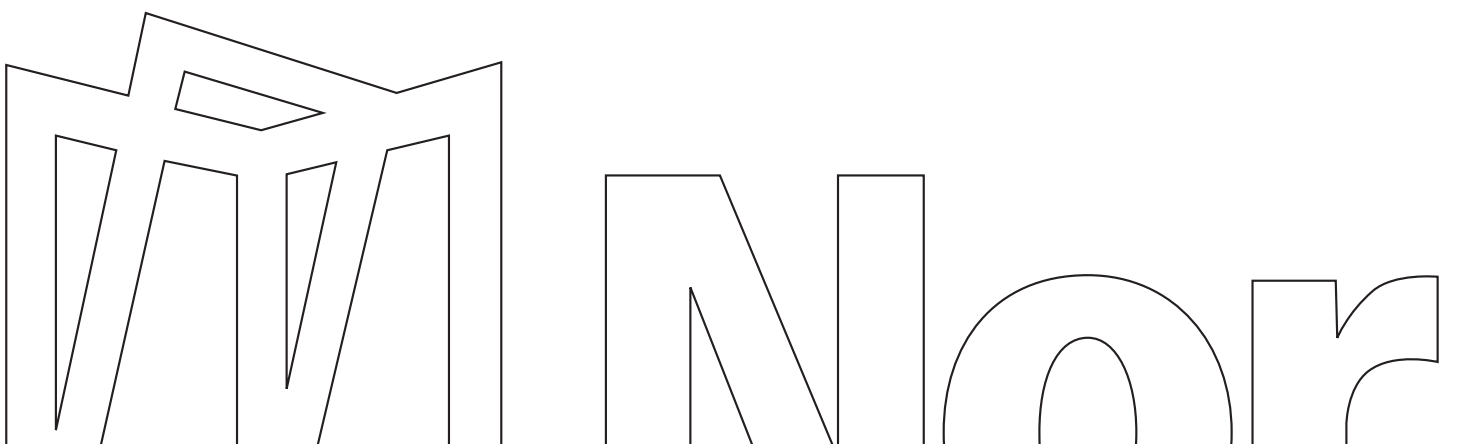


OPERATION, MAINTENANCE & INSTALLATION MANUAL





OPERATION, MAINTENANCE & INSTALLATION MANUAL

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Every effort has been made to ensure the contents of this manual is accurate at time of printing. However, because of continuous improvements to NorDan products and service, amendments may be made without notice.

If this information has been delivered along with NorDan products as part of a building project, please ensure it is passed to the end user/occupant to ensure operation and maintenance advice is followed. Please note that anyone undertaking maintenance or installation is responsible for carrying out a task specific risk assessment and method statement and retain responsibility for the safe undertaking of works.



NORDAN QUALITY AND SERVICE

INTRODUCTION

NorDan is recognised across Europe as a leader in timber window and door design and innovation. Its exceptional quality products are used wherever high specification products are required. The new NTech Passive and Low Energy products add to the existing range of standard windows and doors.

Founded in 1926 in Norway, NorDan has a unique reputation for outstanding quality and real value for money. With large state-of-the-art factories able to produce over 2,500 windows and doors per day, a workforce of well over 1,000 and computer controlled production lines, NorDan manufactures in volumes sufficient to supply the largest projects whilst remaining competitive.

The advanced design and construction of NorDan's windows and doors guarantees high performance, low maintenance and durability. All products are manufactured from top quality North European Redwood from well managed sustainable forests. An optional aluminium cladding system, available in a wide variety of colours, protects the timber from the effects of weathering, whilst being virtually maintenance free.

NorDan has a policy of continuous research and development. Working with respected independent experts in the fields of energy efficiency, lifetime running costs and environmental impact ensures that products are always at the forefront of advanced fenestration technology.

It's not just the products that are environmentally friendly. Almost 100% of the energy produced in Norway is generated from 'zero carbon' hydro electricity and each stage of the manufacturing process is closely monitored to ensure minimal environmental impact.

NorDan products are made to a very high standard and it is essential that this is not compromised in the installation process. The guidelines included here are intended to help ensure that this does not happen.



TAKING CARE OF YOUR NORDAN PRODUCTS

From the measurement, site handling and storage to the installation of NorDan products, it is always preferable to employ good practice to ensure maximum satisfaction and life expectancy with the finished article.

We look upon our products, not as building components, but as high quality furniture to be carefully handled at all times. This will ensure there are few maintenance problems during the product's lifetime which will consequently be a long one.

The following are some practical measures to help achieve this:

- Never install into an incomplete opening or a building without a fully installed, weather-tight roof
- Store goods under cover in a dry and ventilated space until they are installed.
- Use soft packers to keep frames from rubbing or touching one another when in storage
- Store units vertically, NEVER horizontally
- Handle the products like furniture. Wear clean gloves to protect the finishing

- Encourage other trades to respect and not abuse installed windows and doors
- Follow all the guidelines in this leaflet
- Protect the products during and after installation

Note: The installer should always check with a structural engineer to ensure the security of the fixings, and that the structure is capable of taking the transferred loadings.

Lnr	Mrk	Qty	Description	Width× Height	Net unit price
020	W2	3	ND NTech Fixed frame w/sash	888 × 2288mm	
1	2	3	Construction Standard		
		4	U-value product: 1,3W/m²K		
		5	Weight 65 kg		
			Without ventilator Inward opening tilt and turn sash		
		6	Glass Low E WES/Ar Construction 6+16G+ES6 Transmission LT/TST 69/48 ba: Lam Low E w/Toughened WES/Ar Construction 6,38ES+16G+4# Transmission LT/TST 70/44		
		7	Aluminium cladded Product Unspecified colour Surface finishing Product Unspecified colour		
		8	Details: No fixing holes No sub frame groove in head No sub frame groove in jambs Chrome handles/stay Silver ventilator Lockable handle (53/54) fitted		
		9	Note (only for customer): TOO LARGE TO BE SINGLE OPENING SASH		
		10	Bar: 62 = Solid transom/mullion		
010	CILA	1	Miscellaneous profile RAS5419 Surface finishing Product Unspecified colour	888mm	
		13			

IDENTIFYING YOUR NORDAN PRODUCTS

UNDERSTANDING YOUR ORDER CONFIRMATION AND QUOTES

The key items to consider on your order acknowledgement and quotes are the following:

1 Line number of your quote	6 Glazing specification of the product (# indicates toughened or obscure glass) including light transmission/G value	12 Price for each product of this type
2 Product reference from your drawing or schedule	7 Colour finish with individual details	13 Aluminium cills included in your quote
3 Quantity of products with the same description	8 Details specific to the product	If there are still items that you are unclear about, please contact your nearest NorDan regional office who will be more than happy to help.
4 U-value of the whole product	9 Any note, specific to the particular product	
5 Weight of the product	10 Thickness and position of transom or mullion bars from top of frame	
	11 Manufacturing size of the product	

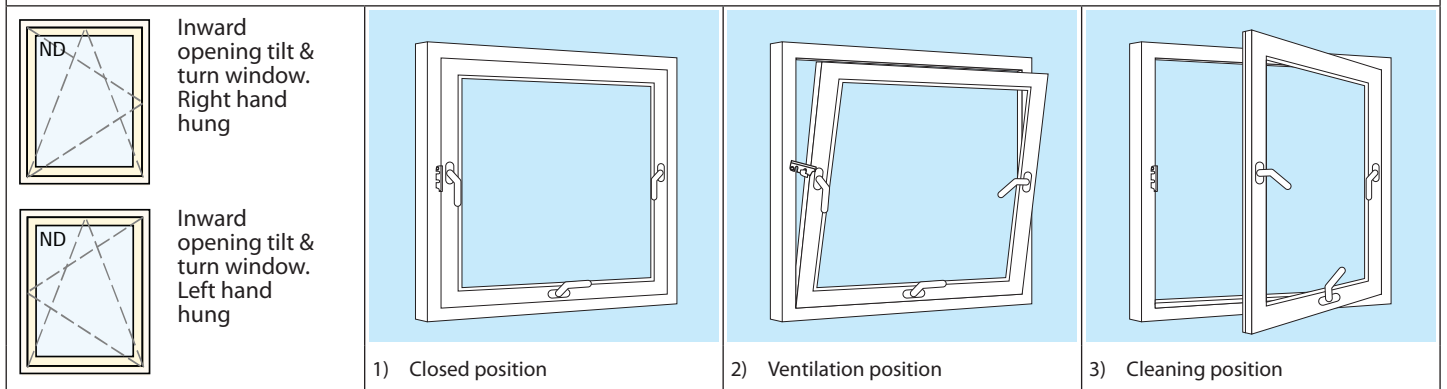
IDENTIFYING YOUR WINDOWS FROM ORDER CONFIRMATION AND QUOTES

Please note the following principles which apply to all NorDan UK offers:

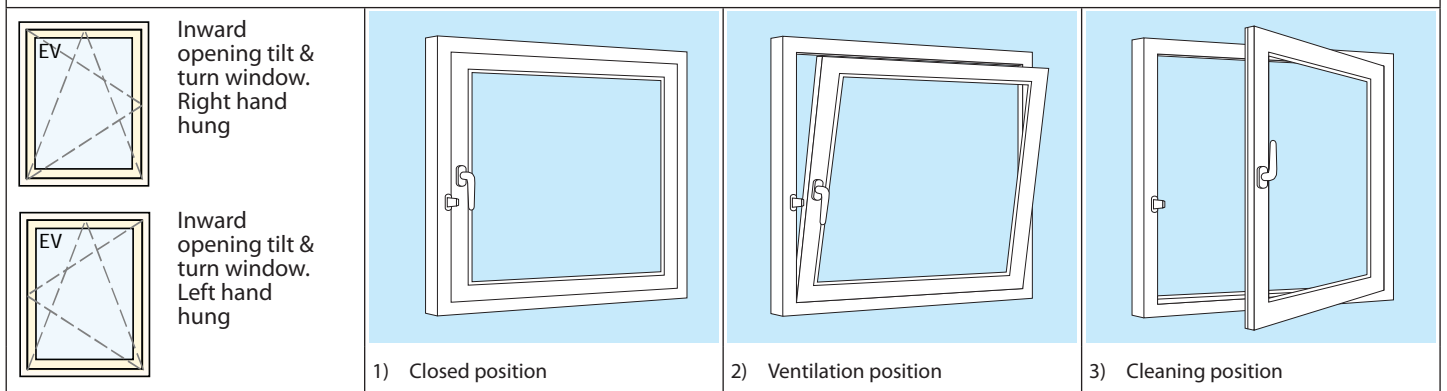
- All illustrations of windows and doors on offer pages are viewed externally.
- A dotted line illustrates an INWARD opening product.
- A solid line illustrates an OUTWARD opening product.
- Opening "arrows" point AWAY from the hinge position.
- Product handings are described from the hinge side of a product.
- Product handings for OUTWARD opening windows are described from the OUTSIDE.
- Product handings for INWARD opening products are described from the INSIDE.

INWARD OPENING WINDOWS

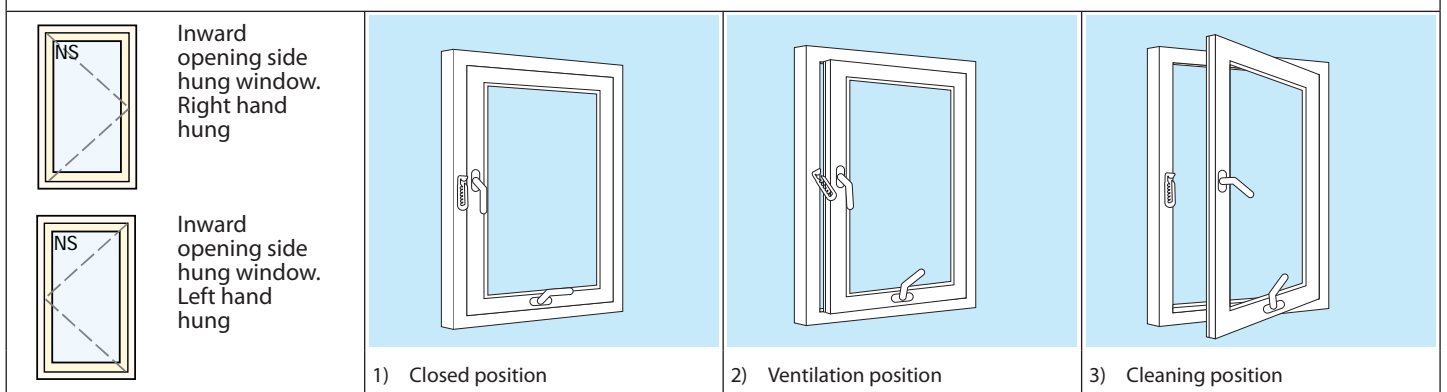
THREE HANDLED TILT & TURN (ND, S3)



ONE HANDED TILT & TURN (EV, S1)



SIDE HUNG (NS)

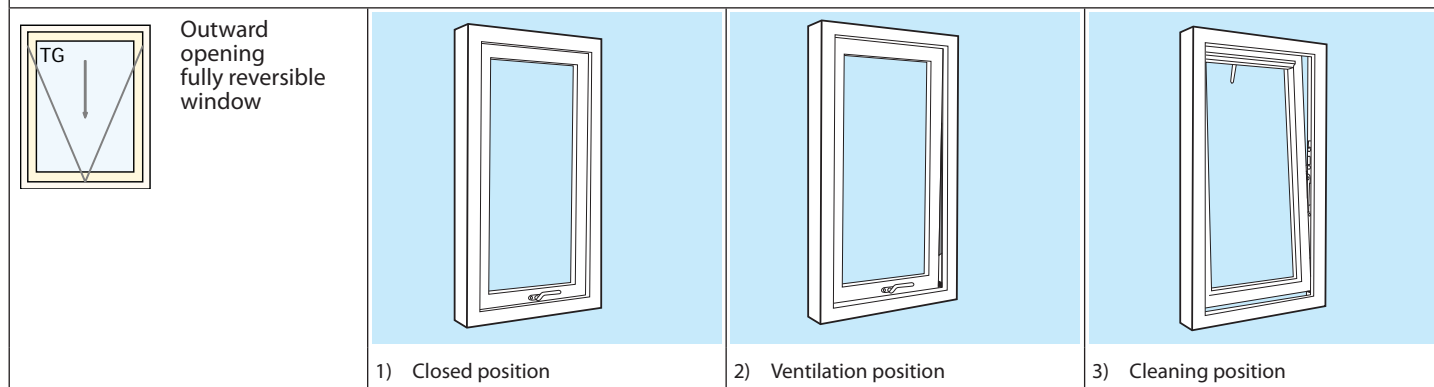


The NorDan inward opening window range includes the choice of 3-handle or 1-handle tilt and turn, and depending on size, 1 or 2-handle side hung. For exceptionally large windows ordered oversize, an additional handle may be fitted.

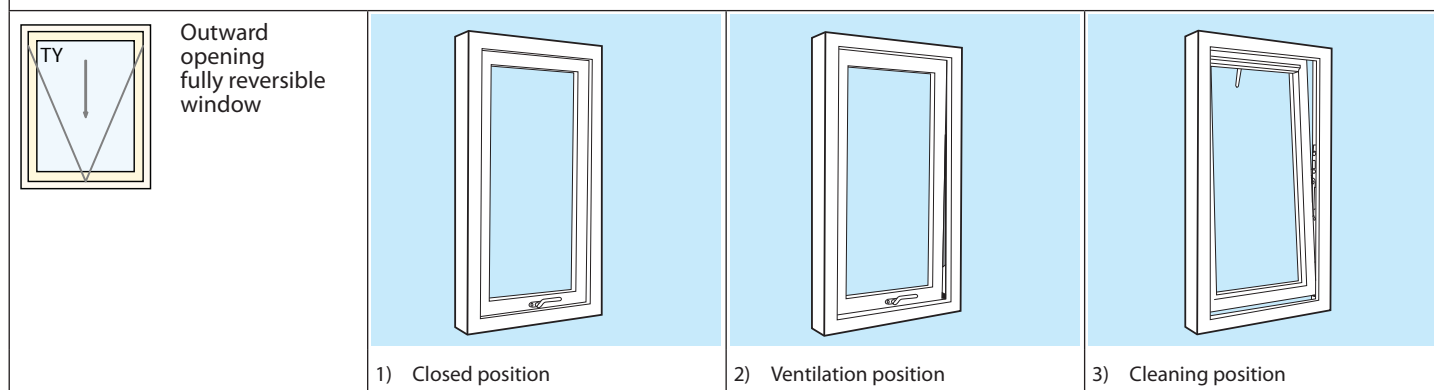
For multi-sash and combination windows (fixed light and opening sash all in one frame), please refer to the appropriate operating instructions for single window operation.

OUTWARD OPENING WINDOWS

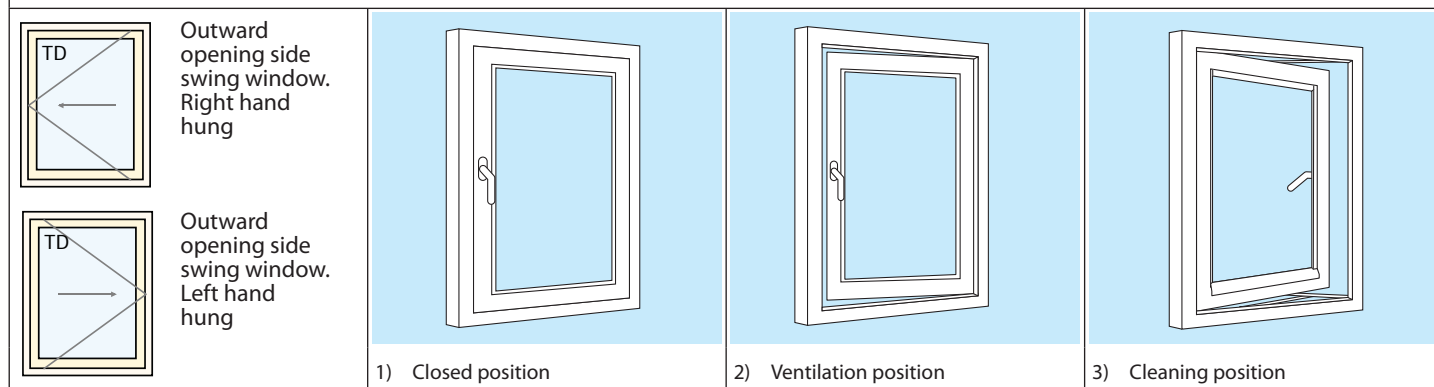
TOP SWING CLASSIC (TG)



TOP SWING OPUS (TY)



SIDE SWING (TD)

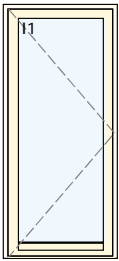
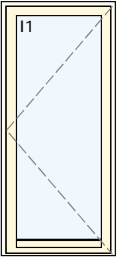
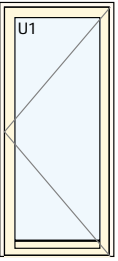
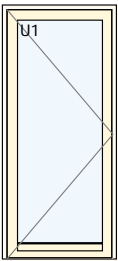


The NorDan outward opening window range includes the top swing and side swing window. To find out which top swing window you have: the classic hinge pivots the sash from above and the opus hinge pivots from below. For exceptionally large windows ordered oversize, an additional handle may be fitted.

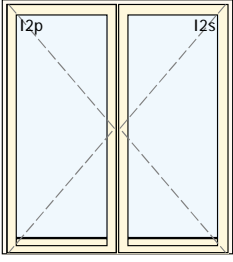
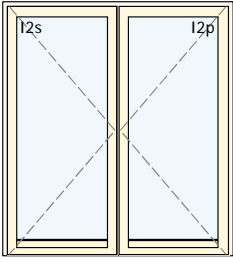
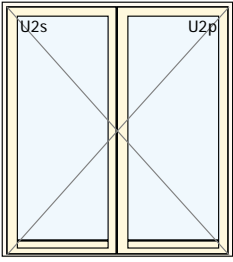
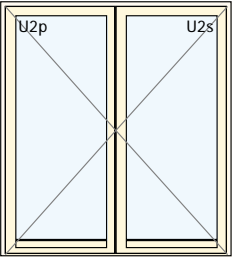
For multi-sash and combination windows (fixed light and opening sash all in one frame), please refer to the appropriate operating instructions for single window operation.

BALCONY AND SLIDING DOORSETS

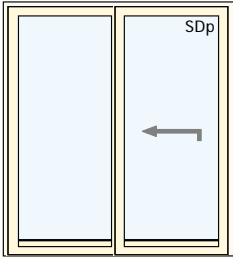
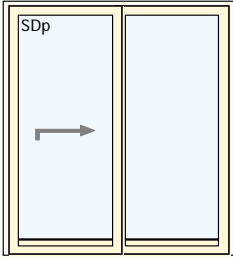
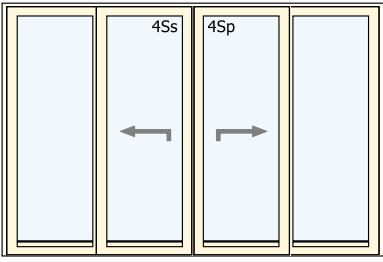
SINGLE BALCONY DOORSETS (I1, U1)

 <p>Inward opening single door. Right hand hung</p>	 <p>Inward opening single door Left hand hung</p>	 <p>Outward opening single door. Right hand hung</p>	 <p>Outward opening single door Left hand hung</p>
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DOUBLE BALCONY DOORSETS (I2, U2)

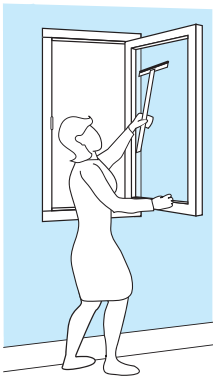
 <p>Inward opening double door, right hand door opening first "p" Indicates primary opening door "s" Indicates secondary opening door</p>	 <p>Inward opening double door, left hand door opening first "p" Indicates primary opening door "s" Indicates secondary opening door</p>	 <p>Outward opening double door, right hand door opening first "p" Indicates primary opening door "s" Indicates secondary opening door</p>	 <p>Outward opening double door, left hand door opening first "p" Indicates primary opening door "s" Indicates secondary opening door</p>
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SLIDING DOORSETS (SD, 4S)

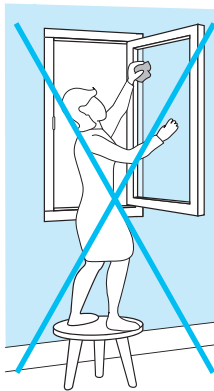
 <p>Sliding door with outside leaf sliding, right hand door slides "p" Indicates primary opening door</p>	 <p>Sliding door with outside leaf sliding, left hand door slides "p" Indicates primary opening door</p>	 <p>Double sliding door with outside leaf sliding, right hand door slides first "p" Indicates primary opening door "s" Indicates secondary opening door</p>
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OPERATION & MAINTENANCE



ACT SAFELY



THINK SAFETY

Regardless of what material windows and doors are made from, or how they operate, there are general safety recommendations designed to avoid accidents.

