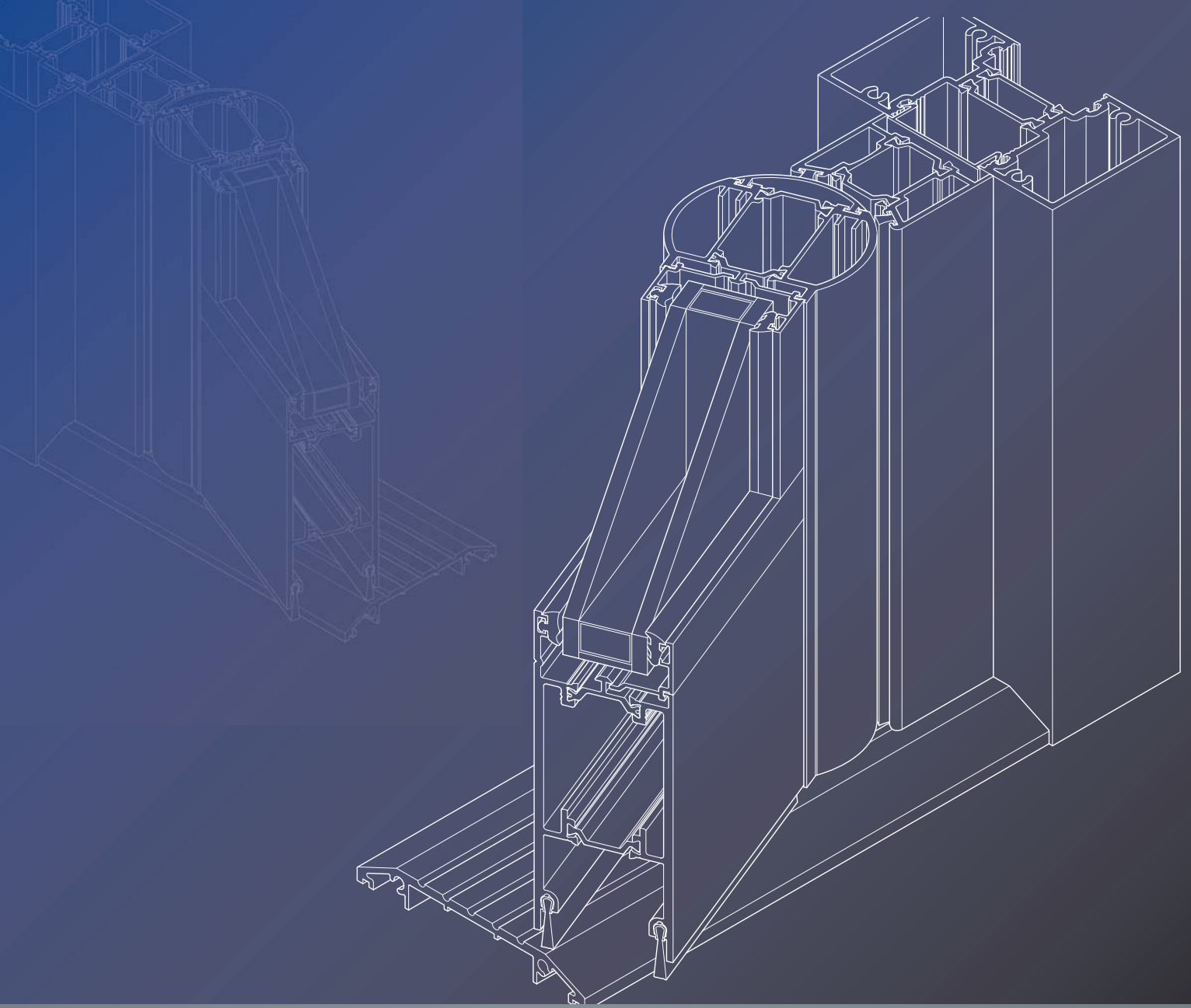
## Environmental

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Senior Architectural Systems is fully compliant with BS EN ISO 9001, BS EN ISO 14001 and OHSAS 18001 standards.

Ali FOLD, when used on projects involved in a BREEAM assessment, or within the Code for a Sustainable Built Environment and the Code for Sustainable Homes (which therefore involves the Green Guide to specification) can offer significant benefits. For project specific assistance, please contact our specification team.