CLEANING

- OPEN, CLEAN AND CLOSE- WITHOUT ANY INTERRUPTION!
- When preparing to clean a window ensure you can start and finish without distraction from visitors, children, phone calls etc
- Always choose a calm and dry day
- Never climb on steps or furniture to clean a window
- Never lean out of a window or over-reach when stretching up to the top. Use a squeegee on a pole that is as long as needed to do the cleaning safely, with both feet on the floor

OPERATING

- Only use window handle(s) when opening and closing, and always make sure your other hand, and other people's hands, will not get trapped in any of the sides of the window sash (bottom, sides and top).
- Never open outward opening windows on ground floors so much so that there is a risk of passers by colliding into it.

TAKE NOTE

- Many types of reversible outward opening window ironmongery include a "scissor" type action. To avoid the risk of injury never encroach the ironmongery with a finger or hand!
- Never leave a window in a fully open, or a reversed cleaning position- not even for a second! Apart from inviting unwelcome guests, there is also the danger of anything falling out. Always use the recommended ventilation position for day-to-day operation.
- Close all windows and doors in strong winds.

LUBRICANT

NorDan recommend 'Würth HHS 5000' (fully-synthetic creep oil with PTFE) or similar for lubrication of ironmongery. Care should be taken to avoid contact with timber to avoid staining.

GOOD PRACTICE

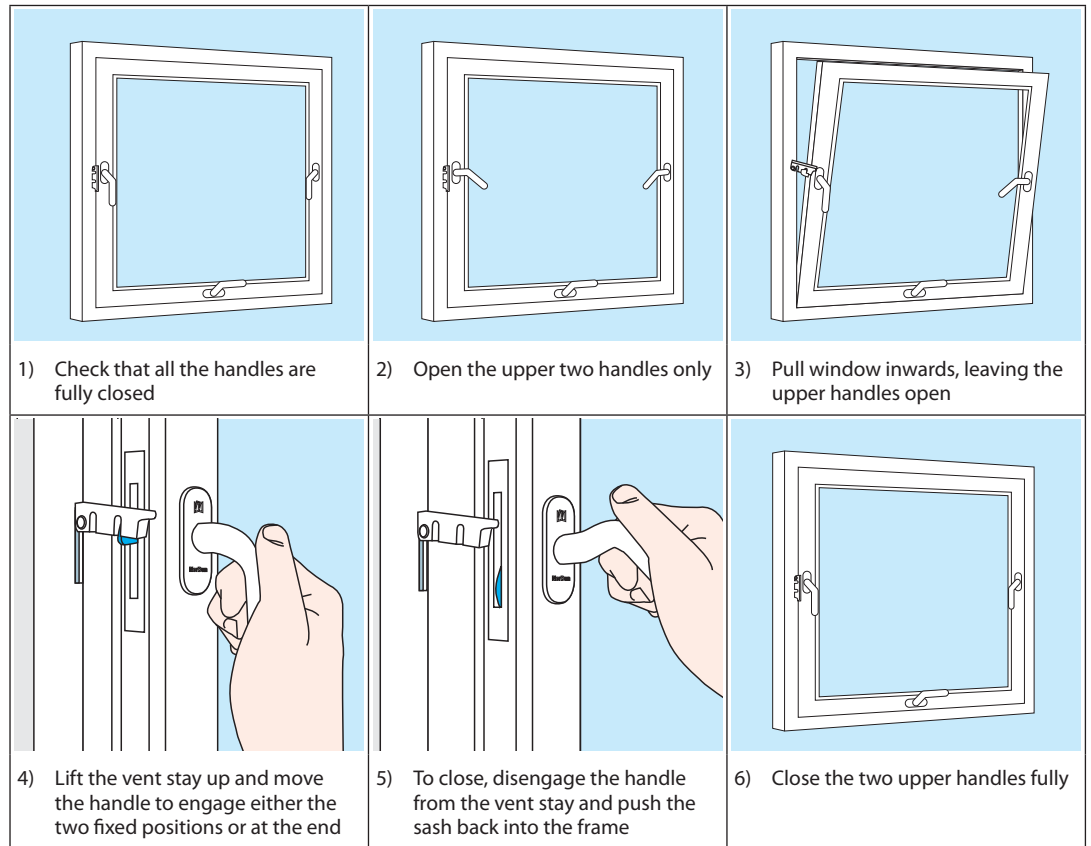
Always close a window or door when it is raining to protect its surface and finish. If not observed, the frame may swell and cause difficulty in closing. This is not only hazardous, but also a common cause of damage to internal finishings.

THREE HANDLED TILT & TURN (ND, S3)

VENTILATION POSITION

For improved comfort, engage the vent stay when the window is in the ventilation position. This is located on the frame.

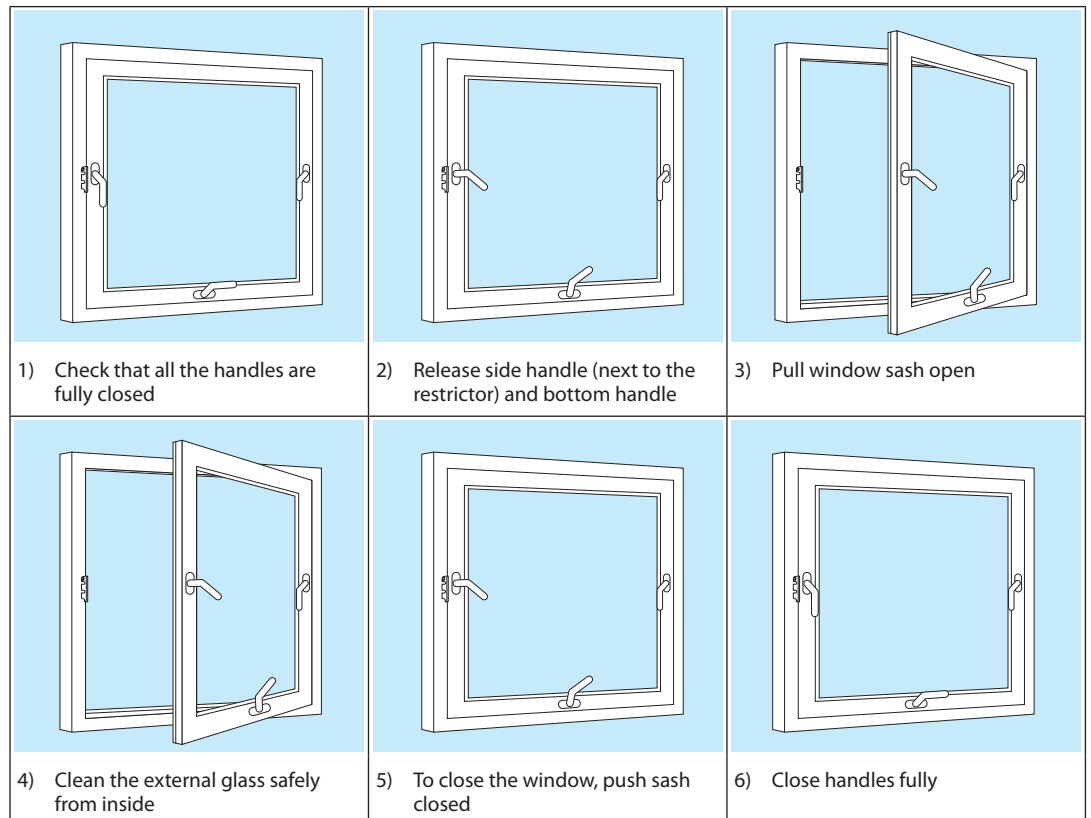
NOTE: Not all vent stay positions are possible with certain window heights



CLEANING POSITION

In the interest of safety, do not use windows in the cleaning position for ventilation purposes. When cleaning, ensure that open windows are not left unattended and that the operation is carried out safely. Ensure that child safety restrictors are re-engaged (if applicable) when closing the window.

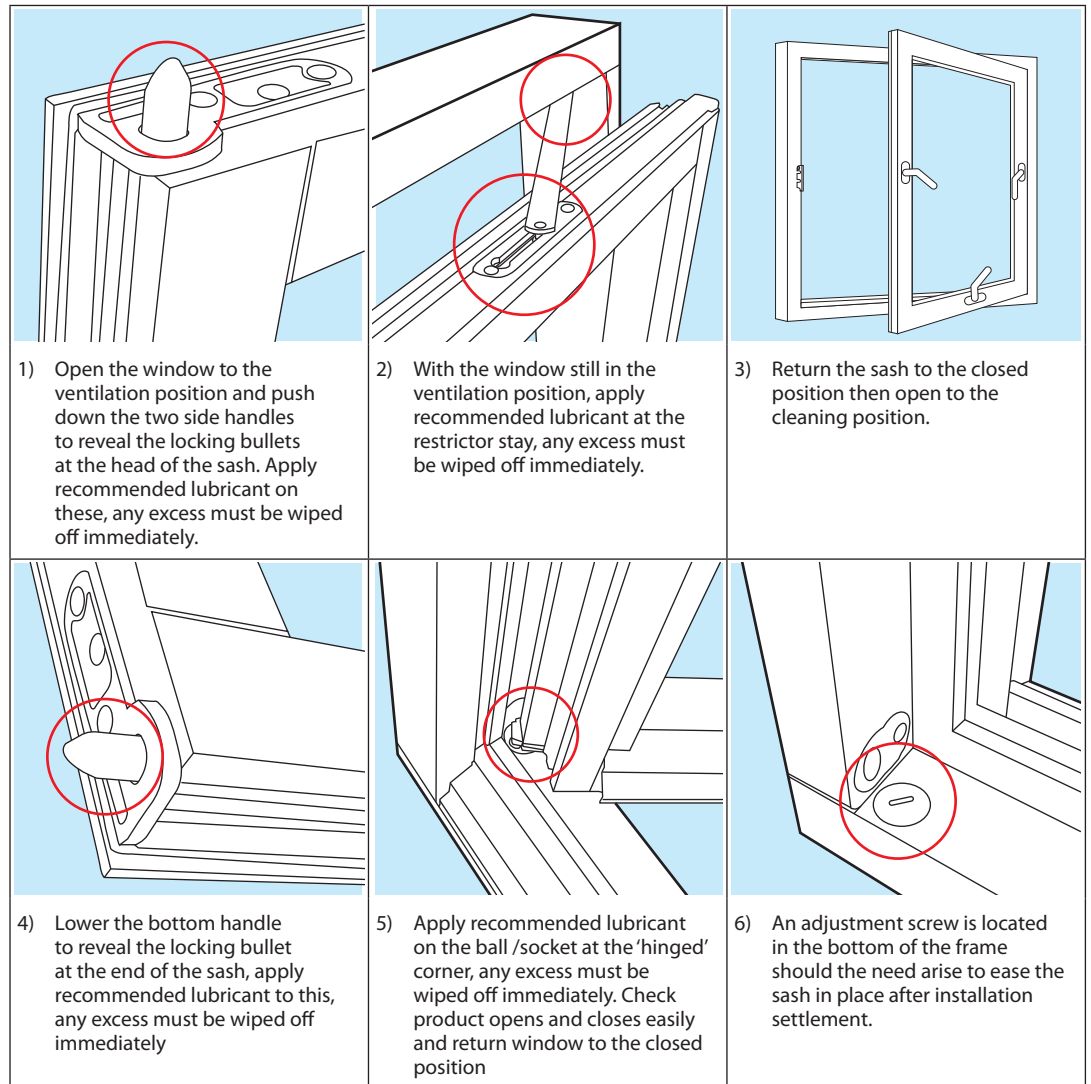
NOTE: Approximate opening is 67°, more than adequate to clean both sides of the window from the inside.



THREE HANDLED TILT & TURN (ND, S3)

MAINTENANCE

Ensure the window is maintained regularly, following the standard guidelines.



Maintaining your NorDan windows couldn't be simpler. All you have to do is check them carefully at least once a year for the following signs:

- Look for (and remove) any airborne debris that might be trapped in between the frame and sash. To do this open the window in the cleaning position
- Wipe or brush clean all surfaces and check the weather seal is clean, dry, continuous and undamaged. Never get any paint on the weatherseal as this will reduce the window's performance
- Check that the handles move freely and smoothly. If they are stiff, carefully use a recommended lubricant on the locking tongues/bolts while in their extended position
- Check the glass does not have any water vapour inside the sealed unit or that the glass is damaged
- Check all timber surfaces for damage and note if the finishing (paint etc) needs refreshing
- Check all handles and ventilator controls are not loose. If they are then tighten them with an appropriate screwdriver.

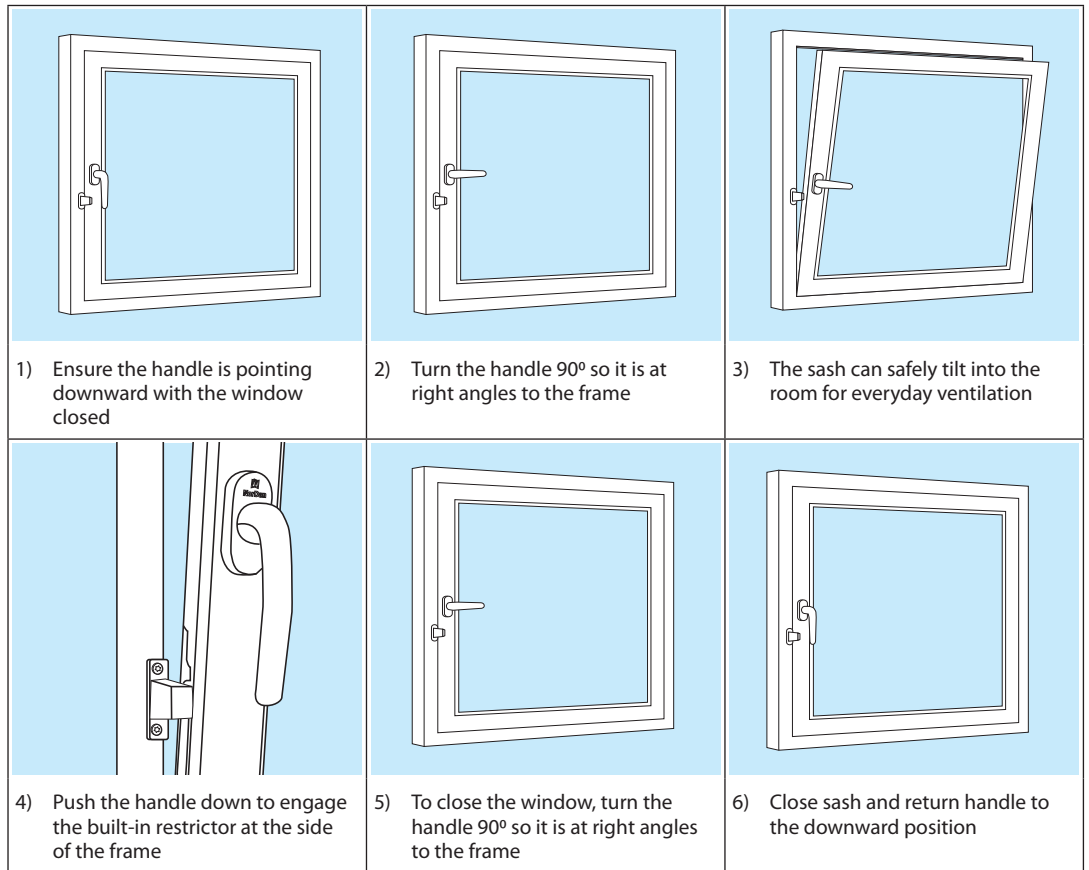
Tighten enough so the handles and controls work freely without being too loose. Do not overtighten

If in any doubt or you need help with anything to do with maintenance call your nearest NorDan sales office as featured on the back of this leaflet.

ONE HANDED TILT & TURN (EV)

VENTILATION POSITION

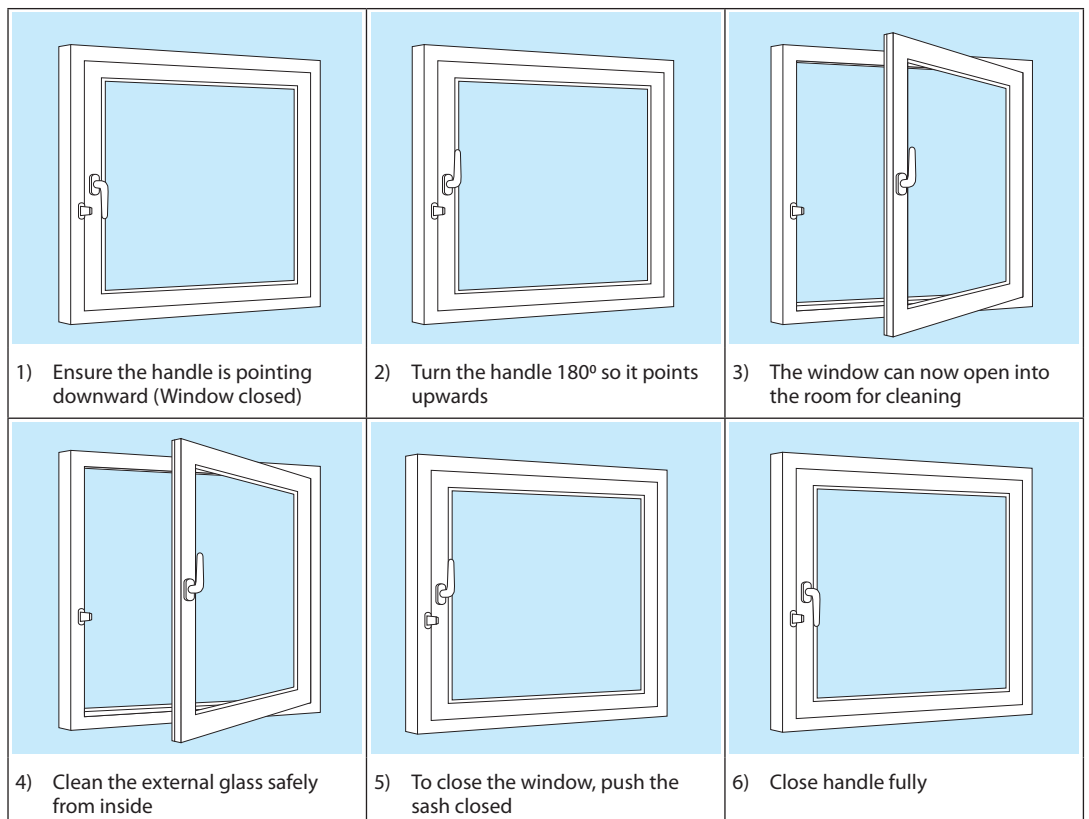
For improved safety, engage the night vent stay when the window is in the ventilation position. This is located on the frame.



CLEANING POSITION

In the interest of safety, do not use windows in the cleaning position for ventilation purposes. When cleaning, ensure that open windows are not left unattended and that the operation is carried out safely. Ensure that child safety restrictors are re-engaged (if applicable) when closing the window.

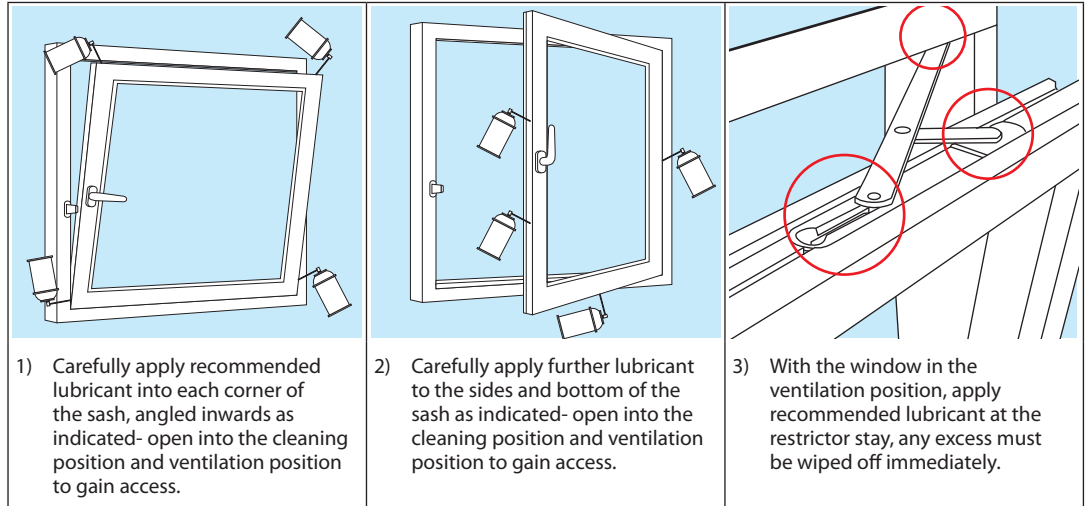
Note: Approximate opening is 90°, more than adequate to clean both sides of the window from the inside.



ONE HANDED TILT & TURN (EV)

MAINTENANCE

Ensure the window is maintained regularly, following the standard guidelines



Maintaining your NorDan windows couldn't be simpler. All you have to do is check them carefully at least once a year for the following signs:

- Look for (and remove) any airborne debris that might be trapped in between the frame and sash. To do this open the window in the cleaning position
- Wipe or brush clean all surfaces and check the weather seal is clean, dry, continuous and undamaged. Never get any paint on

the weatherseal as this will reduce the window's performance

- Check that the handle moves freely and smoothly. If they are stiff, carefully use a recommended lubricant on the locking tongues/bolts while in their extended position
- Check the glass does not have any water vapour inside the sealed unit or that the glass is damaged.
- Check all timber surfaces for damage and note if the finishing (paint etc) needs

refreshing

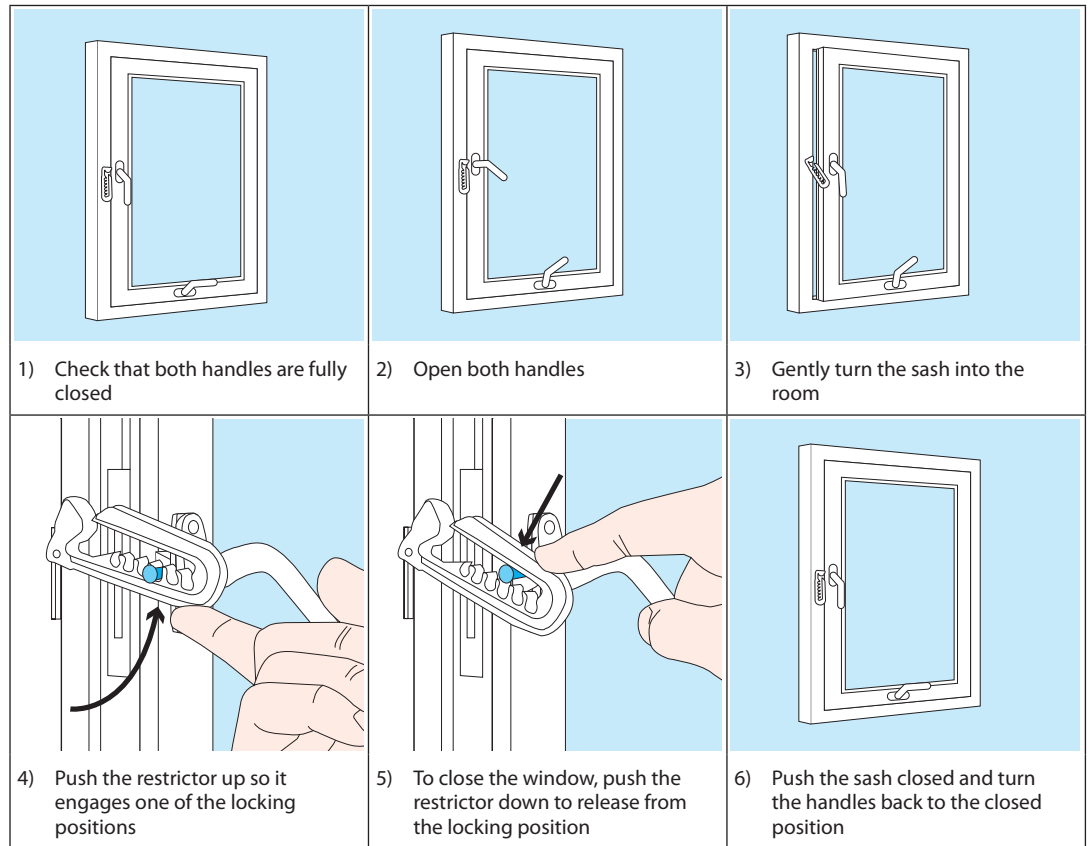
- Check the handle and ventilator controls are not loose. If they are then tighten them with an appropriate screwdriver. Tighten enough so the handles and controls work freely without being too loose. Do not overtighten

If in any doubt or you need help with anything to do with maintenance call your nearest NorDan sales office as featured on the back of this leaflet.

SIDE HUNG (NS)

VENTILATION POSITION

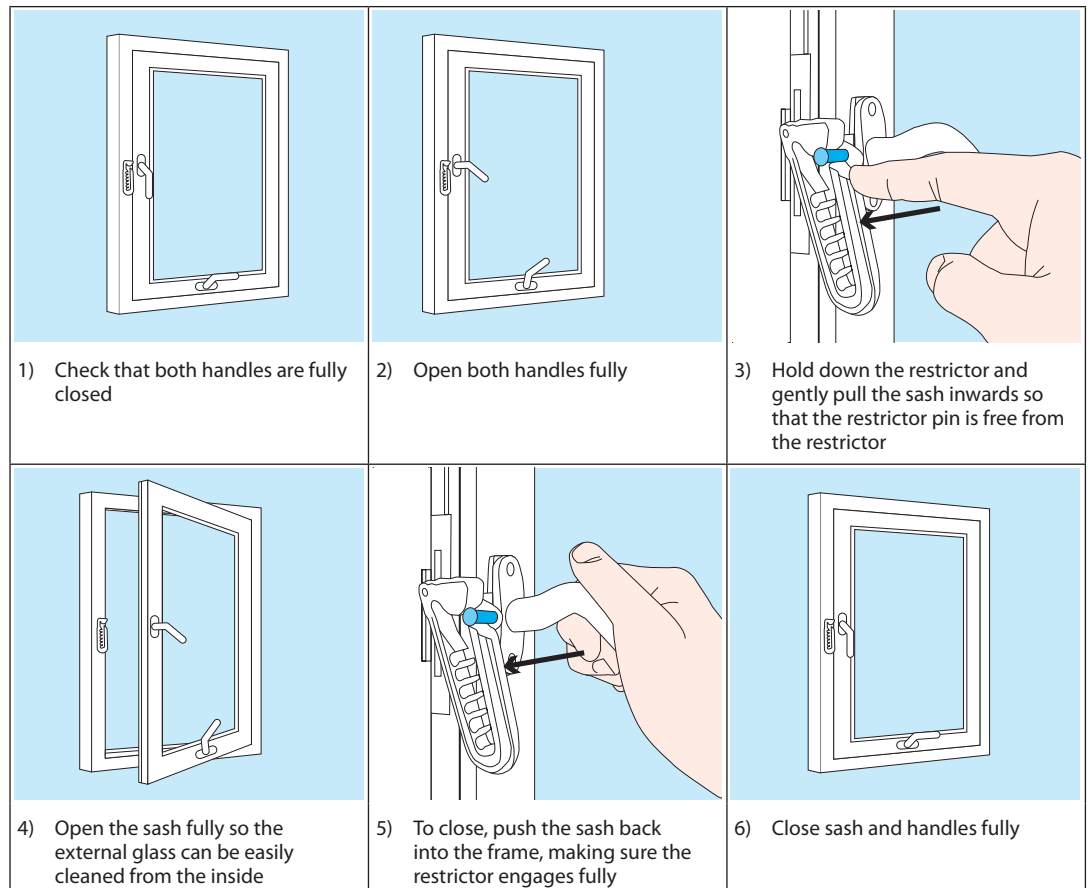
For improved safety, engage the restrictor when the window is in the ventilation position. This is located on the frame.



CLEANING POSITION

In the interest of safety, do not use windows in the cleaning position for ventilation purposes. Always ensure that child safety restrictors are re-engaged when closing the window.

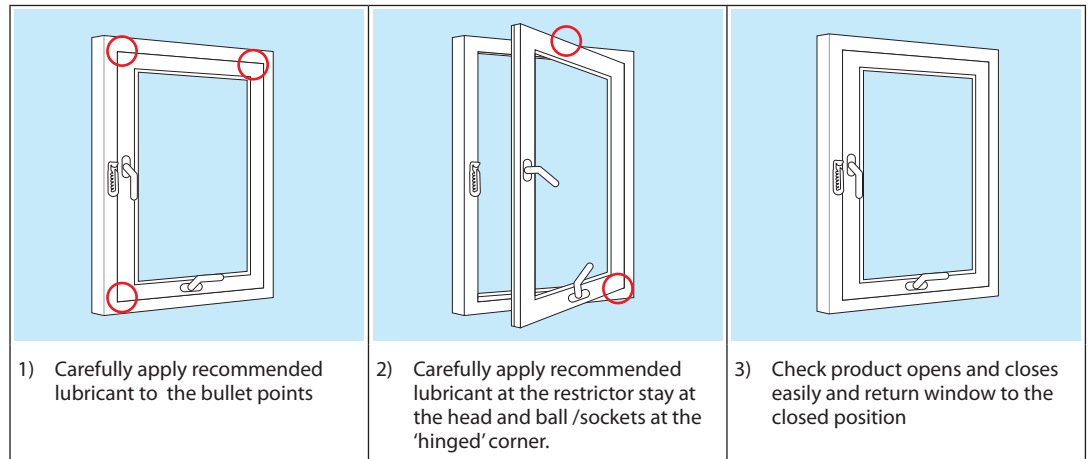
Note: Approximate opening is 90°, more than adequate to clean both sides of the window from the inside.



SIDE HUNG (NS)

MAINTENANCE

Ensure the window is maintained regularly, following the standard guidelines



Maintaining your NorDan windows couldn't be simpler. All you have to do is check them carefully at least once a year for the following signs:

- Look for (and remove) any airborne debris that might be trapped in between the frame and sash. To do this open the window in the cleaning position
- Wipe or brush clean all surfaces and check the weather seal is clean, dry, continuous and undamaged. Never get any paint on the weatherseal as this will reduce the window's performance
- Check that the handles move freely and smoothly. If they are stiff, carefully use a recommended lubricant on the locking tongues/bolts while in their extended position
- Check the glass does not have any water vapour inside the sealed unit or that the glass is damaged.
- Check all timber surfaces for damage and note if the finishing (paint etc) needs refreshing
- Check all handles and ventilator controls are not loose. If they are then tighten them with an appropriate screwdriver.

Tighten enough so the handles and controls work freely without being too loose. Do not overtighten

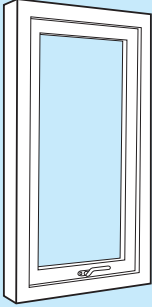
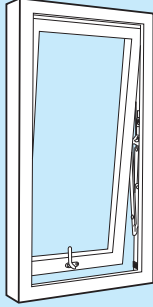
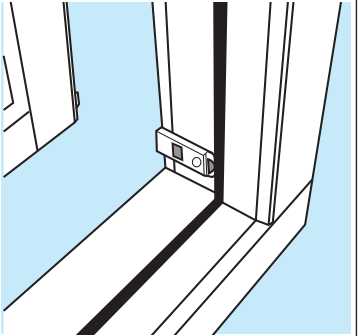
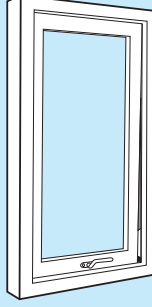
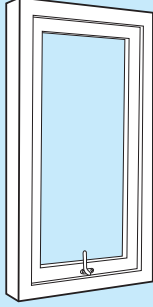
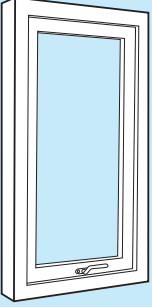
If in any doubt or you need help with anything to do with maintenance call your nearest NorDan sales office as featured on the back of this leaflet.

TOP SWING OPUS (TY)

VENTILATION POSITION

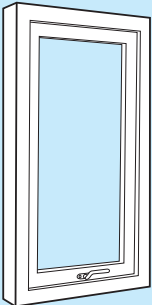
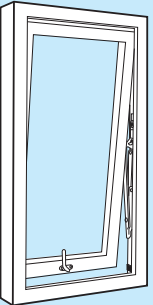
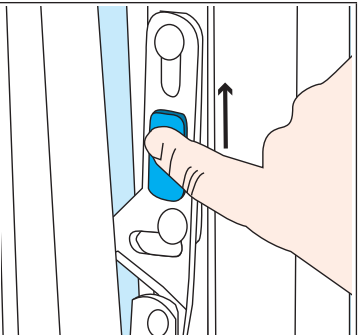
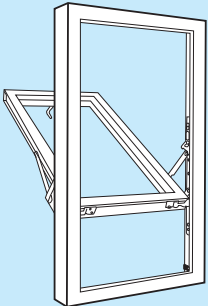
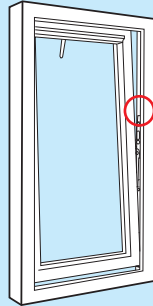
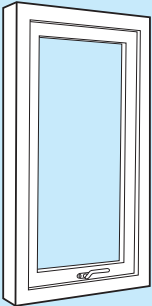
For improved safety, engage the restrictor when the window is in the ventilation position. This is located on the frame.

Never leave open windows unattended even in the night vent safety position as no open window is fully secure.

		
<p>1) Check the sash is flush with the frame and the handle is fully closed</p>	<p>2) Turn the handle upwards and push the sash outwards, the restrictor stops the sash opening fully.</p>	<p>3) Locate the night vent stay position in the frame</p>
		
<p>4) Line up the sash to the night vent position and turn the handle to the closed position, check that the sash is held in place</p>	<p>5) To close the window fully, open the handle and pull the sash fully back into the frame</p>	<p>6) Turn the handle to the closed position</p>

CLEANING POSITION

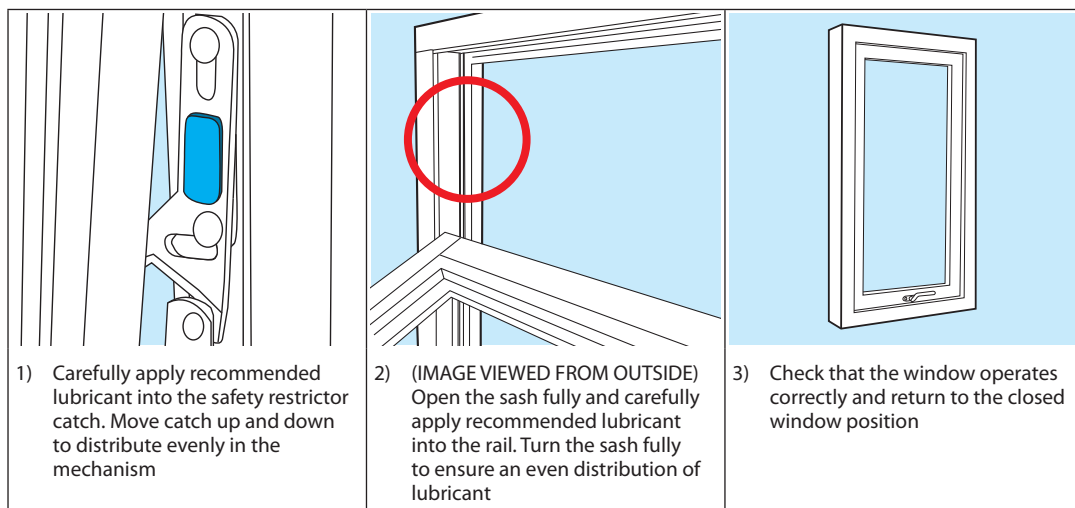
In the interest of safety, do not use windows in the cleaning position for ventilation purposes.

		
<p>1) Turn the handle fully into the open position</p>	<p>2) Push the sash outwards to the fixed safety locking position</p>	<p>3) Slide the safety restrictor lock upwards (located in the side of the frame) and gently push the window sash outwards</p>
		
<p>4) Continue to gently push the sash outwards until it is fully reversed and locks securely in the cleaning position</p>	<p>5) After cleaning, push the safety restrictor up to release the cleaning lock and carefully return the sash to the closed position</p>	<p>6) Push the sash back into the frame and close the handle fully</p>

TOP SWING OPUS (TY)

MAINTENANCE

Ensure the window is maintained regularly, following the standard guidelines



Maintaining your NorDan windows couldn't be simpler. All you have to do is check them carefully at least once a year for the following signs:

- Look for (and remove) any airborne debris that might be trapped in between the frame and sash. To do this open the window in the cleaning position
- Wipe or brush clean all surfaces and check the weather seal is clean, dry, continuous and undamaged. Never get any paint on the weatherseal as this will reduce the window's performance
- Check that the handle moves freely and smoothly. If they are stiff, carefully use a recommended lubricant on the locking tongues/bolts while in their extended position
- Check the glass does not have any water vapour inside the sealed unit or that the glass is damaged
- Check all timber surfaces for damage and note if the finishing (paint etc) needs refreshing
- Check all handle and ventilator controls are not loose. If they are then tighten them with an appropriate screwdriver.

Tighten enough so the handles and controls work freely without being too loose. Do not overtighten

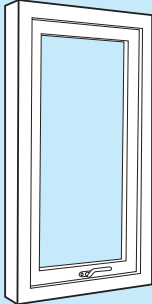
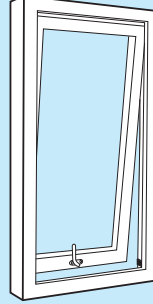
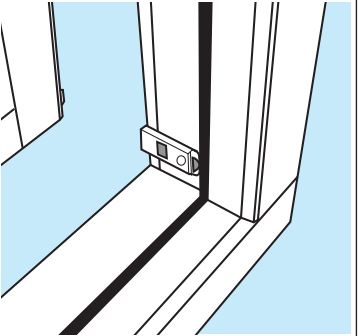
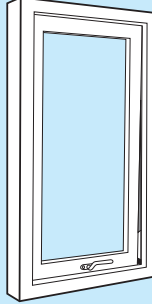
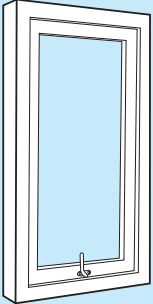
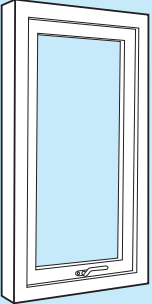
If in any doubt or you need help with anything to do with maintenance call your nearest NorDan sales office as featured on the back of this leaflet.

TOP SWING CLASSIC (TG) PRE 2013

VENTILATION POSITION

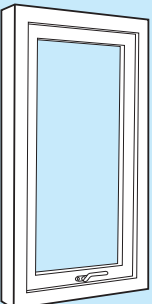
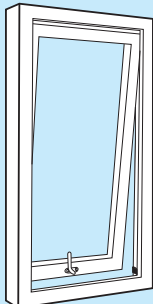
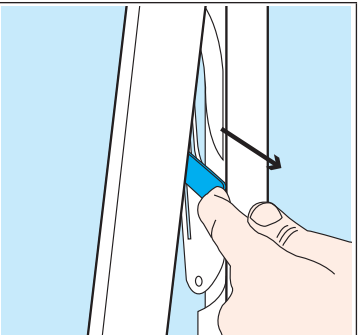
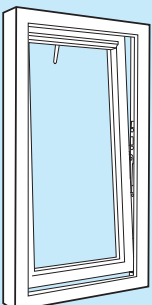
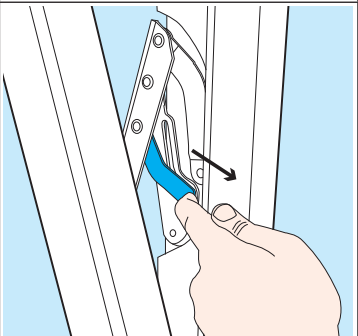
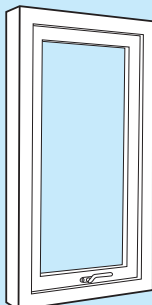
For improved safety, engage the restrictor when the window is in the ventilation position. This is located on the frame.

Never leave open windows unattended even in the night vent safety position as no open window is fully secure.

		
<p>1) Check the window is fully closed and the handle is engaged</p>	<p>2) Turn the handle upwards and push the sash outwards, the restrictor stops the sash opening fully</p>	<p>3) Locate the vent stay position in the frame</p>
		
<p>4) Line up the sash to the vent position in the frame and turn the handle, check that the sash is held in place</p>	<p>5) To close the window fully, open the handle and pull the sash fully back into the frame</p>	<p>6) Turn the handle to the closed position</p>

CLEANING POSITION

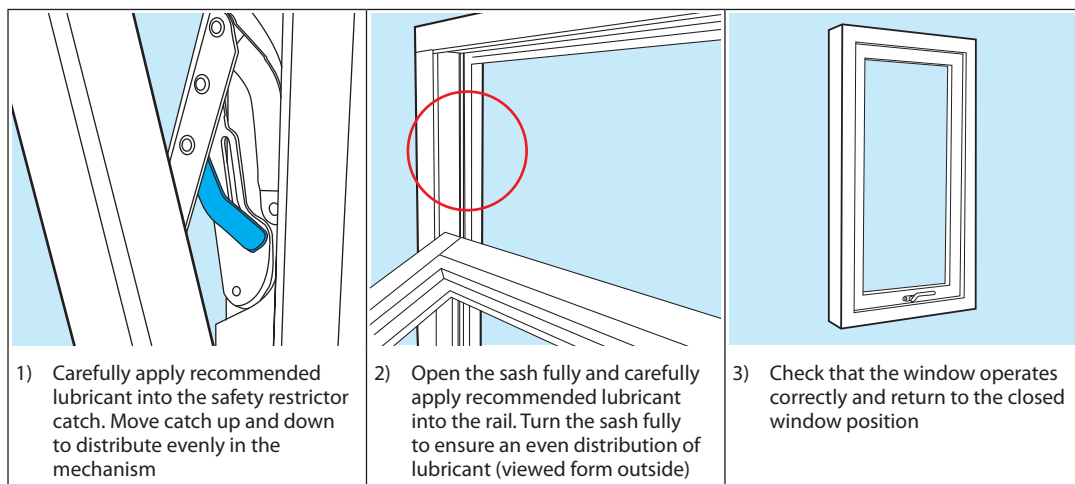
In the interest of safety, do not use windows in the cleaning position for ventilation purposes.

		
<p>1) Turn the handle fully into the open position</p>	<p>2) Push the sash outwards to the fixed safety locking position</p>	<p>3) Slide the safety restrictor lock towards you (located in the side of the frame) and gently push the window sash outwards</p>
		
<p>4) Continue to gently push the sash outwards until it is fully reversed and locks securely in the cleaning position</p>	<p>5) After cleaning, disengage the safety restrictor and carefully return the sash to the closed position</p>	<p>6) Push the sash back into the frame and close the handle fully</p>

TOP SWING CLASSIC (TG) PRE 2013

MAINTENANCE

Ensure the window is maintained regularly, following the standard guidelines



Maintaining your NorDan windows couldn't be simpler. All you have to do is check them carefully at least once a year for the following signs:

- Look for (and remove) any airborne debris that might be trapped in between the frame and sash. To do this open the window in the cleaning position
- Wipe or brush clean all surfaces and check the weather seal is clean, dry, continuous and undamaged. Never get any paint on the weatherseal as this will reduce the window's performance

- Check that the handle moves freely and smoothly. If they are stiff, carefully use a recommended lubricant on the locking tongues/bolts while in their extended position
- Check the glass does not have any water vapour inside the sealed unit or that the glass is damaged.
- Check all timber surfaces for damage and note if the finishing (paint etc) needs refreshing
- Check all handle and ventilator controls are not loose. If they are then tighten them with an appropriate screwdriver.

Tighten enough so the handles and controls work freely without being too loose. Do not overtighten

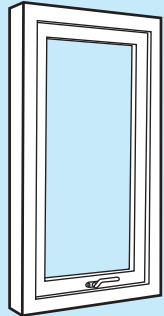
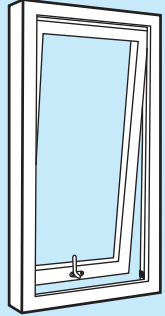
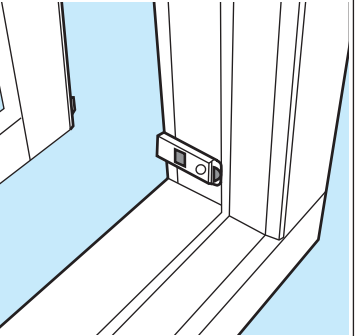
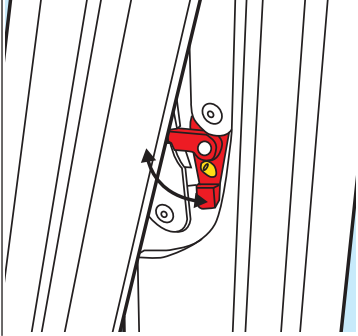
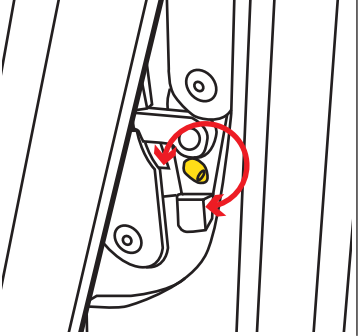
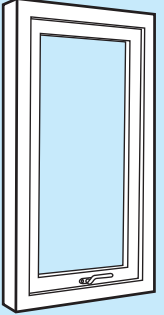
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TOP SWING CLASSIC (TG) 2013 ONWARDS

VENTILATION POSITION

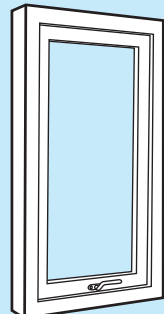
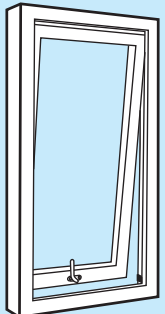
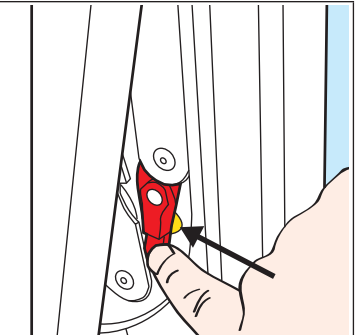
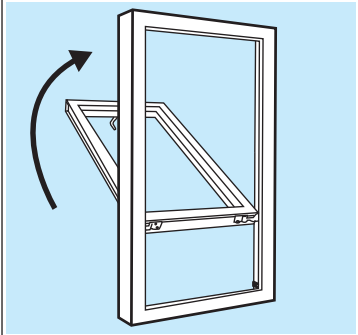
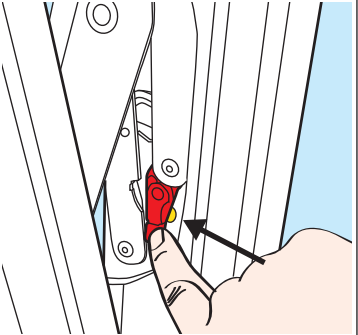
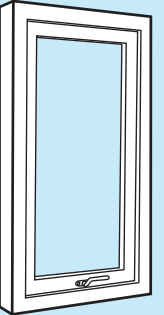
For improved safety, engage the restrictor when the window is in the ventilation position. This is located on the frame.