**Specification. Please contact our national team of architectural advisors for advice on product suitability, calculations and NBS or bespoke specifications.**



Technical information

# SPW501 thermally broken screening and door system



SENIOR **ALUMINIUM** SYSTEMS™

## Scope

The SPW501 system has been designed to provide a high performance commercial door and framing solution capable of being manufactured in single, double, and emergency door types and utilising low thresholds and a variety of options such as radius anti-finger trap stiles. It is a thermally broken polyamide framing system, capable of accepting glazing up to 28mm thick depending on weight.

## Materials

- All aluminium sections are extruded using Aluminium Alloy 6060 or 6063 T6 to BS EN 755 part 9 2008.
- Polyamide thermal barriers are manufactured in accordance with PA66 GF25.
- Gaskets are manufactured in accordance with BS3734.

## Finishes

SPW501 framing sections are available typically in 3 finishes.

- Polyester Powder Coating to BS EN 12206: 2004 Part 1 - painted in house in single or dual colour and surface finish at 40 microns standard, or enhanced to 60 microns for marine environments, in accordance with ISO9001, ISO14001 and ISO18001.
- Anodised and Anolok finishes are to BS3897: 1991 to a minimum of 25 microns (AA25), supplied in either satin or polished finish in a limited range of colours.
- Mill finish.

## Construction

SPW501 is constructed with square cut components, mechanically jointed using self tapping screws into special cleats, and torsion bars are used for compressive strength. A proprietary sealant is used on all metal joints in line with good practice.

Automation solutions are also available.

## Weather Rating

Differing door configurations produce different ratings. Please consult our technical department.

## Typical\* sizes

	Width (mm)		Height (mm)
Single Door	1150	x	2300
Double Door	2300	x	2300

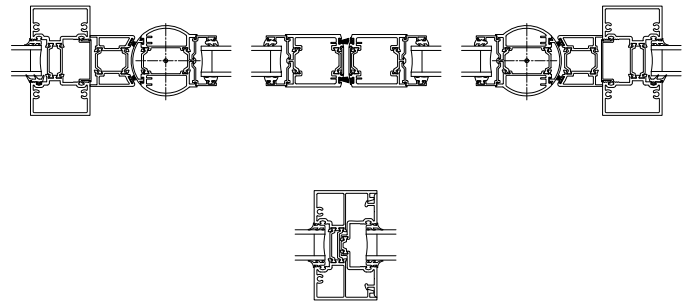
\*For guidance only - when exceeded please consult our technical department.

## Glazing

Thickness	28mm
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## Average U values (door) -

	Single	Double
Fully glazed	2.12W/m <sup>2</sup> K	2.10W/m <sup>2</sup> K
With mid rail	2.22W/m <sup>2</sup> K	2.21W/m <sup>2</sup> K