Never leave open windows unattended even in the night vent safety position as no open window is fully secure.

		
<p>1) Check the sash is flush with the frame and the handle is fully closed</p>	<p>2) Turn the handle upwards and push the sash outwards, the restrictor stops the sash opening fully.</p>	<p>3) Locate the vent stay position in the frame, line up the sash and turn the handle.</p>
		
<p>4) The window is fitted with an anti blow-back device which can be activated and de-activated by pushing the small lock out and back as shown</p>	<p>5) To activate the additional restrictor control which restricts the sash from opening, turn the yellow control clockwise 180° with a screwdriver.</p>	<p>6) To close the window fully, open the handle and pull the sash fully back into the frame. Turn the handle to the closed position</p>

CLEANING POSITION

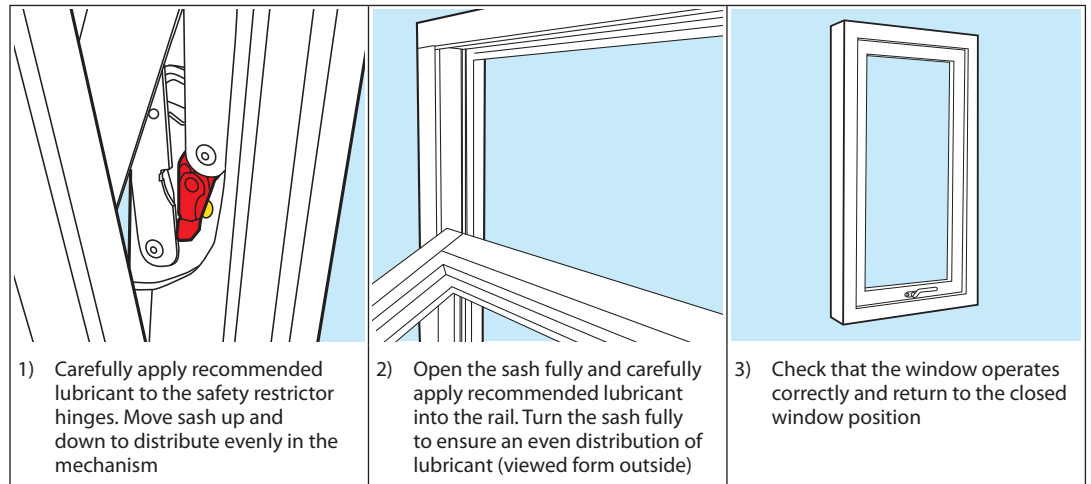
In the interest of safety, do not use windows in the cleaning position for ventilation purposes.

		
<p>1) Turn the handle fully into the open position</p>	<p>2) Push the sash outwards to the fixed safety locking position</p>	<p>3) Push safety restrictor lock away from you (located in the side of the frame) and gently push the window sash outwards</p>
		
<p>4) Continue to gently manoeuvre the sash outwards until it is fully reversed and locks securely in the cleaning position</p>	<p>5) After cleaning, disengage the safety restrictor by pushing the lock away from you and carefully return the sash to the closed position</p>	<p>6) Push the sash back into the frame and close the handle fully</p>

TOP SWING CLASSIC (TG) 2013 ONWARDS

MAINTENANCE

Ensure the window is maintained regularly, following the standard guidelines



Maintaining your NorDan windows couldn't be simpler. All you have to do is check them carefully at least once a year for the following signs:

- Look for (and remove) any airborne debris that might be trapped in between the frame and sash. To do this open the window in the cleaning position
- Wipe or brush clean all surfaces and check the weather seal is clean, dry, continuous and undamaged. Never get any paint on

the weatherseal as this will reduce the window's performance

- Check that the handle moves freely and smoothly. If they are stiff, carefully use a recommended lubricant on the locking tongues/bolts while in their extended position
- Check the glass does not have any water vapour inside the sealed unit or that the glass is damaged.
- Check all timber surfaces for damage and note if the finishing (paint etc) needs

refreshing

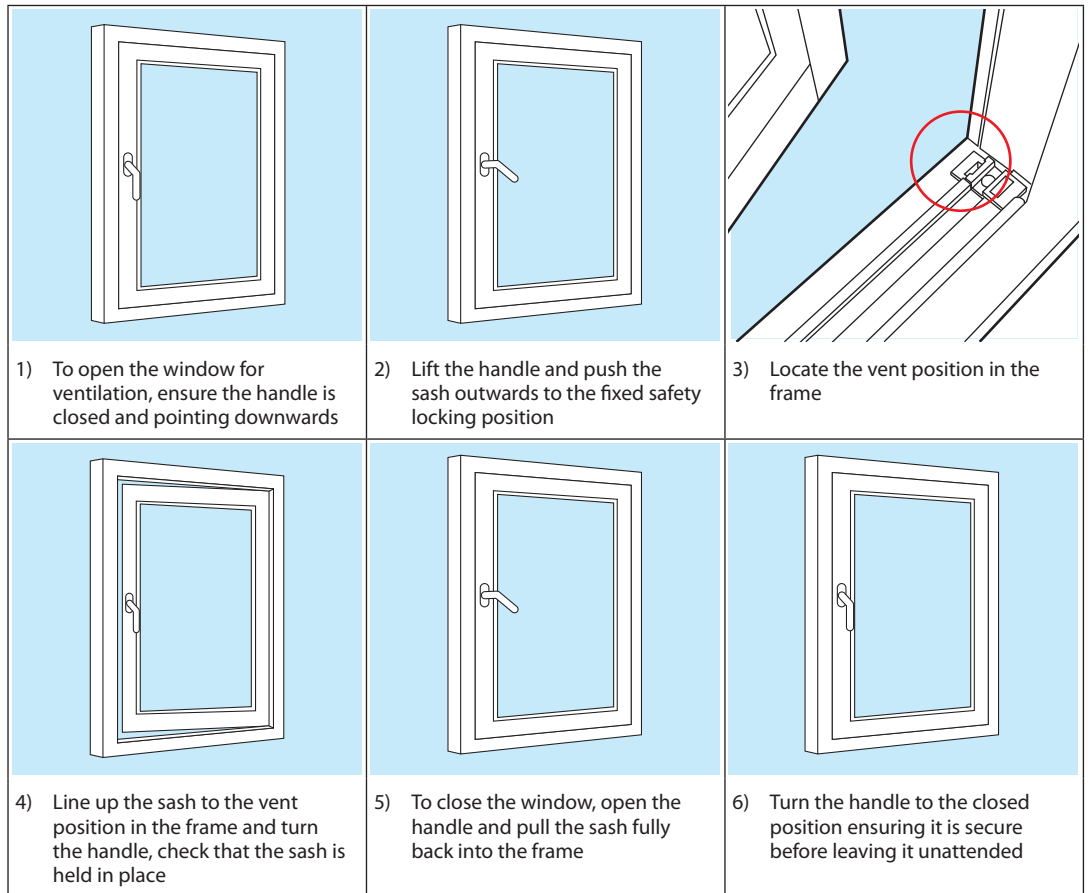
- Check all handle and ventilator controls are not loose. If they are then tighten them with an appropriate screwdriver. Tighten enough so the handles and controls work freely without being too loose. Do not overtighten

If in any doubt or you need help with anything to do with maintenance call your nearest NorDan sales office as featured on the back of this leaflet.

SIDE SWING (TD) NON-CLAD

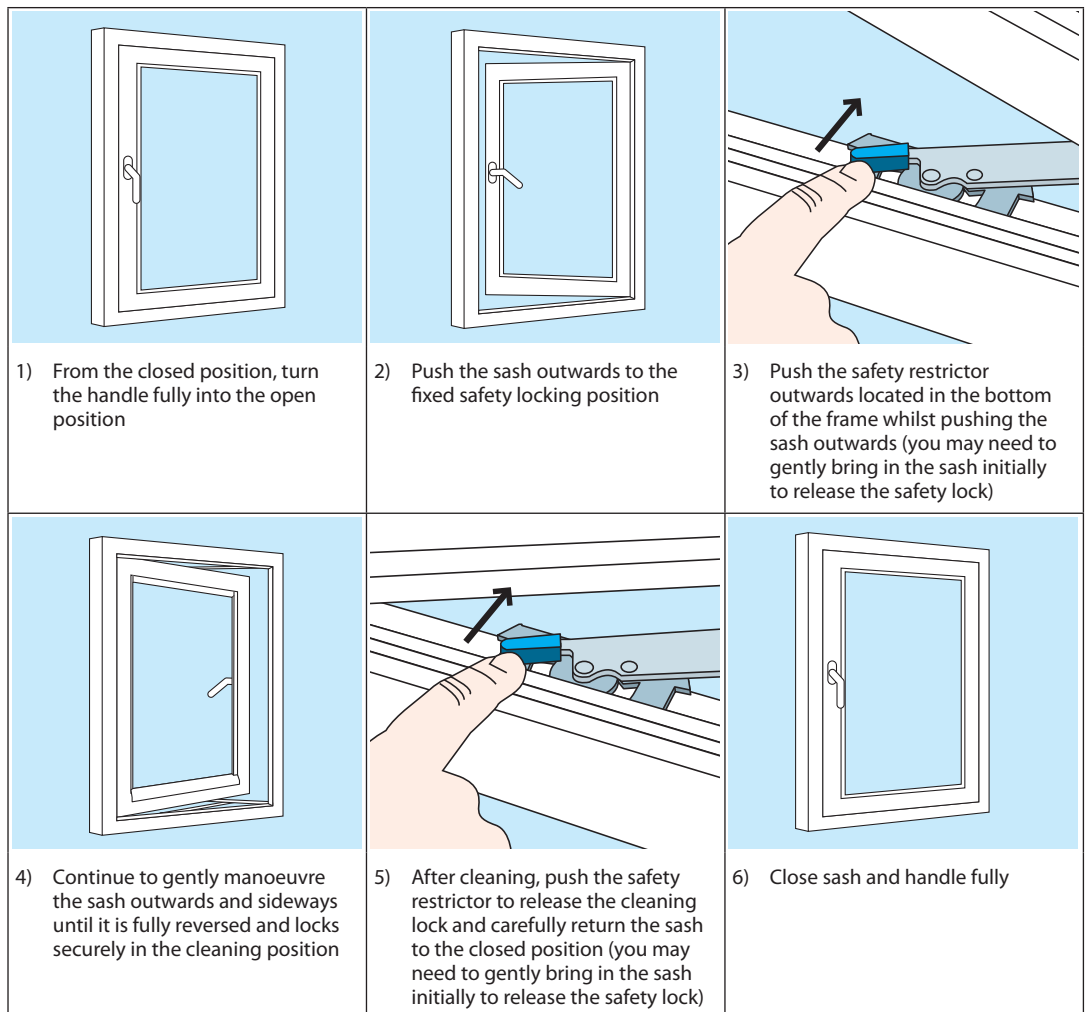
VENTILATION POSITION

For improved safety, engage the restrictor when the window is in the ventilation position. This is located on the frame.



CLEANING POSITION

In the interest of safety, do not use windows in the cleaning position for ventilation purposes.



SIDE SWING (TD) NON-CLAD

MAINTENANCE

Maintaining your NorDan windows couldn't be simpler. All you have to do is check them carefully at least once a year for the following signs:

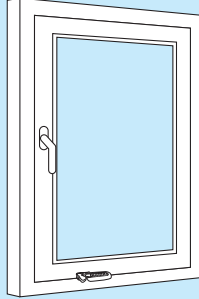
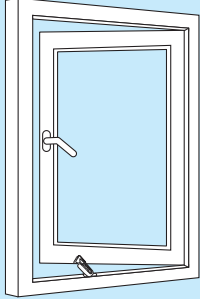
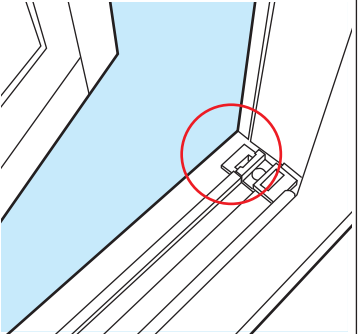
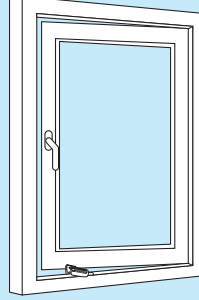
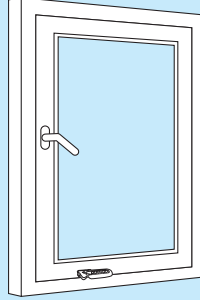
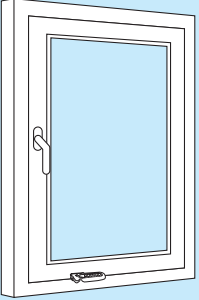
- Look for (and remove) any airborne debris that might be trapped in between the frame and sash. To do this open the window in the cleaning position
- Wipe or brush clean all surfaces and check the weather seal is clean, dry, continuous and undamaged. Never get any paint on the weatherseal as this will reduce the window's performance
- Check that the handle moves freely and smoothly. If they are stiff, apply recommended lubricant on the locking tongues/bolts while in their extended position
- Check the glass does not have any water vapour inside the sealed unit or that the glass is damaged.
- Check all timber surfaces for damage and note if the finishing (paint etc) needs refreshing
- Check all handle and ventilator controls are not loose. If they are then tighten them with an appropriate screwdriver. Tighten enough so the handles and controls work freely without being too loose. Do not overtighten

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SIDE SWING (TD) ALUMINIUM CLAD

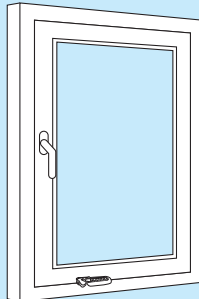
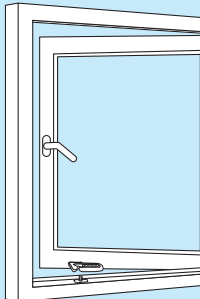
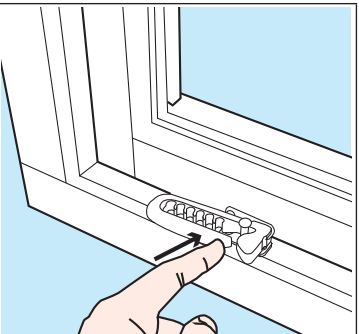
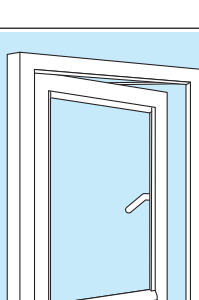
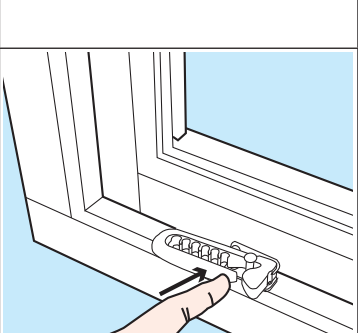
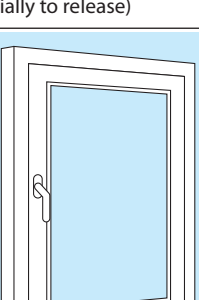
VENTILATION POSITION

For improved safety, engage the restrictor when the window is in the ventilation position. This is located on the frame.

		
<p>1) To open the window for ventilation, ensure the handle is closed and pointing downwards</p>	<p>2) Lift the handle and push the sash outwards to the fixed safety locking position</p>	<p>3) Locate the vent position in the frame</p>
		
<p>4) Line up the sash to the vent position in the frame and turn the handle, check that the sash is held in place</p>	<p>5) To close the window, open the handle and pull the sash fully back into the frame</p>	<p>6) Turn the handle to the closed position ensuring it is secure before leaving it unattended</p>

CLEANING POSITION

In the interest of safety, do not use windows in the cleaning position for ventilation purposes.

		
<p>1) From the closed position, turn the handle fully into the open position</p>	<p>2) Push the sash outwards to the fixed safety locking position</p>	<p>3) Hold down the safety restrictor so that the hook at the bottom of the sash is free to move (you may need to gently bring in the sash initially to release)</p>
		
<p>4) Continue to gently push the sash outwards and sideways until it is fully reversed, do not push on the sash while cleaning</p>	<p>5) After cleaning, carefully return the sash to the closed position ensuring the safety restrictor is engaged</p>	<p>6) Close sash and handle fully</p>

SIDE SWING (TD) ALUMINIUM CLAD

MAINTENANCE

Maintaining your NorDan windows couldn't be simpler. All you have to do is check them carefully at least once a year for the following signs:

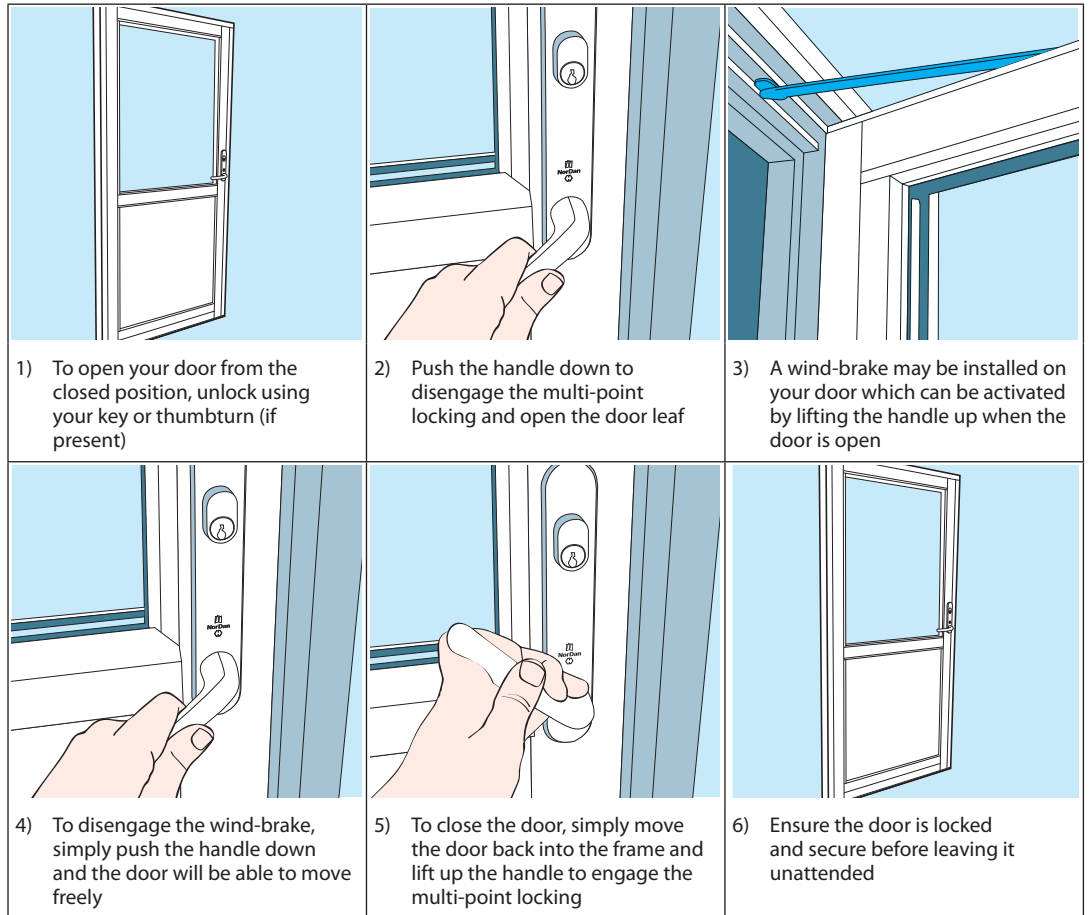
- Look for (and remove) any airborne debris that might be trapped in between the frame and sash. To do this open the window in the cleaning position
- Wipe or brush clean all surfaces and check the weather seal is clean, dry, continuous and undamaged. Never get any paint on the weatherseal as this will reduce the window's performance
- Check that the handle moves freely and smoothly. If they are stiff, carefully use a recommended lubricant on the locking tongues/bolts while in their extended position
- Check the glass does not have any water vapour inside the sealed unit or that the glass is damaged.
- Check all timber surfaces for damage and note if the finishing (paint etc) needs refreshing
- Check all handle and ventilator controls are not loose. If they are then tighten them with an appropriate screwdriver. Tighten enough so the handles and controls work freely without being too loose. Do not overtighten

If in any doubt or you need help with anything to do with maintenance call your nearest NorDan sales office as featured on the back of this leaflet.

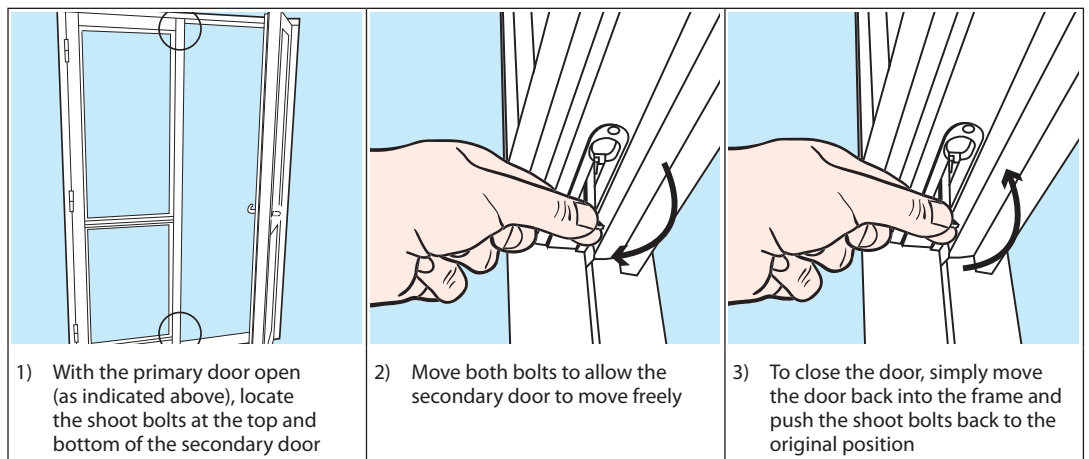
BALCONY DOORS (TE, U1, I1, TX, U2, I2)

OPERATION (SINGLE DOOR)

NOTE: Ensure that you make a note of the reference number on any door keys you have. This is essential information when ordering replacement keys.



OPERATION (DOUBLE DOORS)



BALCONY DOORS (TE, U1, I1, TX, U2, I2)

MAINTENANCE

Ensure the door is maintained regularly, following the standard guidelines

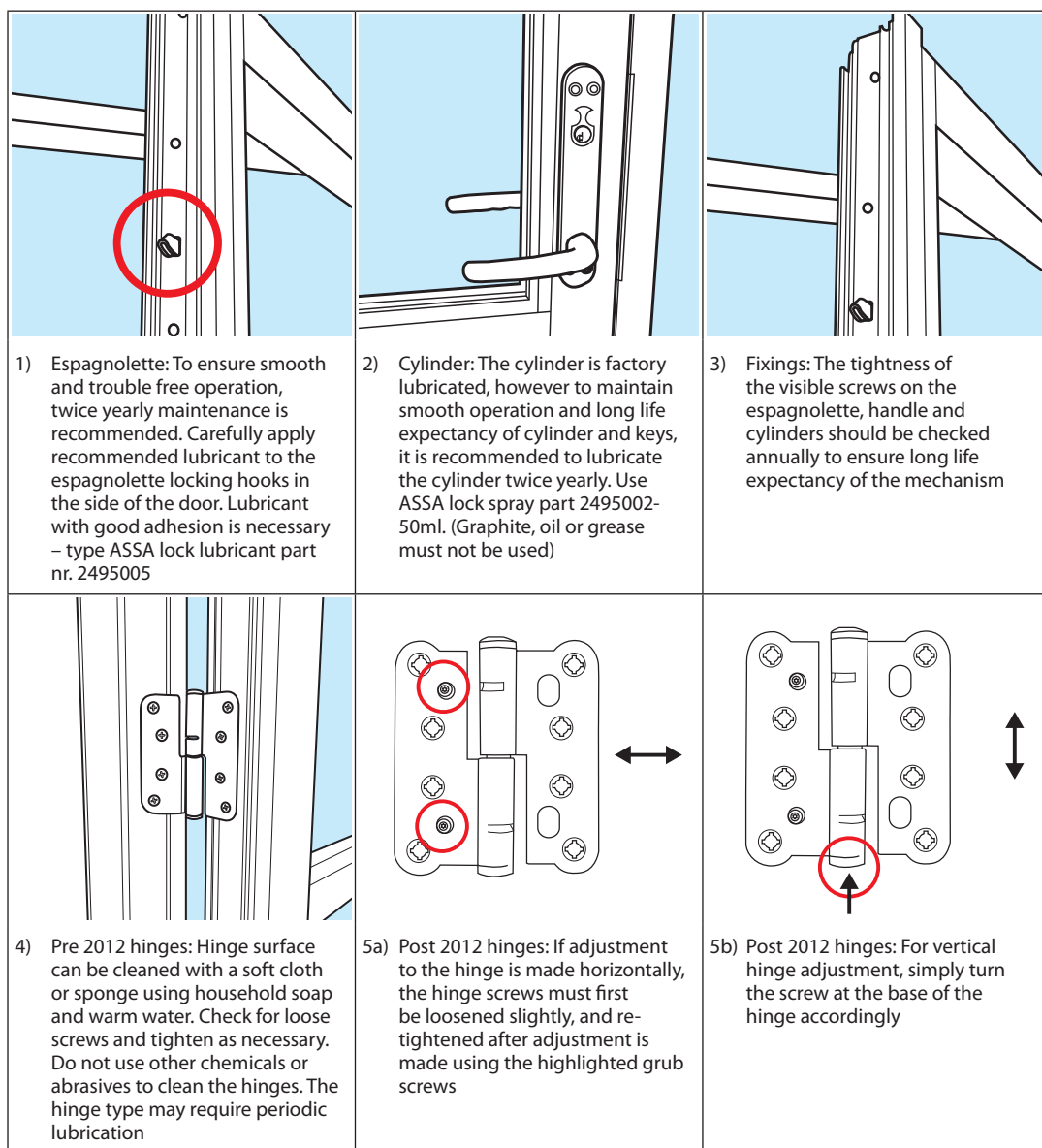
NOTES:

- Do not paint over lock
- Avoid metal filings and similar particles coming into contact with the lock

ADJUSTABLE HINGES

Your doors may have adjustable hinges installed. If the frame fitting is correct, then small adjustments can be made using a Tx20 Torx bit.

NOTE: The adjustable hinge does not require lubrication.



1) Espagnolette: To ensure smooth and trouble free operation, twice yearly maintenance is recommended. Carefully apply recommended lubricant to the espagnolette locking hooks in the side of the door. Lubricant with good adhesion is necessary – type ASSA lock lubricant part nr. 2495005

2) Cylinder: The cylinder is factory lubricated, however to maintain smooth operation and long life expectancy of cylinder and keys, it is recommended to lubricate the cylinder twice yearly. Use ASSA lock spray part 2495002-50ml. (Graphite, oil or grease must not be used)

3) Fixings: The tightness of the visible screws on the espagnolette, handle and cylinders should be checked annually to ensure long life expectancy of the mechanism

4) Pre 2012 hinges: Hinge surface can be cleaned with a soft cloth or sponge using household soap and warm water. Check for loose screws and tighten as necessary. Do not use other chemicals or abrasives to clean the hinges. The hinge type may require periodic lubrication

5a) Post 2012 hinges: If adjustment to the hinge is made horizontally, the hinge screws must first be loosened slightly, and re-tightened after adjustment is made using the highlighted grub screws

5b) Post 2012 hinges: For vertical hinge adjustment, simply turn the screw at the base of the hinge accordingly

A door set comprises of two main parts. The door frame, which is fixed to the building, and a door leaf, which is the opening part.

- Closely inspect your doors at least once a year. Check the door opens and closes smoothly
- Check the weather gasket set around the outside edge of the door leaf and ensure it is kept clean and remove any debris

- Check the paintwork for any loose or flaking finishing. Remove loose paint with a stiff brush then re-coat

IMPORTANT: Every time you close your door always lift the handle up to engage the multiple locking. Please do this at all times because it is the multiple locking that stops the door suffering from problems such as 'heat pull', bending and twisting. If you don't

follow this rule the door may become difficult to use. Always lift the handle up every time you close the door to engage the locking mechanism.

SINGLE SLIDING DOORSETS (SD)

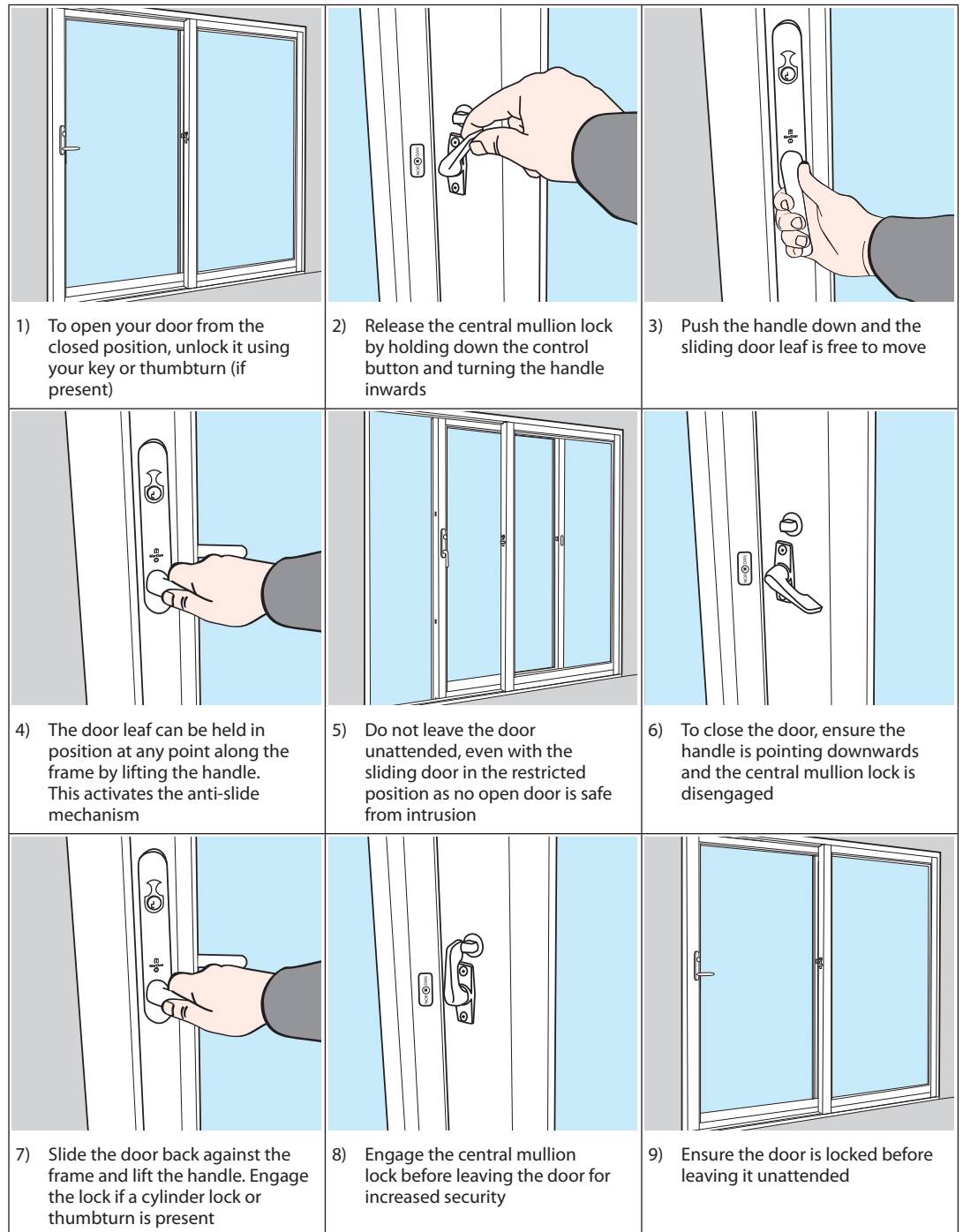
OPERATION

Single sliding doorsets are produced as standard with one side fixed and the other part sliding.

The opening door is on the outside. When the door handle is released, the door moves out approximately 7mm and then can be easily moved sideways. The door can simply be stopped and restrained in any open position on the track by closing the door handle.

NOTE: Ensure the central mullion lock is engaged whenever the sliding door has been closed. This is critical in maintaining stability for the timber and also essential for security.

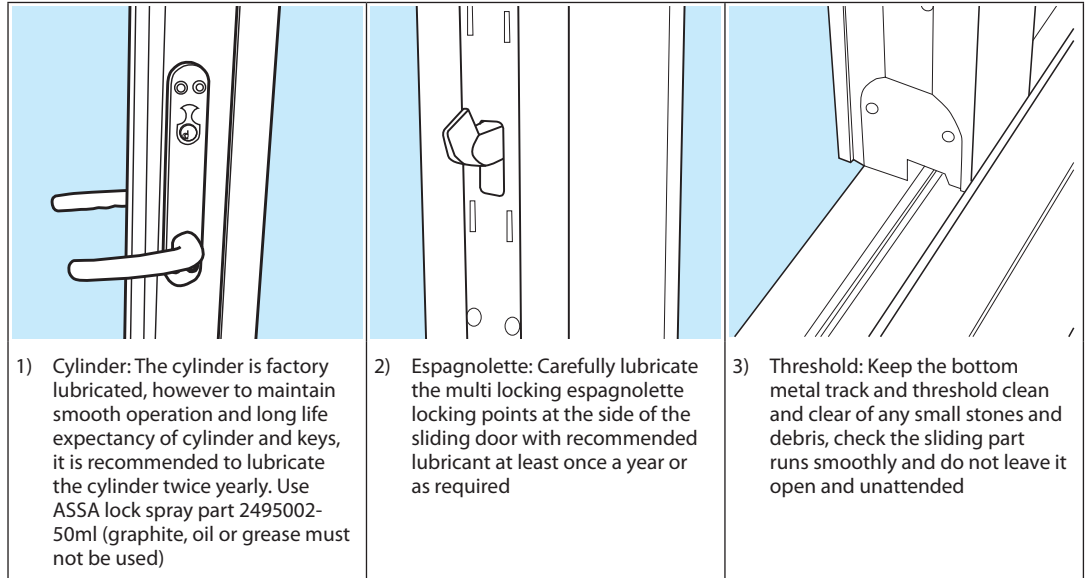
NOTE: Ensure that you make a note of the reference number on any door keys you have. This is essential information when ordering replacement keys.



SINGLE SLIDING DOORSETS (SD)

MAINTENANCE

Ensure the door is maintained regularly, following the standard guidelines



A door set comprises of two main parts. The door frame, which is fixed to the building, and a door leaf, which is the opening part.

- Closely inspect your doors at least once a year. Check the door opens and closes smoothly.
- Check the weather gasket set around the outside edge of the door leaf and ensure it is kept clean and remove any debris

- Check the paintwork for any loose or flaking finishing. Remove loose paint with a stiff brush then re-coat

IMPORTANT: Every time you close your door always lift the handle up to engage the multi-point locking. It is also essential that the centre mullion lock is also engaged. This stops the door suffering from problems such as 'heat pull', bending and twisting. If you

don't follow this rule the door may become difficult to use. Timber needs discipline to hold its shape so you must always lift the handle up every time you close the door and engage the centre mullion lock.

DOUBLE SLIDING DOORSETS (4S)

OPERATION (PRIMARY DOOR)

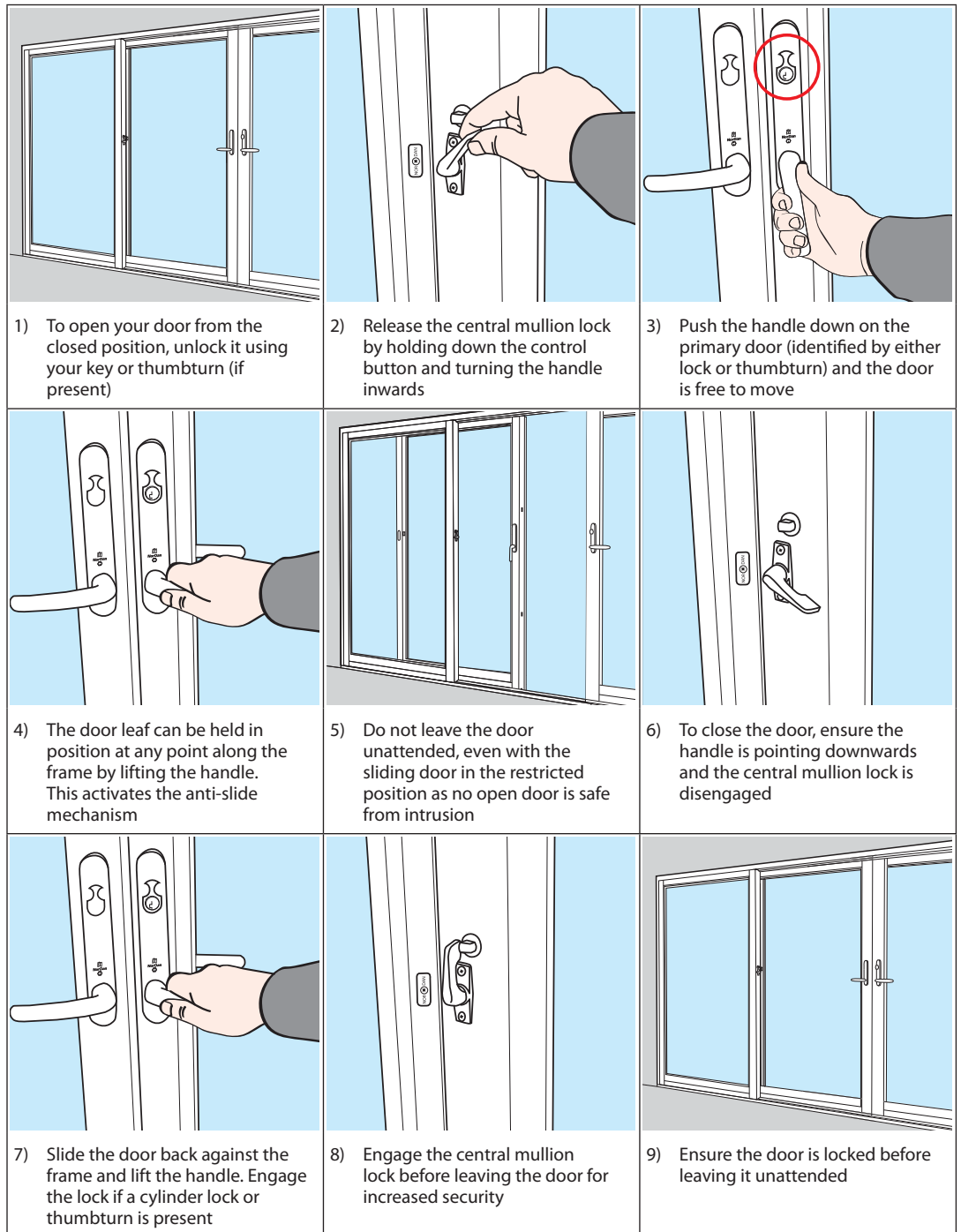
Double sliding doorsets are produced as standard with two doors fixed and the two center doors opening.

The opening doors slide on the outside. When the door handle is released, the door moves out approximately 7mm and then can be easily moved sideways. The door can simply be stopped and restrained in any open position on the track by closing the door handle.

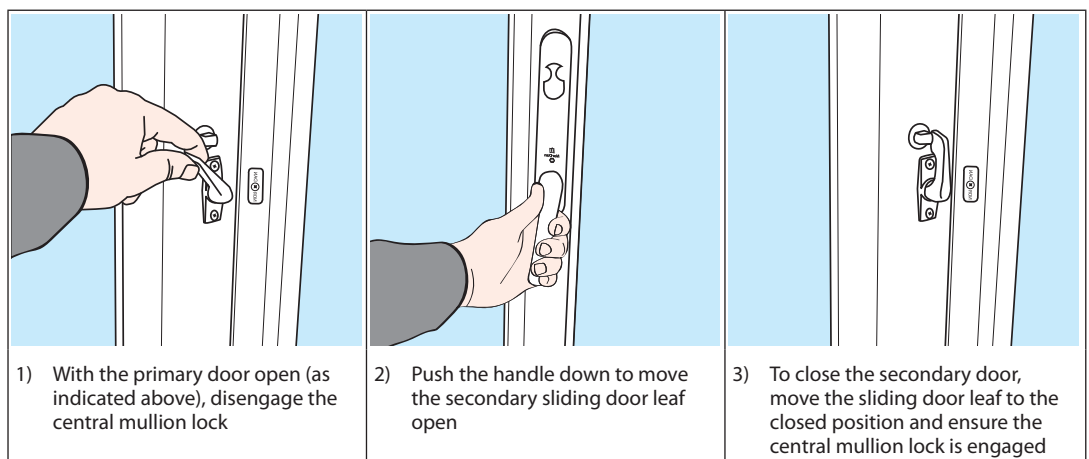
NOTE: When opening and closing both primary and secondary doors, ensure the primary door is opened first. When closing both doors, ensure the primary door is closed last. For identification, the secondary door has a handle with a blank cylinder (no keyhole) on the inside, and a blanking plate (no thumbturn or cylinder) on the outside.

Ensure the central mullion lock is engaged whenever the sliding door has been fully closed. This provides stability and discipline for the timber and increased security.

NOTE: Ensure that you make a note of the reference number on any door keys you have. This is essential information when ordering replacement keys.



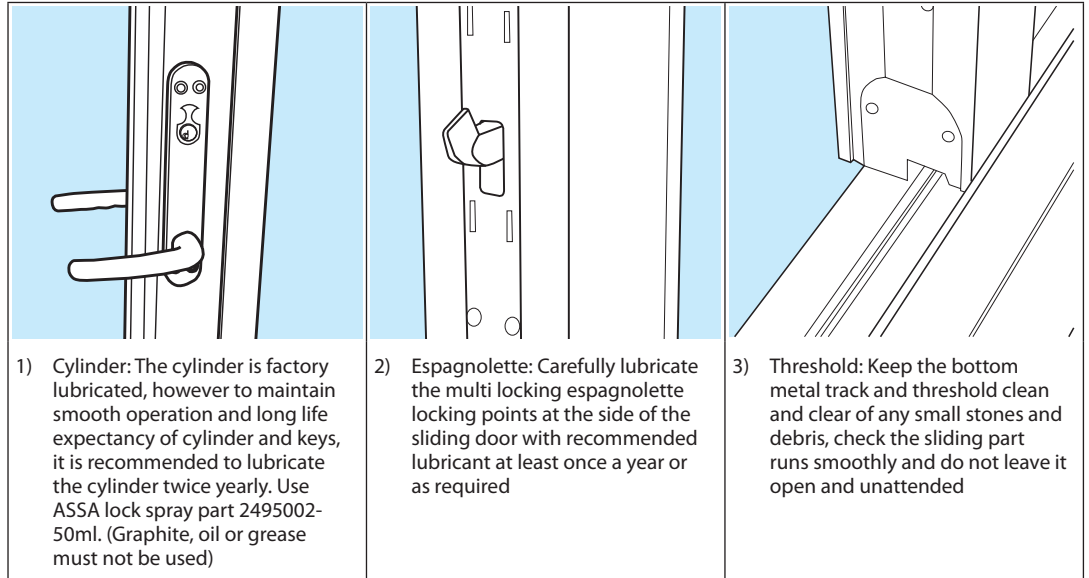
OPERATION (SECONDARY DOOR)



DOUBLE SLIDING DOORSETS (4S)

MAINTENANCE

Ensure the door is maintained regularly, following the standard guidelines



A door set comprises of two main parts. The door frame, which is fixed to the building, and a door leaf, which is the opening part.