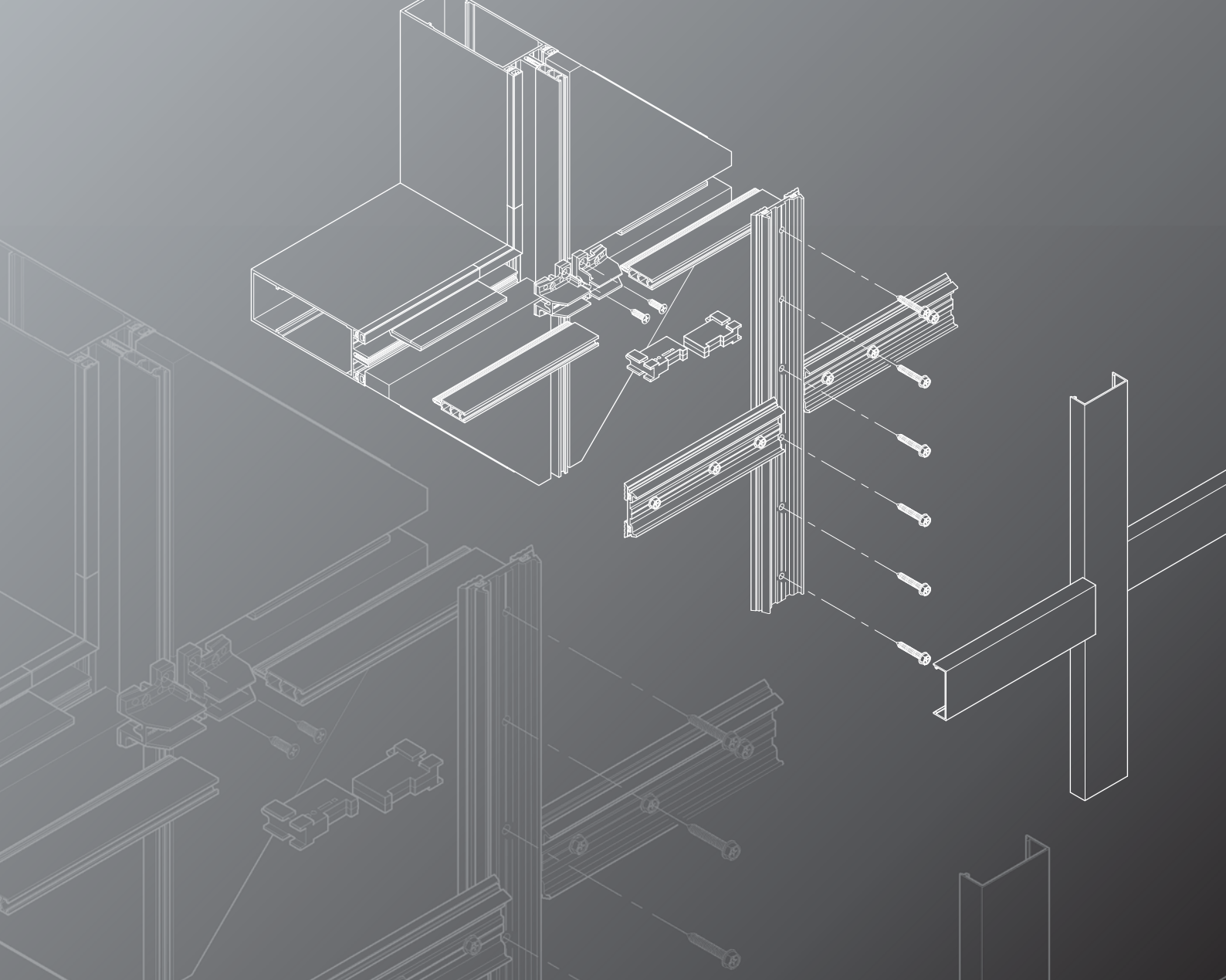


## Environmental

Senior Architectural Systems is fully compliant with BS EN ISO 9001, BS EN ISO 14001 and OHSAS 18001 Standards.

SPW501 when used on projects involved in a BREEAM assessment, or within the Code for a Sustainable Built Environment and the Code for Sustainable Homes (which therefore involves the Green Guide to specification) can offer significant benefits. For project specific assistance, please contact our specification team.

**Specification. Please contact our national team of architectural advisors for advice on product suitability, calculations and NBS or bespoke specifications.**



Technical information

# SF52 curtain wall systems

**SF52**  
CURTAIN WALL SYSTEMS



## Scope

The SF52 curtain wall system has been designed to enhance thermal performance meaning the system can exceed current building regulations. It is a stick type front loaded system using spring pins and a specially designed cleat which allows square cutting throughout. The system can be either zone drained (via conventional pressure plate drainage or using a specially designed spout system) or it can be mullion drained. The zone drained system can be assembled capped, uncapped (using the SAS toggles) or combination of the two. Glazing ranges from 22mm to 50mm. Section sizes vary from 50mm to 250mm (50, 80, 100, 125, 150, 175, 200, 225, 250). Specific profiles can be incorporated offering design flexibility.

## Materials

- All aluminium sections are extruded using Aluminium Alloy 6060, 6063 or 6083 (for improved strength) T6 to BS EN 755 part 9 2008 or BS EN 12020-2.
- Thermal breaks are extruded to BS 7619.
- Gaskets are manufactured in accordance with BS 3734.

## Finishes

The SF52 curtain wall system is available typically in three finishes.

- Polyester Powder Coating to BS EN 12206-1: 2004 Part 1 – painted in house. Surface finish at 40 microns standard, or enhanced to 60 microns for marine environments, in accordance with ISO 9001, ISO 14001 and ISO 18001.
- Anodised finishes are to BS3897:1991 to a minimum of 25 microns (AA25), supplied in a limited range of colours.
- Mill finish.

## Construction

The SF52 curtain wall system utilises square cuts throughout and is joined using a specially designed cleat and spring pin within the zone drained system. The mullion drained system uses a "lap" joint. A proprietary sealant is used on all metal to metal joints in line with good working practice. All internal gaskets are designed to mate with injection moulded corner pieces and are sealed at joints. Shear blocks and reinforcing sleeves are available.

## Average U Values

Due to the variety of profiles, mullion spacings, glass and panel specifications on each project; a specific U-value calculation will be required. Please contact our Technical Department or Architectural Advisors.