- Closely inspect your doors at least once a year. Check the door opens and closes smoothly.
- Check the weather gasket set around the outside edge of the door leaf. Use a small nozzled vacuum cleaner along the sides

of the weatherseal to remove any debris, dust etc

- Check the paintwork for any loose or flaking finishing. Remove loose paint with a stiff brush then re-coat

IMPORTANT: Every time you close your door always lift the handle up to engage the multi-point locking. It is also essential that the centre mullion lock is also engaged. This

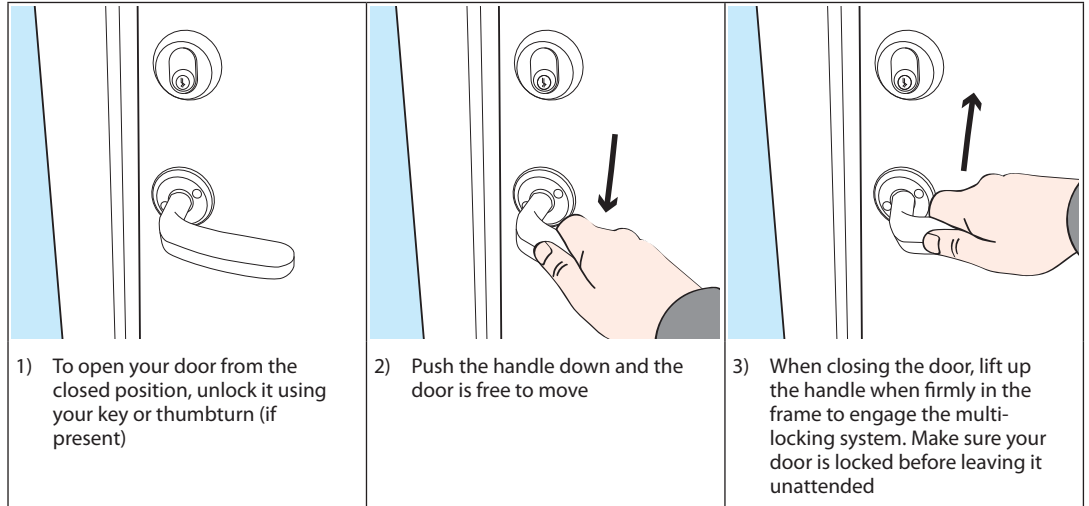
stops the door suffering from problems such as 'heat pull', bending and twisting. If you don't follow this rule the door may become difficult to use. Timber needs discipline to hold its shape so you must always lift the handle up every time you close the door and engage the centre mullion lock.

EXTERNAL ENTRANCE DOORSETS

PRIMARY DOOR (INWARD OPENING) OPERATION

Always check the door is closed and locked before leaving it unattended.

NOTE: Ensure that you make a note of the reference number on any door keys you have. This is essential information when ordering replacement keys.



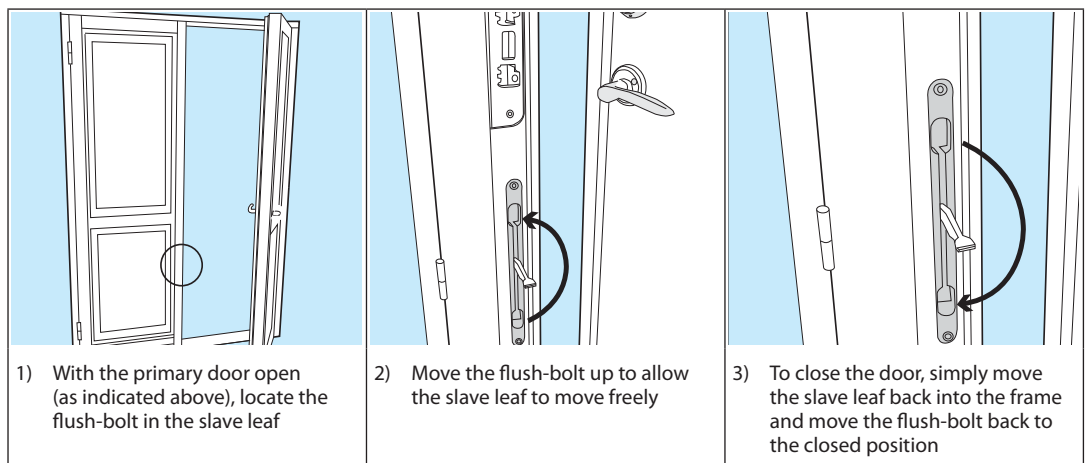
1) To open your door from the closed position, unlock it using your key or thumbturn (if present)

2) Push the handle down and the door is free to move

3) When closing the door, lift up the handle when firmly in the frame to engage the multi-locking system. Make sure your door is locked before leaving it unattended

DOUBLE DOOR (OUTWARD OPENING) OPERATION

Note: Double doors have single point locking and flush-bolt for slave leaf.



1) With the primary door open (as indicated above), locate the flush-bolt in the slave leaf

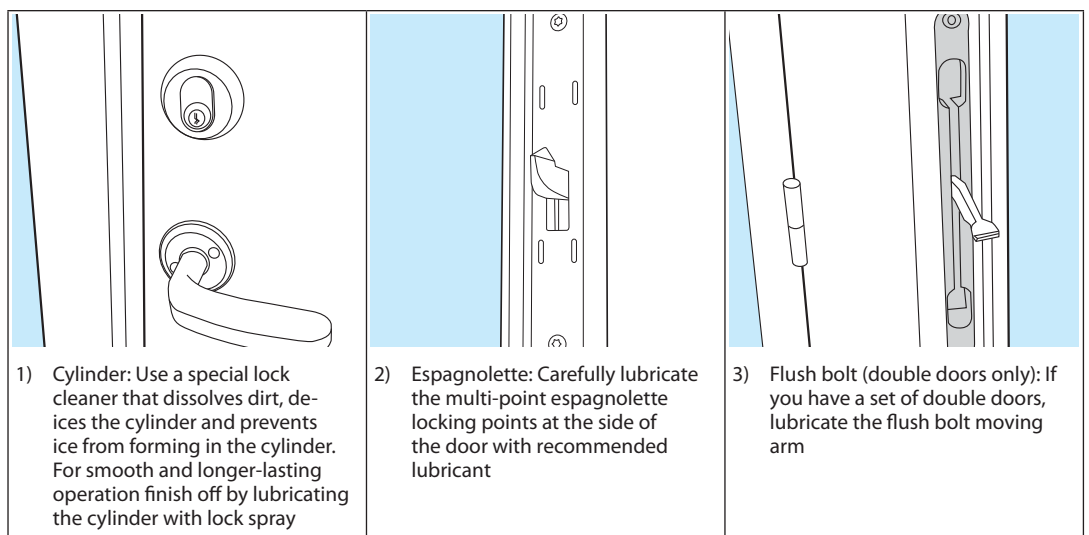
2) Move the flush-bolt up to allow the slave leaf to move freely

3) To close the door, simply move the slave leaf back into the frame and move the flush-bolt back to the closed position

MAINTENANCE

Ensure the door is maintained regularly, depending on frequency of use, load and environment.

It is important also to check that screws for the lock case, door fittings, handles and strike plates are tight.



1) Cylinder: Use a special lock cleaner that dissolves dirt, de-ices the cylinder and prevents ice from forming in the cylinder. For smooth and longer-lasting operation finish off by lubricating the cylinder with lock spray

2) Espagnolette: Carefully lubricate the multi-point espagnolette locking points at the side of the door with recommended lubricant

3) Flush bolt (double doors only): If you have a set of double doors, lubricate the flush bolt moving arm

Handles:

It is recommended that furniture polish or similar is used on a regular basis to maintain the coating. Properties close to the coast will require more frequent attention.

Hinges:

When the hinges are in use they acquire a black coating of dust. This is best prevented by regular maintenance and lubrication.

Threshold:

The surface must be kept clean. Clean with water and an appropriate cleaning agent.

Note:

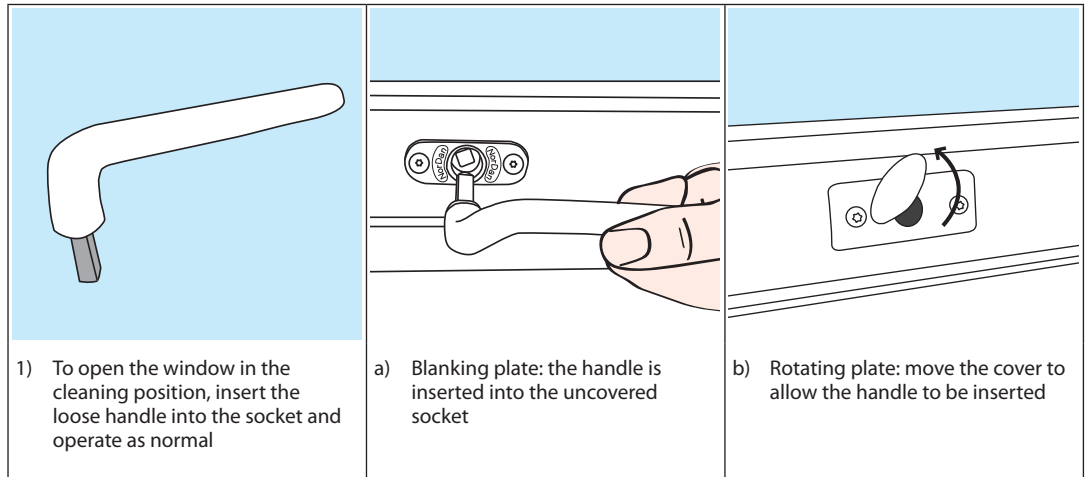
- Do not apply paint or oil to the silicon seal between the door and frame. This would impair the sealing function and elasticity of the materials.

- All door fittings included with the product have been surface-treated and should not be painted. This would impair their function.

PRODUCT FURNITURE: WINDOW HANDLES

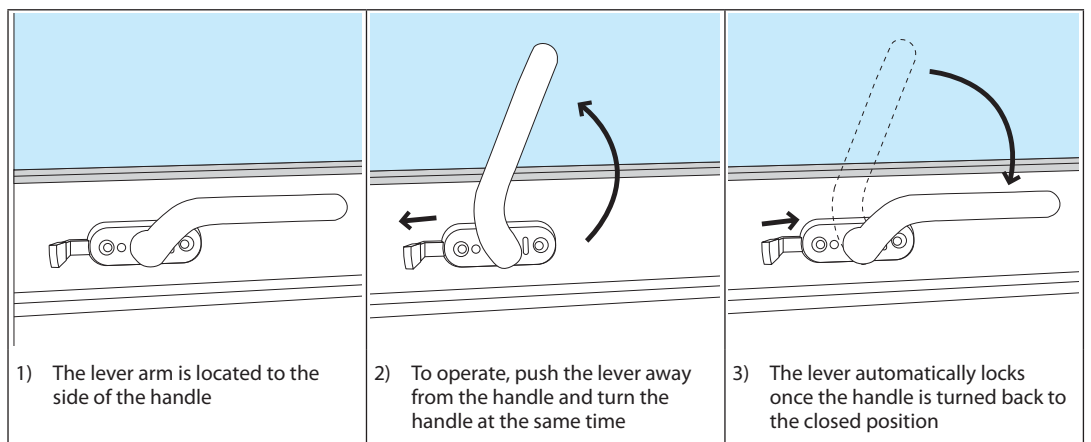
LOOSE HANDLE WITH BLANKING PLATE

(INWARD OPENING WINDOWS)
Loose handles are usually located in the bottom of the sash to allow free access to the ventilation position yet restrict the cleaning position. Remember to keep your handle somewhere safe and accessible in case of emergencies.



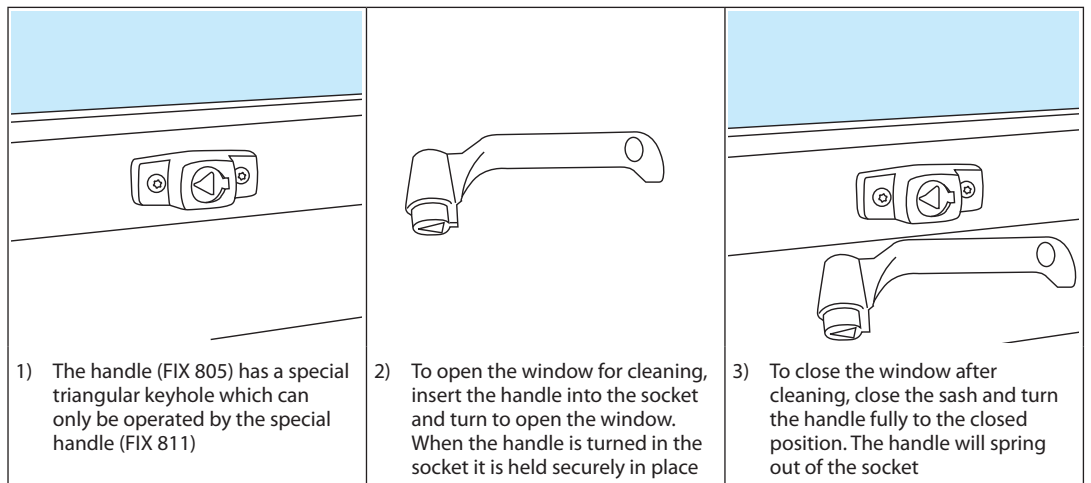
CHILD SAFETY HANDLE

A lever operated handle is used to restrict the window opening and to improve safety and security



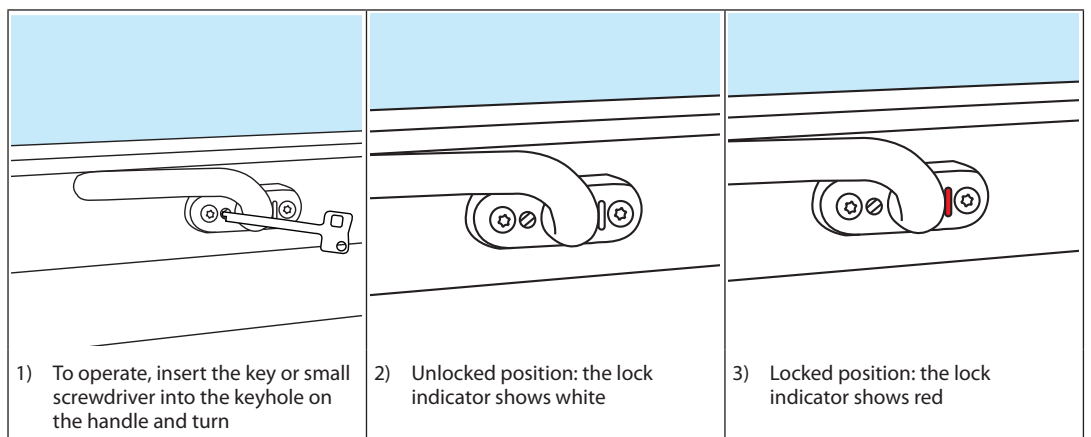
SPRING LOADED HANDLE (FIX 805, 811)

The safety locking handle is usually fitted in lieu of the bottom handle. This provides added security in locations where supervised control of the opening functions of the window is required.



KEY OPERATED LOCKING HANDLE

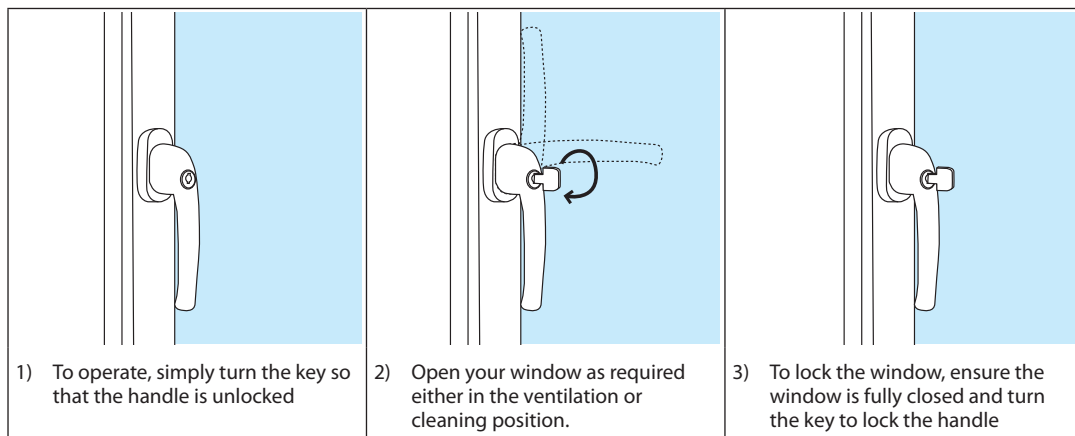
The key operated locking handle can be found in either the bottom or sides of the sash. It can be operated by a key or small screwdriver.



PRODUCT FURNITURE: WINDOW HANDLES

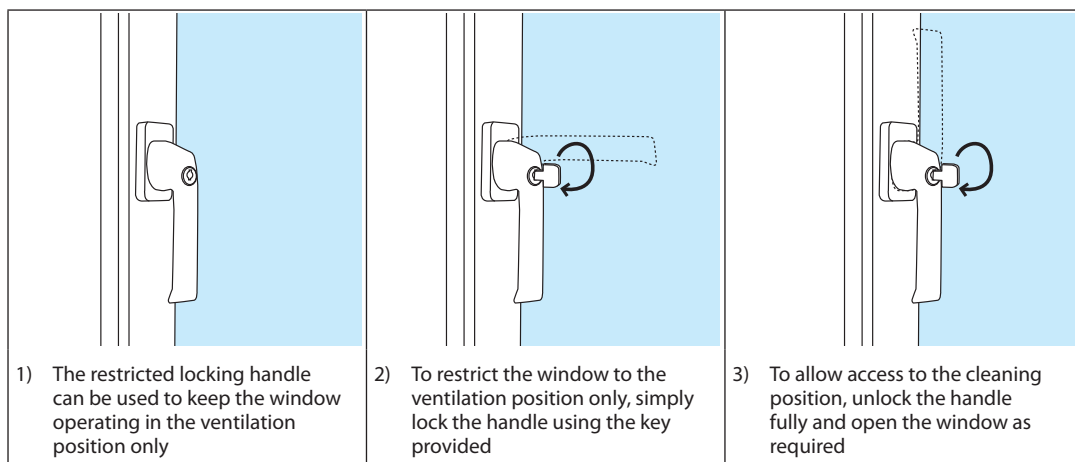
FULLY LOCKING HANDLE

Fully lockable key-operated handle option for the one handled tilt & turn window.



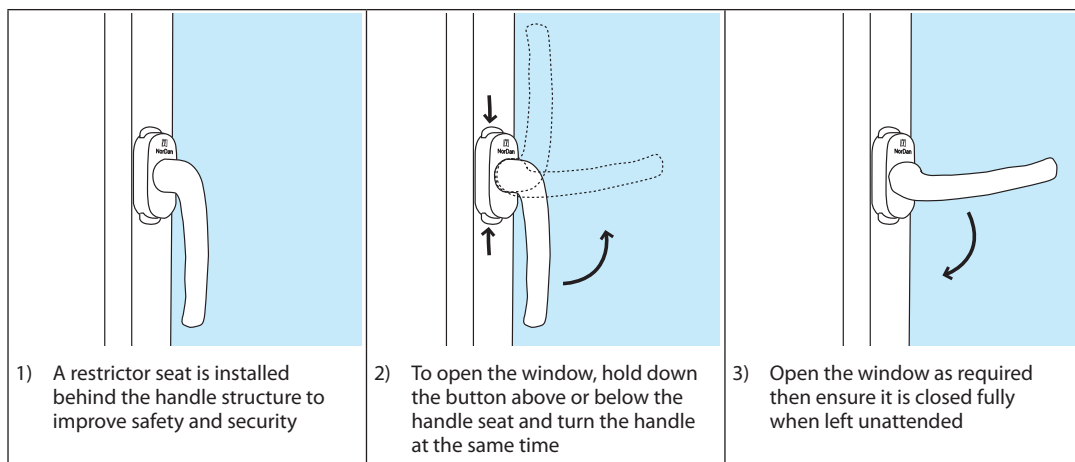
RESTRICTED LOCKING HANDLE

The handle can be locked using the supplied key to restrict access to the cleaning position



CHILD SAFETY HANDLE (U26)

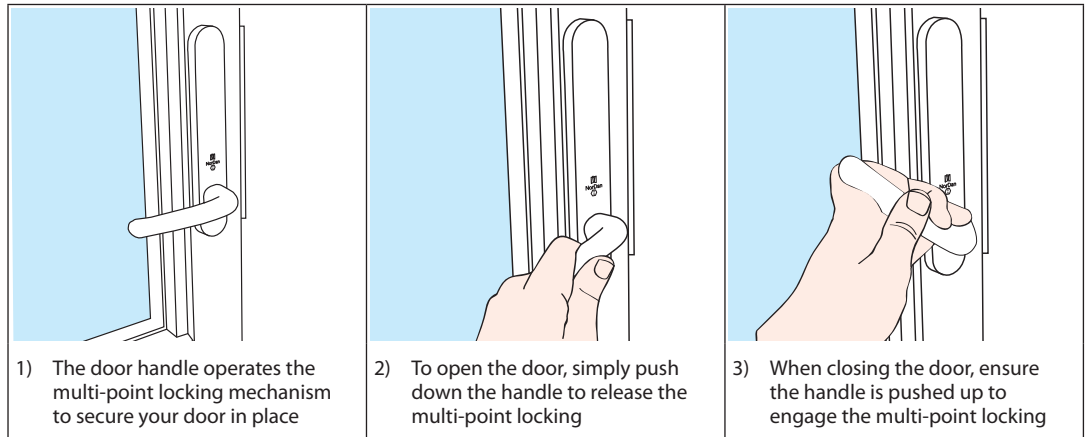
Optional handle for the one handled tilt and turn window for improved safety and security



PRODUCT FURNITURE: DOOR HANDLES

BLANK HANDLE

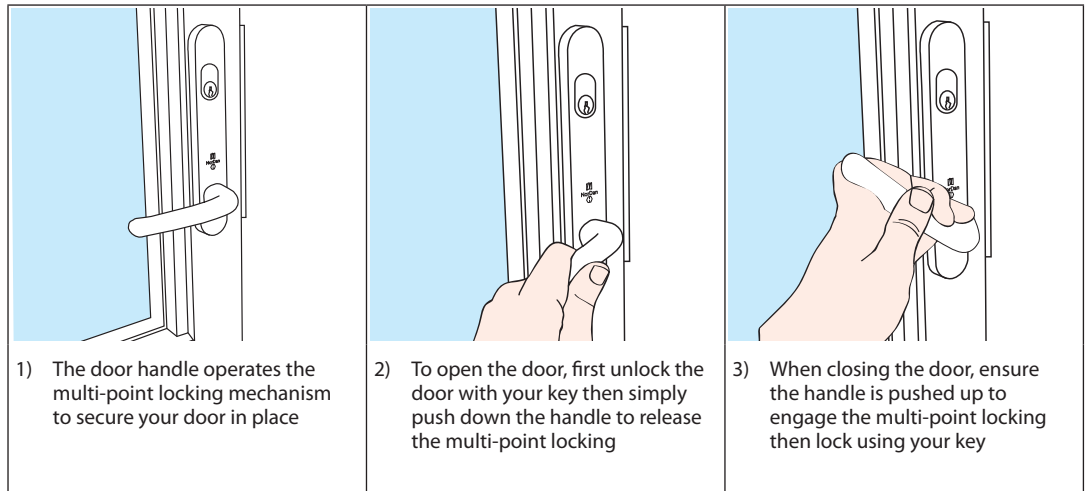
Blank handle plates have no locking operation



KEY LOCKING HANDLE

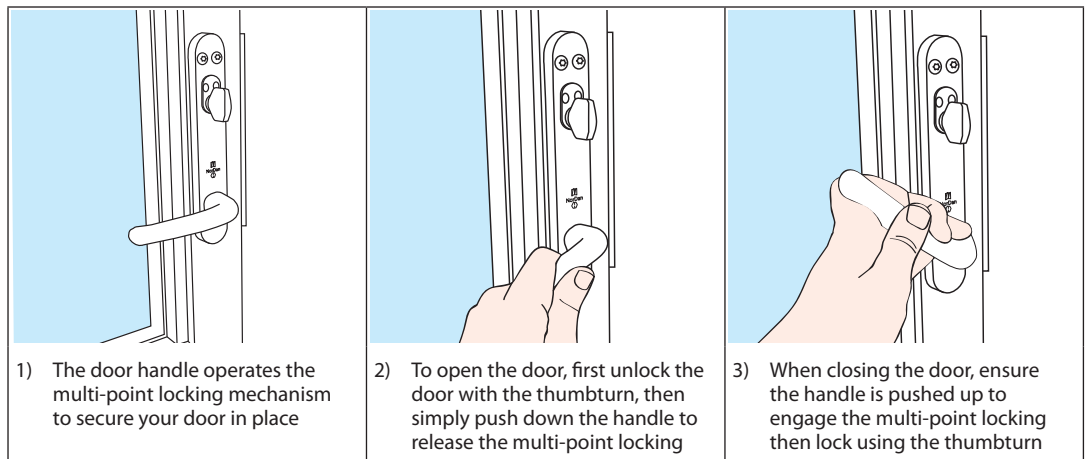
The key operated cylinder locking handle that can be supplied to NorDan balcony doors and sliding doors both inside and outside the door

NOTE: Ensure that you make a note of the reference number on any door keys you have. This is essential information when ordering replacement keys



THUMBTURN HANDLE

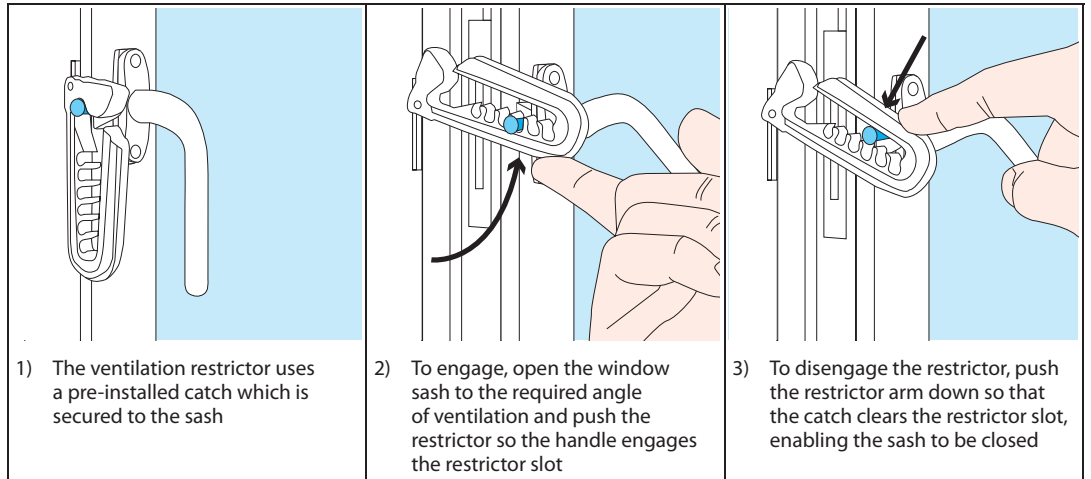
The thumbturn lockable handle can be supplied to NorDan balcony doors and sliding doors to the inside of the door



PRODUCT FURNITURE: RESTRICTORS

VENTILATION RESTRICTOR

The ventilation restrictor can be found on the side or the bottom of the window frame, next to the sash. It is used to restrict the sash in the ventilation position



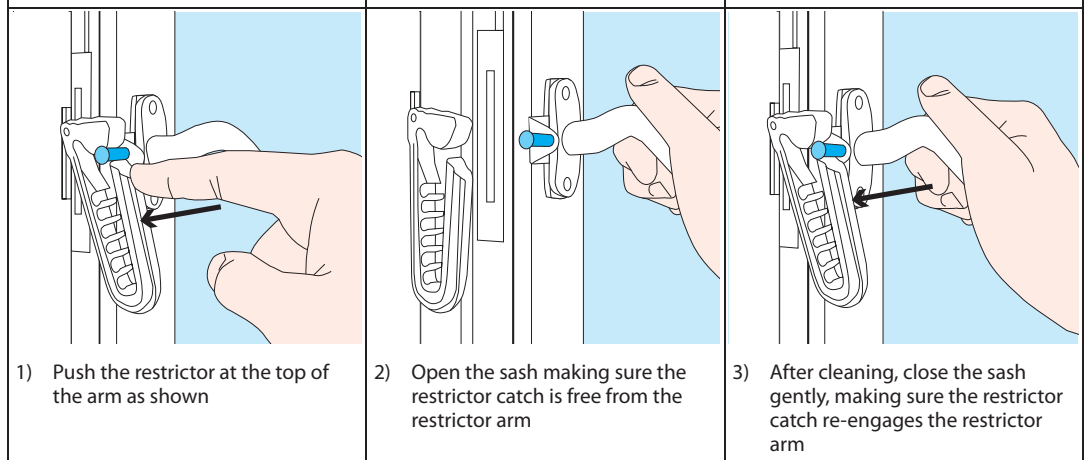
1) The ventilation restrictor uses a pre-installed catch which is secured to the sash

2) To engage, open the window sash to the required angle of ventilation and push the restrictor so the handle engages the restrictor slot

3) To disengage the restrictor, push the restrictor arm down so that the catch clears the restrictor slot, enabling the sash to be closed

CLEANING

The restrictor needs to be detached from the window to allow access to the cleaning position



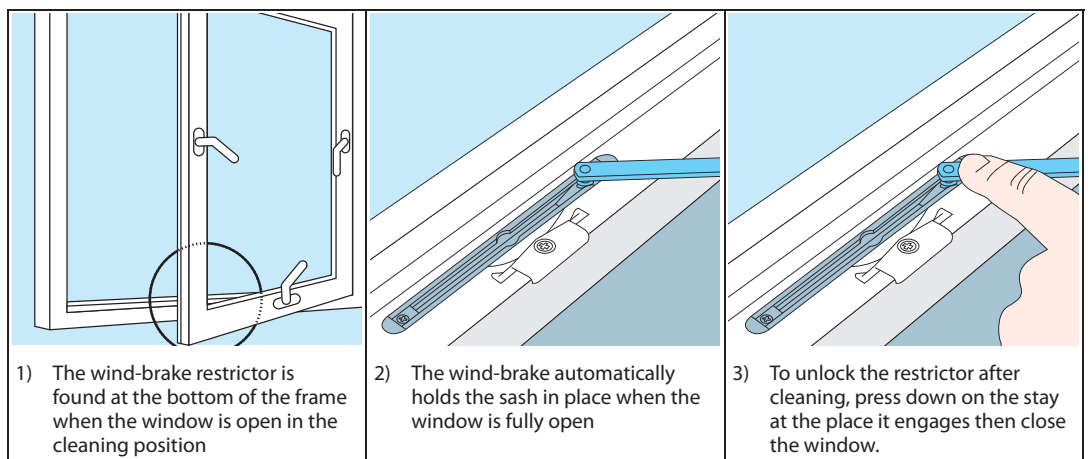
1) Push the restrictor at the top of the arm as shown

2) Open the sash making sure the restrictor catch is free from the restrictor arm

3) After cleaning, close the sash gently, making sure the restrictor catch re-engages the restrictor arm

WIND BRAKE

The optional factory fitted wind-brake for inward opening windows only is an additional safety device to restrict the movement of the sash when open in the cleaning position.



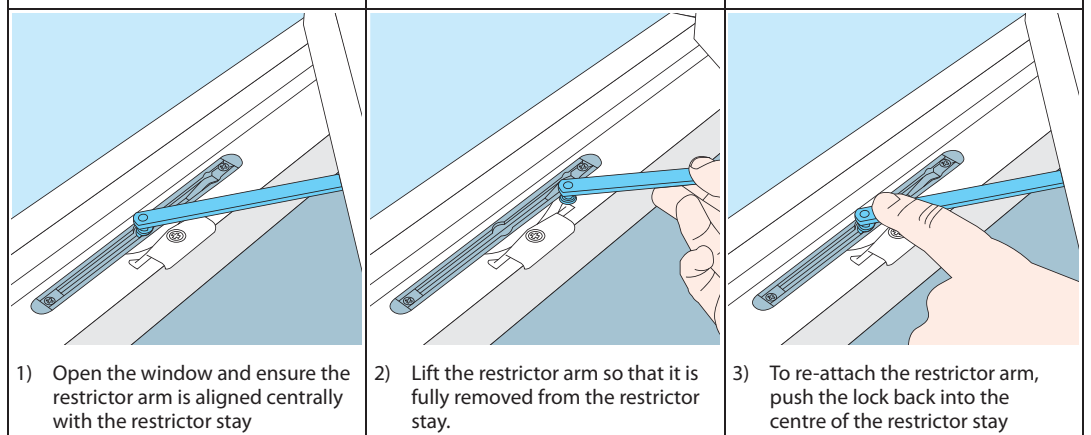
1) The wind-brake restrictor is found at the bottom of the frame when the window is open in the cleaning position

2) The wind-brake automatically holds the sash in place when the window is fully open

3) To unlock the restrictor after cleaning, press down on the stay at the place it engages then close the window.

DISENGAGING

The wind-brake restrictor can be disengaged so the window can be opened fully for maintenance purposes.



1) Open the window and ensure the restrictor arm is aligned centrally with the restrictor stay

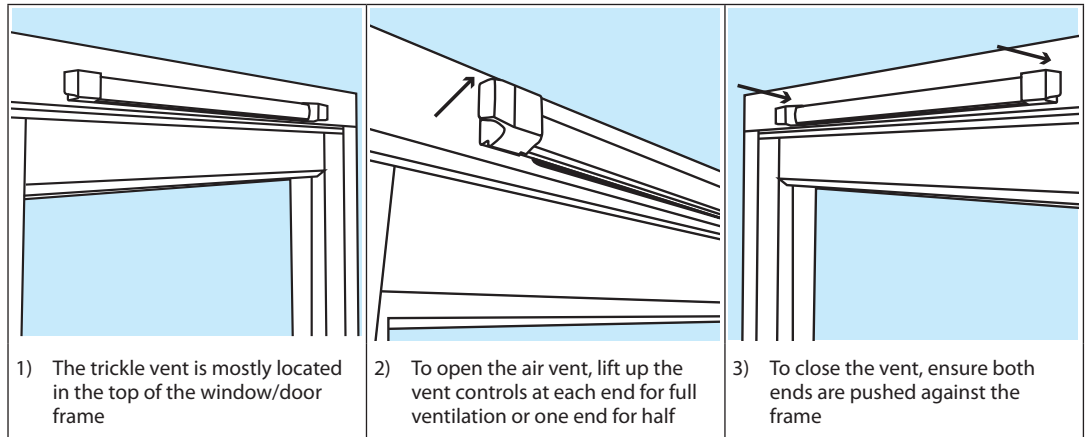
2) Lift the restrictor arm so that it is fully removed from the restrictor stay.

3) To re-attach the restrictor arm, push the lock back into the centre of the restrictor stay

PRODUCT FURNITURE: ADDITIONAL ITEMS

OPTIONAL TRICKLE VENT

Trickle vents allow for the provision of background ventilation to improve air circulation and reduce the risk of condensation.



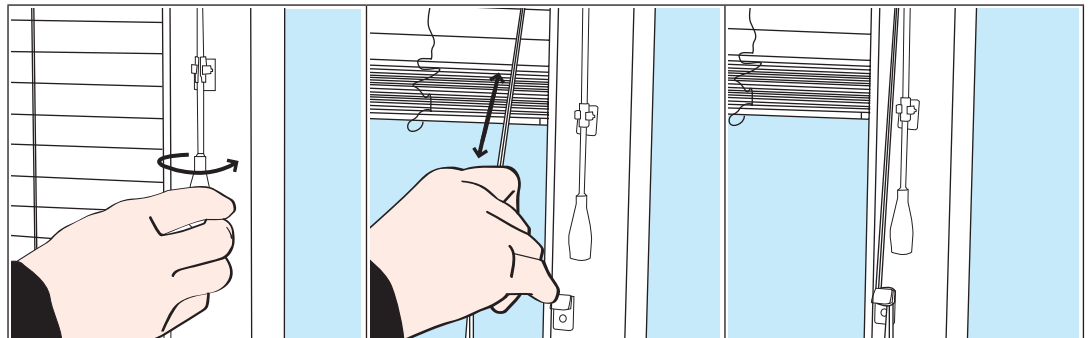
1) The trickle vent is mostly located in the top of the window/door frame

2) To open the air vent, lift up the vent controls at each end for full ventilation or one end for half

3) To close the vent, ensure both ends are pushed against the frame

SECONDARY SASH & VENETIAN BLINDS

NOTE: Ensure cords are kept well out of reach of small children to avoid risk of injury

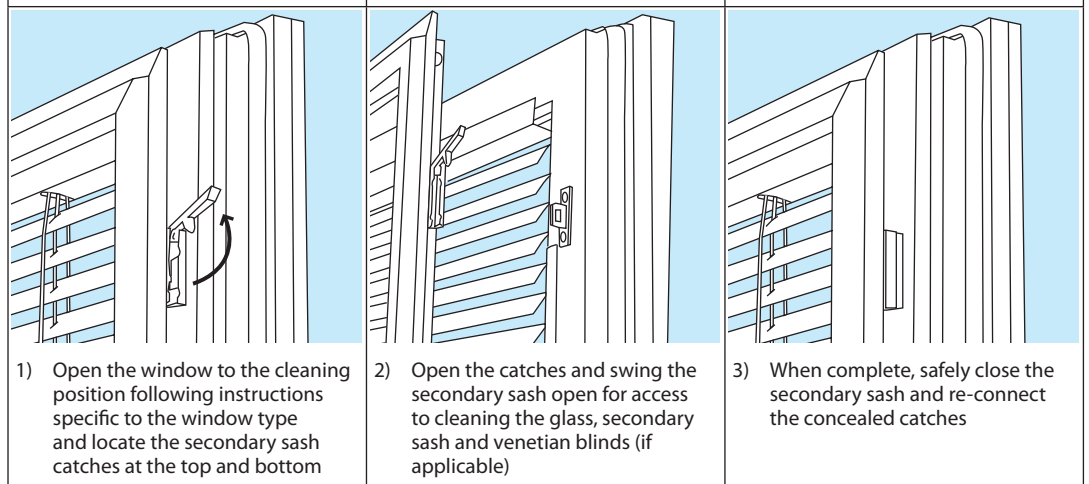


1) To adjust the angle of the blinds, rotate the control stick to your preferred configuration

2) To adjust the height of the blinds, locate the control cord to the side of the window and pull to raise or release to lower

3) Wrap the control cord around the control stay once the blinds are positioned as required

MAINTENANCE: Secondary sashes are fitted to the external side of the main sash and can be used to improve energy saving and reduce maintenance. In the event of maintenance, simply follow these instructions.



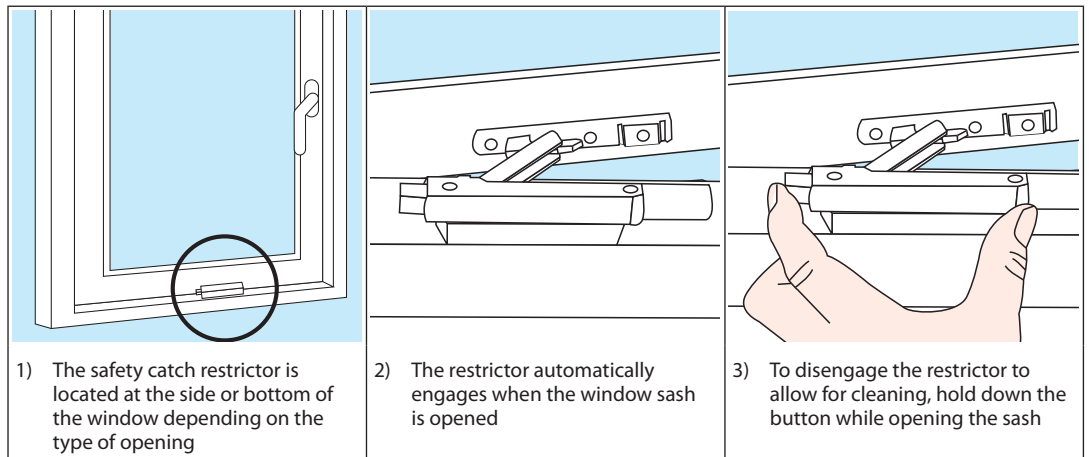
1) Open the window to the cleaning position following instructions specific to the window type and locate the secondary sash catches at the top and bottom

2) Open the catches and swing the secondary sash open for access to cleaning the glass, secondary sash and venetian blinds (if applicable)

3) When complete, safely close the secondary sash and re-connect the concealed catches

PUSH BUTTON RESTRICTOR

The safety catch restrictor prevents windows from slamming shut and also restricts the opening distance of the sash. It is operated with a button and lever mechanism.



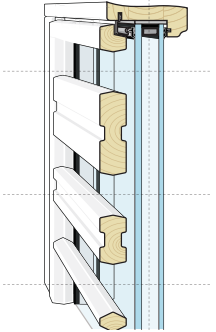
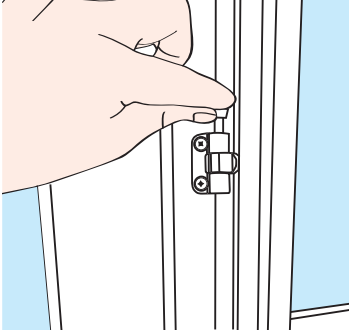
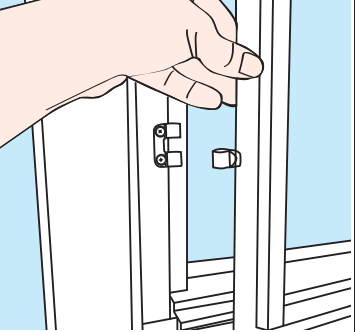
1) The safety catch restrictor is located at the side or bottom of the window depending on the type of opening

2) The restrictor automatically engages when the window sash is opened

3) To disengage the restrictor to allow for cleaning, hold down the button while opening the sash

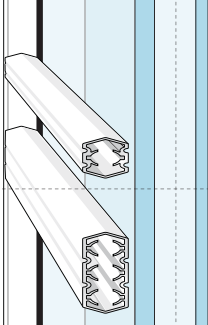
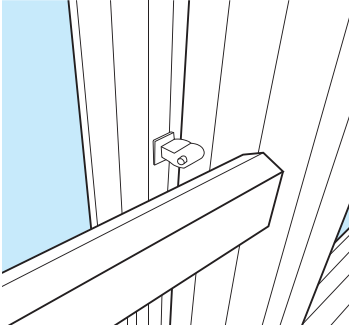
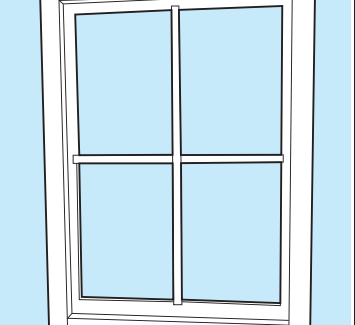
PRODUCT FURNITURE: ADDITIONAL ITEMS

TIMBER OVERLAYS

		
<p>1) To remove timber overlays from your windows (see above for configuration examples), first open your window into the cleaning position then locate the brackets at one side of the overlay</p>	<p>2) Remove the pin that holds the overlay in place on one side and gently swing out the overlay</p>	<p>3) When cleaning is complete, gently swing the overlay back into position and put the pins back into the overly brackets.</p>

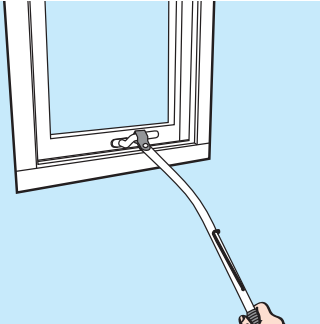
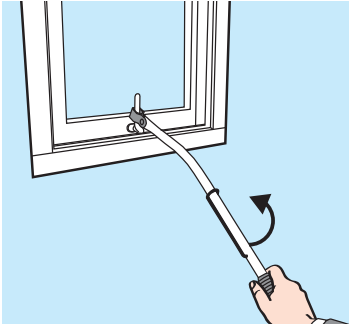
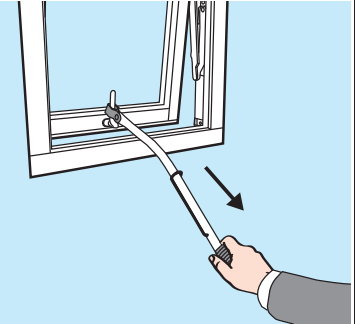
CLIP ON GLAZING BARS

Clip on glazing bars are delivered pre-installed to existing products. The bars are fitted using nylon clips located at the junction between the bar and the glazing bead. The clip should not be removed at any point.

		
<p>1) It is possible to clean around the bars, however they can also be carefully removed to fully clean your window/doors</p>	<p>2) To remove clip on glazing bars from your windows/doors, gently pull each bar free from the fixing clip. Do not use excessive force, or tools which may damage the bars, clips or glazing beads</p>	<p>3) Where there are cross connections the jointed bars may be loose at the connection. Care should be taken that loose bars do not fall. After cleaning your window (and the bars) they can be gently clipped back into position</p>

WINDOW PULL

The window pull can be used where height or access to handles is restricted. For more information, visit: <http://keydistribution.co.uk>

		
<p>1) To open a window, attach to the handle by placing the self adjusting anti-slip collar over the window handle</p>	<p>2) Twist the window pull handle to rotate the handle then push/pull the sash depending on the window type</p>	<p>3) To close the window, follow the procedure in reverse making sure the window is securely closed before leaving it unattended</p>



GENERAL MAINTENANCE: INTRODUCTION

In order that you obtain the greatest possible performance from your windows and doors, a certain degree of regular maintenance is required.

The frequency of maintenance is very much down to your local environment. This varies due to climate, precipitation and humidity, air pollution, mould and algae, temperature changes, the location of the building, the positioning of the window in the wall, the direction in which the window faces. This means that different windows in the same building may require varying levels of maintenance.

Our recommendation is that you carry out an inspection at least once a year. The best way is to try and make this part of your routine, e.g. when you clean your windows, take the opportunity to clean the external parts of the windows at the same time. In this way, you will see the condition of the surface treatment at the same time as you maintain the surface through cleaning.

Lubricant

For lubrication of parts and product specific maintenance, *Würth HHS-5000* is recommended unless otherwise stated. The lubricant has good adhesion, is easily applied and is less likely to drop and damage finishings.