## Glazing

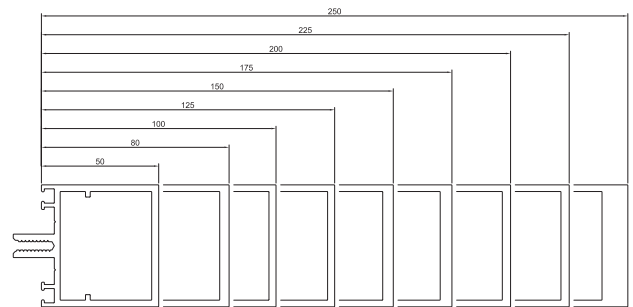
Thickness	22mm to 50mm
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## Weather Rating CWCT Sequence B

Air Permeability	600 Pa
Water Tightness	600 Pa
Wind Resistance	2400 Pa

## EN13830:2003

Air Permeability	600 Pa
Water Tightness	600 Pa
Wind Resistance	2400 Pa

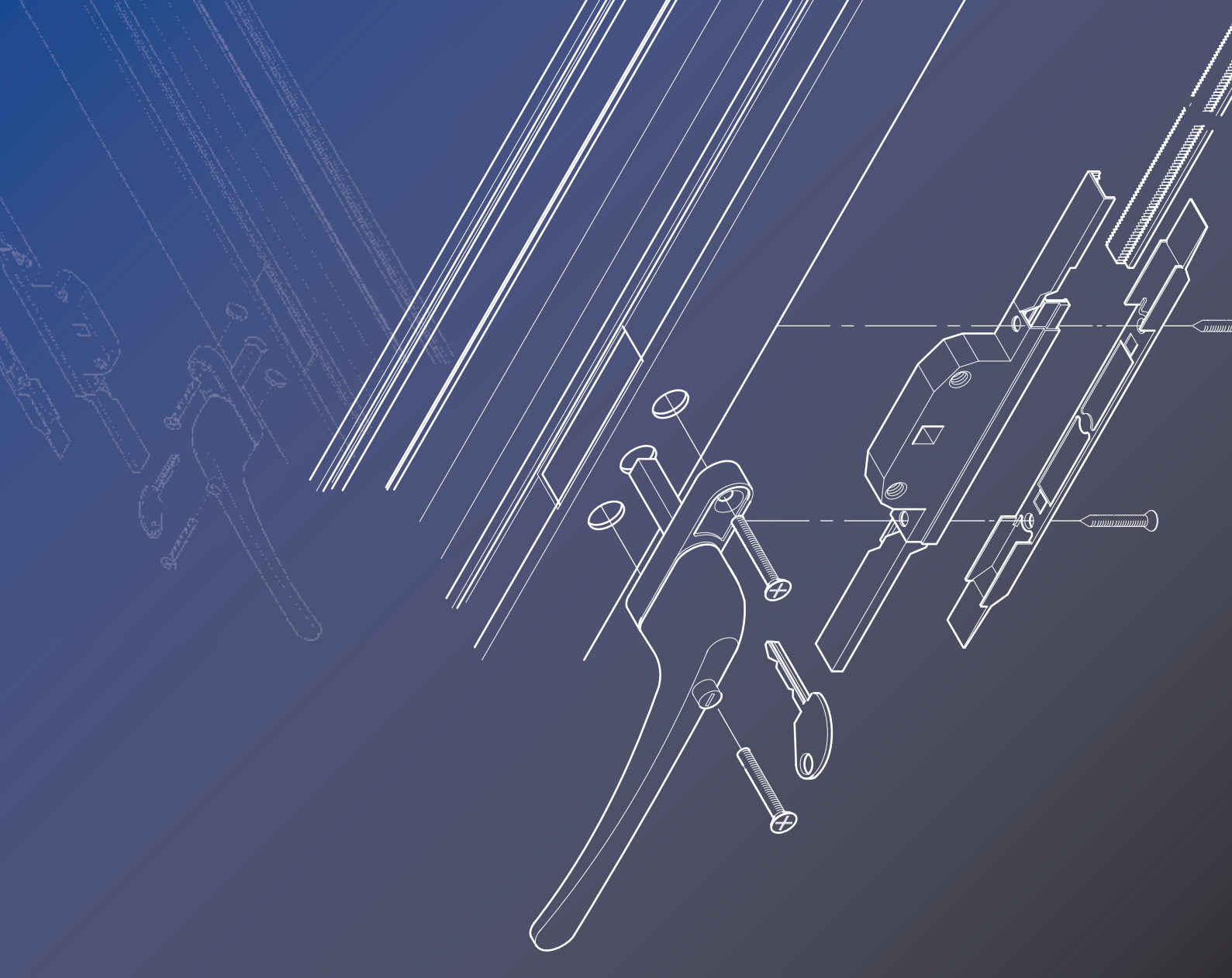


## Environmental

Senior Architectural Systems is fully compliant with BS EN ISO 9001, BS EN ISO 14001 and OHSAS 18001 standards.

SF52 curtain wall system when used on projects involved in a BREEAM assessment, or within the Code for a Sustainable Built Environment and the Code for Sustainable Homes (which therefore involves the Green Guide to specification) can offer significant benefits.

**Specification. Please contact our national team of architectural advisors for advice on product suitability, calculations and NBS or bespoke specifications.**



Technical information

# SPW600/e casement window system



SENIOR **ALUMINIUM** SYSTEMS™

## Scope

The SPW600 and SPW600e casement window has been designed to meet current building regulations. This is a three chamber 75mm polyamide window system that achieves impressive thermal performance. It is capable of accepting glazing up to 56mm thick depending on weight.

### SPW600e

This system is an evolution of SPW600 and has been further improved by the introduction of polystyrene and backer rod inserts. A wide range of sections and ironmongery allows the window system to be versatile and used in a wide range of applications.

### Materials

- All aluminium sections are extruded using Aluminium Alloy 6060 or 6063 T6 to BS EN 755 part 9 2008.
- Polyamide thermal barriers are manufactured in accordance with PA66 GF25.
- Gaskets are manufactured in accordance with BS3734.

### Finishes

SPW600 and SPW600e casement windows sections are available typically in 3 finishes.

- Polyester Powder Coating to BS EN 12206: 2004 Part 1 - painted in house in single or dual colour and surface finish at 40 microns standard, or enhanced to 60 microns for marine environments, in accordance with ISO9001, ISO14001 and ISO18001.
- Anodised and Anolok finishes are to BS3897: 1991 to a minimum of 25 microns (AA25), supplied in either satin or polished finish in a limited range of colours.
- Mill finish.

### Construction

Both SPW600 and SPW600e are constructed using mitred corners, joined with crimped or mechanical cleats; alignment chevrons assist in clean, accurate mitres. Integral transoms and mullions are scribed around the outer frames and fixed with either screw ports or shear blocks. A proprietary sealant is used on all metal joints in line with good practice.

### Weather Rating

BS6375 Part 1

Air Permeability	600 Pa
Water Tightness	600 Pa
Wind Resistance	2400 Pa

### Typical\* sizes

	Width (mm)		Height (mm)
Top Hung	1500	x	1500
Side Hung	900	x	1500

\*For guidance only - when exceeded please consult our technical department.

### Glazing

Thickness	26mm	to	56mm
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### Average U values - SPW600

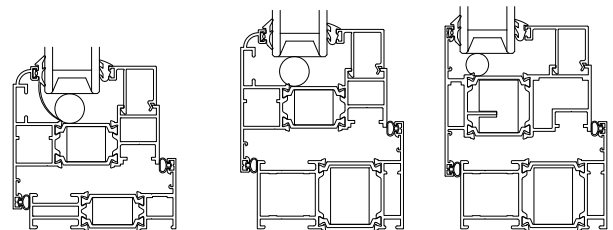
	1200 x 1200	1500 x 1500
Fixed Vent	1.45W/m <sup>2</sup> K	1.40W/m <sup>2</sup> K
Vent	1.65W/m <sup>2</sup> K	1.57W/m <sup>2</sup> K

### Average U values - SPW600e

	1200 x 1200	1500 x 1500
Fixed Vent	1.36W/m <sup>2</sup> K	1.33W/m <sup>2</sup> K
Vent	1.54W/m <sup>2</sup> K	1.48W/m <sup>2</sup> K

### Security

Tested to BS7950, security hardware required



### Environmental

Senior Architectural Systems is fully compliant with BS EN ISO19001, BS EN ISO 14001 and OHSAS 18001 Standards.

SPW600 and SPW600e when used on projects involved in a BREEAM assessment, or within the Code for a Sustainable Built Environment and the Code for Sustainable Homes (which therefore involves the Green Guide to specification) can offer significant benefits. 'A' rated windows are available under both the Green Guide and the Window Energy Rating methodology.

SPW600 and SPW600e are capable of achieving a BFR energy rating of A, B & C. For project specific assistance, please contact our specification team.

**Specification. Please contact our national team of architectural advisors for advice on product suitability, calculations and NBS or bespoke specifications.**