In order to easily describe the general maintenance requirements of NorDan windows and doors, the instructions have been divided into three general groups of materials:

- Glazing
- Timber treatment
- Aluminium cladding/profiles

GENERAL MAINTENANCE: GLAZING

Cleaning your glass should be carried out as and when required depending on your local environment. The following guidelines can be followed:

- 1) Choose a calm day to clean your windows, following simple health and safety guidelines.
- 2) Rinse the glass with warm water mixed with a mild detergent.
- 3) Rinse the glass with clean water
- 4) Dry glass using a chamois leather

SELF-CLEANING GLASS

Self-cleaning glass has been specially designed to remain cleaner for longer than conventional glass. A transparent coating on the external surface of the glass harnesses the power of ultra-violet rays and rain (or water) to break down dirt and grime then wash it clean away. The coating is totally integrated into the surface of the glass and is highly durable. However, as with all coated glass a certain level of care must be exercised when handling and maintaining.

Installation/building works

If any building works are taking place in the vicinity of self-cleaning glass then protect with a clean plastic sheet to prevent any splashes or staining from aggressive compounds (paint, varnish, glue, sealant, cement, plaster, mortar, etc). This will also protect the product from abrasive or hot particles (grinding or welding sparks, etc).

Initial preparation

When you first receive your fully installed products that are fitted with self-cleaning glass, please carry out the following:

- Remove any labels on the glass by carefully peeling it off. Care must be exercised when removing the label from the glass to ensure that the special coating is not damaged. Do not use a razor, scraper or wire-wool to detach the label.
- Wait at least a week before cleaning the product for the first time to ensure all sealants used in its installation are fully set. Start with a rinse or hose-down with clean water and continue, when necessary, with a normal maintenance routine.

During the week after initial installation and

clean-down the self-cleaning property of the glass will be progressively activated, triggered by exposure to UV light. The length of time required to activate the coating by UV rays can vary depending on the season and the orientation of the glass, but is normally within a week.

When the glass is wet a small border of water droplets may appear around the perimeter surface of the glass. This is perfectly normal.

Maintaining self-cleaning glass

Self-cleaning glass does require occasional cleaning. To carry this out, carefully follow these instructions. You will need clean, soft tools; a lint-free cloth or chamois leather, a non-abrasive sponge or a non-metal window squeegee. For cleaning, clean water will normally suffice however, standard, mild glass-cleaning products can also be used 'Soft' water is best for cleaning glass. In hard-water areas a small amount of washing-up liquid can be used to soften water. For the removal of stubborn marks white vinegar can be used. Always ensure that the vinegar does not come into contact with the frame and that it is washed off the glass after application (vinegar is not to be used as a regular cleaning method).

NOTE:

- Do not use any glass treatment products containing silicones or abrasive particles.
- Do not use any commercial cleaning products which are intended specifically for cleaning elements other than glass.
- Do not use chemical products: soda, bleach, washing powder, white spirit etc.
- Avoid contact with all sharp or abrasive objects including jewellery, buckles, tape measures, razor blades, Stanley knives, scouring pads, steel wool, sandpaper etc.
- Never attempt to clean off a specific mark on the surface without applying water first.

CONDENSATION ON GLASS

Internal condensation

Internal condensation typically occurs with poorly insulated windows with high interior atmospheric humidity and a low exterior temperature. The normal room air is warmer than the cooled down air located near the

window pane. The room air is cooled down near the window pane and, at the same time, the relative atmospheric humidity increases in the cold air because it cannot carry as much atmospheric humidity as the warmer air. When the relative atmospheric humidity reaches 100%, the so-called dew point, the water condenses as mist or water on the window panes.

How to avoid internal condensation

- Have energy-efficient windows with a low U-value.
- Properly ventilate construction damp in a newly built house.
- Provide good ventilation. Air rooms regularly!
- Ensure that the atmospheric humidity does not exceed 40%.
- Close doors to rooms where food is stored and to showers/bathrooms.
- If possible, do not hang wet washing up to dry inside the house.
- Ensure that the warm room air can rise unhindered up over glass surfaces.
- Remember that deep niches, curtains, Venetian blinds, potted plants and window shades prevent warm air currents reaching the window glass.

External condensation

Under certain conditions, condensation may form on the outside of window panes. This may occur on energy-efficient windows which have a very low U-value. This is an indication that the glass construction is providing very effective insulation and is providing small energy losses.

External condensation is formed primarily during the dawn and morning hours between September and April in our northern climate. As the air becomes warmer over the course of the day, the condensation disappears. If the weather is calm, cold and clear with high atmospheric humidity, the temperature of the outermost exterior pane may fall below the dew point and condensation is formed (compare with mist and frost on car windows). The energy losses from inside are too small to keep the temperature of the outer pane above the dew point for the outside air.

GENERAL MAINTENANCE: TIMBER AND ALUMINIUM

The timber used in your NorDan products has been treated against rot and insect attack using a pressure impregnation process.

MAINTENANCE OF PAINTED WOODEN PARTS

- Check your painted windows carefully at least once a year. If you see signs of blisters, cracks, flaking or a matt surface to the paint, you should take care of the damage.
- When you are painting, the moisture ratio must be lower than 15%. Painting in damp weather means that the final result will not be of the same quality, resulting in a shortened maintenance interval.

PAINTING EXTERIOR SURFACES

Use only microporous paints on external surfaces:

- 1) Check that the surface is dry.
- 2) Brush away loose dirt and dust.
- 3) Scrape away paint which is cracked or loose and scrape away any resin which may have been released.
- 4) Rub down wood with fine sandpaper.
- 5) Rub down the entire window with fine sandpaper until the paint appears matt.
- 6) Brush off shavings and sawdust.
- 7) Wash the window with a mild cleaning agent or a solution of one part ammonia to ten parts water.
- 8) If cracks have formed, for example in the corner joints of the casement and frame or on the window ledge, you should repair them with a suitable filler. Do not use caulking compounds which cannot be painted over.
- 9) Apply an oil/alkyd primer to the surface of the wood. Allow it to dry.
- 10) Apply a top coat of an oil/alkyd or acrylate paint. Apply several layers if necessary. You should not use acrylate paint on surfaces which are touching. They may stick together.
- 11) Be especially careful to apply plenty of paint to the lower parts of the window, on end-grain timber and on corner joints.

PAINTING INTERIOR SURFACES

Normally, you only need to clean interior surfaces. Wash the surface with water and a mild cleaning agent. If painting is necessary:

- 1) Rub down with fine sandpaper and removed sawdust.
- 2) Apply an alkyd primer.
- 3) Apply a second top coat of the alkyd paint.

MAINTENANCE OF STAINED WOODEN PARTS

Use only microporous stains on external surfaces.

- Outside, an oil/alkyd glaze (polymerised oil) is used which provides water-repellent elastic protection and which has good flexibility with the movement of the wood. With regards to the degree of pigmentation, you should consult your paint supplier. It is also possible to use a non-pigmented polymerised oil, but less pigment provides less protection against the sun's UV rays and if the wood is beginning to turn grey, the surface treatment has lost its protective effect.
- A non-pigmented semi-matt clear varnish (alkyd and amino resin), lustre 21, is used inside
- Check your windows properly at least once every year.
- If the exterior surfaces show signs of drying up, e.g. external cracks, mattness or greying, you should take care of the damage.
- Stained windows in exposed locations require maintenance at least once a year.

STAINING EXTERIOR SURFACES

- 1) Rub down the surface with fine sandpaper and scrape away any resin which may have been released.
- 2) Brush away loose sawdust and dirt.
- 3) Wash the area with a cloth soaked in white spirit.
- 4) Fill any cracks, e.g. in corner joints or on the window ledge, with plastic filler.
- 5) Apply pigmented oil/alkyd glaze (polymerised oil) to the wood surface using a cloth, sponge or brush.
- 6) If the surface appears dry, apply a second coat of the same oil/alkyd glaze (polymerised oil).

VARNISHING INTERIOR SURFACES

Normally, you only need to clean interior surfaces. Wash the surface with water and a mild cleaning agent. If varnishing is necessary:

- 1) Rub down with fine sandpaper and remove sawdust.
- 2) Use a brush to apply a non-pigmented semi-matt clear varnish (alkyd and amino resin), lustre 21, to the surface.

BLUE STAIN MOULD

All timber components used by NorDan are vacuum impregnated with a preservative treatment and then finished with a microporous (breathable) stain/paint. The product is fully capable of withstanding normal construction environments. However, if products are not cared for appropriately, there is a risk that blue stain mould can develop. One of the necessary conditions for blue stain mould to develop is excessive moisture content in the timber, from around 25%. With this in mind, it is important that the builder or contractor takes adequate measures to ensure the building is suitably ventilated during the construction process.

ALUMINIUM CLADDING/PROFILES

Aluminium parts may be mill finished or Paint Powder Coated in a wide range of standardised colours.

It is important that the aluminium cladding is monitored regularly for any contamination that can stain the surface finish. Any form of contamination needs removing before it damages the surface treatment. Otherwise, it is recommended that all aluminium cladding is washed and cleaned at least once a year as described:

- 1) Wipe the cladding with a soft brush to remove dust and loose foreign matter
- 2) Prepare a warm bucket of clean water with a little amount of detergent and wash down. Rinse clean and then wring the cloth to dry off after washing. A clean damp chamois leather is ideal for drying cladding without smears

Note: When cleaning cladding always be careful to avoid snagging your cleaning materials, or grazing your hands when working close to cut ends of cladding

Treating scratches

Because aluminium cannot rust, scratches are harmless (relatively speaking), but of course, they are noticeable. Try filling a scratch with a small amount of colour matching paint to make it less obvious. Visit your local paint specialist for advice on product/colour matching when preparing to carry out any works and proceed in accordance with the supplier's recommendations.

GENERAL MAINTENANCE: SURFACE TREATMENT

STANDARD PRE-FINISHES, NORDAN WINDOWS AND DOORS

NORDAN SURFACE TREATMENT

NorDan has more than 40 years of experience in providing factory-applied finishes to high quality timber products. During this time, there have been major advances in the technology and composition of paint products, all designed to enhance the appearance and performance of the finished product, whilst still being mindful of the overall effect on the environment.

It has been NorDan policy to make use of the best technology available to provide products of the highest standard of manufacture and finish for discerning, environmentally-conscious customers throughout Europe.

This has been achieved by use of the highest quality timber, sourced from sustainable forests with PEFC chain of custody, machined under strictly controlled quality-assured conditions, pressure impregnated with VOC approved preservatives, and then hand or hi-tech robotic arm sprayed to provide a smooth, even finish. All these processes are subject to regular in-house and independent external testing to ensure the finished products need no further attention at the time they are installed into a building.

PRODUCTS:

VACUUM IMPREGNATION
(NS EN 351-1 class NP3)
Protim P-VAC-11

BASE COAT

Akzo Nobel US Grunn
A polyurethane microporous base that prevents knots from ageing, provides excellent key for top coats, and leaves a smooth consistent finish.

Standard Pre-Finishes FINISHING COAT

Akzo Nobel USa 55
A water based semi gloss paint, specifically developed for windows and doors. It has many technical advantages, including excellent adhesion to the base coat.

In addition USa 55 is compatible with many other paint types, thus allowing easier maintenance when required.

TRANSLUCENT FINISHES

Sikkens
A water based, 2-pack stain finish with medium gloss.

CLEAR LACQUER

Akzo Nobel XV600
A semi gloss clear water based finish.

Clear lacquer and other weak finishes are unsuitable for external use due to the combined effects of UV radiation and weathering. NorDan will only apply clear lacquer and similar finishes to internal surfaces. It is important to carefully monitor the performance of less durable type finishes (see below- Notice).

TWO COLOURS

It is possible to have different opaque colours supplied internally/externally but not together with translucent, or any combination of translucent and lacquer. Opaque outside/lacquer inside is permitted. Please contact your local sales office for further information.

STANDARD PRE-TREATMENTS

Microporous paint:
Akzo Nobel US Grunn
Akzo Nobel USa55
Standard white USa55 NCS S0502 y

Translucent finish:

Sikkens

Clear lacquer (inside only):

Water based Akzo Nobel XV600
Other finishes available by agreement and to standard RAL and NCS colour ranges.

MAINTENANCE

Periods between maintenance will vary.

Akzo Nobel USa55 (microporous finishing) should last between 5-8 years on north facing elevations (lowest exposure), and whether or not facing directly south without any shade (highest exposure). Also subject to the colour chosen (mid range last longest).

All translucent finishes (including those used on furniture) are more susceptible to degradation by UV radiation from the sun, and thus require more frequent inspection and maintenance than USa 55.

External inspection should be carried out yearly after summer time, using a wire brush to see if any finishing is loose. If maintenance is necessary, scrape and fill any damaged areas then lightly sand the complete window down before renewing with your own choice of finishing in good time before winter.

Internal finishes require the same time and procedure as described for external, although not so frequently dependant on internal conditions, and in particular effective management of condensation.

AKZO NOBEL

Akzo Nobel is internationally recognised as a stain and paint supplier for industrial surface treatment. Akzo Nobel products are widely available throughout Europe.

PAINT SUPPLIERS

Finding the correct RAL, NCS or stain colour; this information will be within the paperwork you received when quoting your project. Please see image as below. If you bought your home then it is best firstly to speak to the builder who was dealing with this project. If you are unable to contact the builder then please contact your nearest regional office.

Should you need a paint supplier for replacement/touch-up paint/stain we recommend the following:

CROMADEX

<http://www.interpon.com/cromadex/Locations/United+Kingdom.htm>

Birmingham

Unit 5, Redwood Business Park, Oldbury Road
Smethwick, West Midlands, B66 1NJ
Tel: (0121) 558 5005

Bristol

Unit 3, Bush Trading Estate, Hammersmith
Road off Chalks Road, St George, Bristol
BS5 7AB
Tel: (0117) 935 4233

Bury St. Edmunds

Units 3-4, Woodlands Business Park, Rougham
Industrial Estate, Bury St. Edmunds
IP30 9ND
Tel: (01359) 271072

Glasgow

Unit 1, Kinning Parkway Industrial Estate,
43 MacLellan Street, Glasgow
G41 1RR
Tel: (0141) 427 7171

Leeds

Unit A, Millshaw Park Way, Millshaw Park
Industrial Estate, Leeds
LS11 0LS
Tel: (0113) 276 0653

London

Unit 3, Thurrock Park Industrial Estate, Tilbury,
Essex, RM18 7HZ
Tel: (01375) 851024

Manchester

Unit 1, Kansas Avenue Trading Estate, Salford,
M50 2GL
Tel: (0161) 848 7056

Newcastle

10 Nest Road, Felling, Gateshead, Tyne and
Wear, NE10 0ES
Tel: (0191) 438 4738

Northampton

16 Sketty Close off Caswell Road, Brackmills
Industrial Estate, Northampton, NN4 7PW
Tel: (01604) 706677

Portsmouth

Unit A14, Railway Triangle Industrial Estate,
Walton Road, Portsmouth, PO6 1TN
Tel: (02392) 201356

SOUTH WEST PAINTS

<http://www.southwestpaints.co.uk/>

110 Glasgow Road, Rutherglen, Glasgow,
G73 1UU
Tel: 0141 643 1691

GENERAL MAINTENANCE: SURFACE TREATMENT

EXTERNAL DOORSETS: PAINTED PRODUCTS (CYD, MFD, CGP, CSL, FANLIGHT)

ON DELIVERY

All painted products are factory painted with a primer and topcoat.

MAINTENANCE & CARE

Clean painted surfaces with lukewarm water and soap at least once per year depending on how exposed the surface is to sun, rain and wind. A painted product should also be treated with a liquid car wax (not containing abrasives or silicon) at least once per year in connection with the cleaning. If there are any signs of mould, use a cleaning agent that removes mould spores but does not scratch or dissolve the surface. Do not use paint strippers, scouring powder, steel wool or similar for this reason. Doors must regularly be checked for cracks and damage to the varnish. Any cracks or damage must be repaired immediately to prevent moisture from penetrating the construction. Be sure to check glass and decorative strips on the door. Restoration paint is available from your nearest paint supplier. NorDan recommend Dulux Trade Ultimate Woodstain Opaque with gloss 50 for this purpose.

Note: Doors painted in colours other than white must be maintained more carefully due to bleaching in direct sunlight.

Take care not to apply paint or oil to the silicon seal between the door and frame. This would impair the sealing function and elasticity of the material.

All door fittings included with the product have been surface-treated and should not be painted. This would impair their function. However, they should be maintained according to our maintenance instructions.

Note: Don't forget to treat the top and bottom of the door leaf as well.

Wood is a living material and the colour and grain structure may vary between different external storage doors. Doors with a veneered surface may have, or develop, small cracks in the surface due to sun, rain and wind. This does not affect the tightness or operation of the door and does not entitle the purchaser to compensation or to return the door. Because of this it is important to treat the door regularly with an additional protective surface coating.

GLAZED PRODUCTS

It is important to carry out regular tests of the tightness between the glass and glass seal. If the join loosens on the outside apply a silicon seal on the top seal/join. If the movement is unusually great due to the product being used in an exposed position pockets and looseness may occur in the external bottom join. This can be repaired by applying a new top seal (silicon seal).

NorDan's warranty does not apply to damage caused by deficient or insufficient surface coating or poor maintenance.

Note: Do not use façade tape when covering doors with plastic during façade cleaning. Use masking tape with low adhesive strength and remove immediately when the work is completed.

The door must move freely in its frame – otherwise continue to make adjustments! The door leaves in double doors must not touch each other either.

The surface of the installed doors will be affected by the degree of exposure to the elements, for example if the door is in a north facing position or a carport. Different doors in the same property may therefore need to be maintained at different intervals.



REPLACING/FIXING GLASS

INTRODUCTION

The following information provides basic recommended procedures for replacing and installing glazing units in your NorDan windows and doors. You will find instructions for replacing damaged glazed units and also securing glass in products that were specified 'dry glazed'. Read these instructions carefully to minimise risk of injury and also to make sure your windows and doors stay in good working condition.

The following instructions depict the three handled tilt & turn window for illustrative purposes, however the same guidelines apply to all glazed products from opening windows to fixed lights, sliding doors and inward and outward opening doors.

'Damaged Glazing': To replace a damaged sealed unit, always ensure you have the correct tools and correctly sized replacement unit (width x height) in order that the procedure is carried out in one operation. The make-up of the sealed unit can be found in the spacer bar or order and line number from the original paperwork.

'Dry Glazed': If your NorDan windows and doors have been delivered 'dry glazed' then you must ensure that the glazing unit is fixed correctly to improve safety and security following the specific instructions found here.

Note: This fitting instruction does not take into account the product positioning in the building and additional instruction may therefore be necessary, for example (but not excluded to) working with ladders, scaffolding, lifting or inspection platforms, cranes etc.

HEALTH AND SAFETY

The glazing company is responsible for the production of a method statement, risk assessments and COSHH assessments for the safe de-glazing and glazing of the NorDan windows and doors. As such, this information can only be used as a guide when preparing risk assessments and method statements for job specific activities.

Access arrangements are to be organised by the glazier, provision of competent persons to erect or operate access equipment or mechanical plant. The safe system of work (risk assessment & method statement), must consider all relevant health and safety legislation and therefore must have specific provision for the following:-

- Protection of the public
- Working at height
- Manual handling
- Personal protective equipment
- Disposal of glass

WHAT YOU WILL NEED

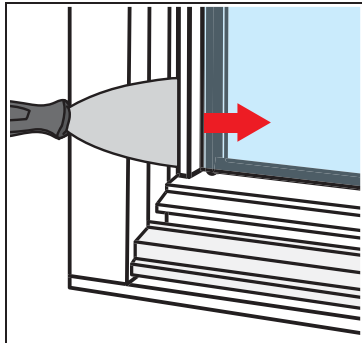
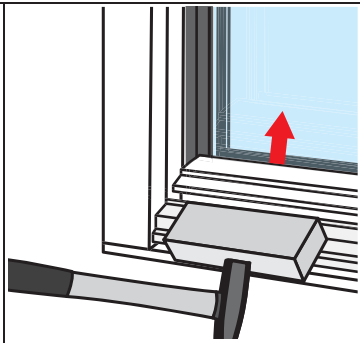
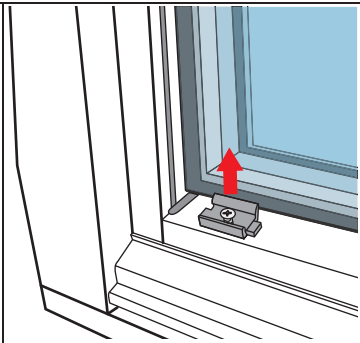
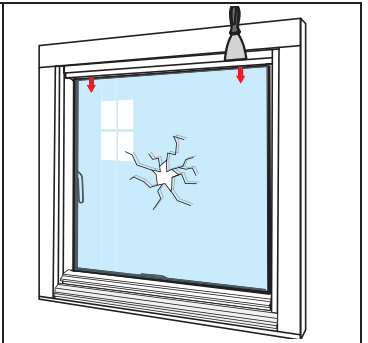
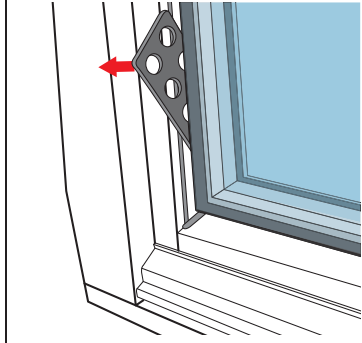
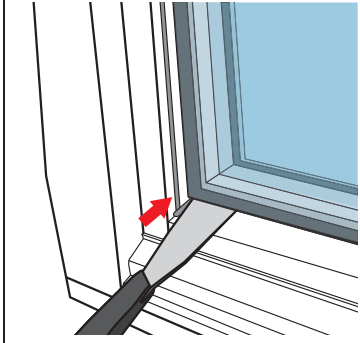
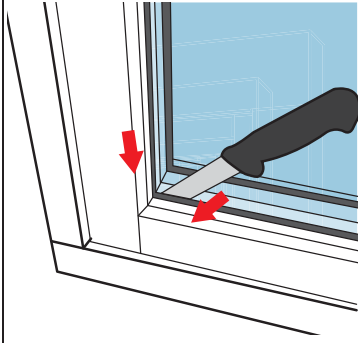
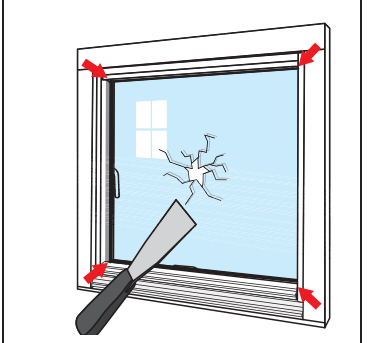
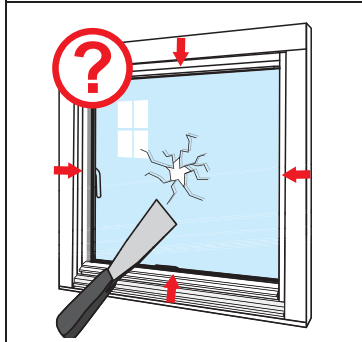
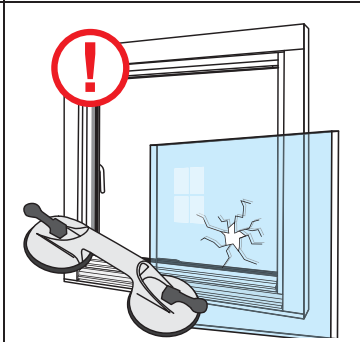
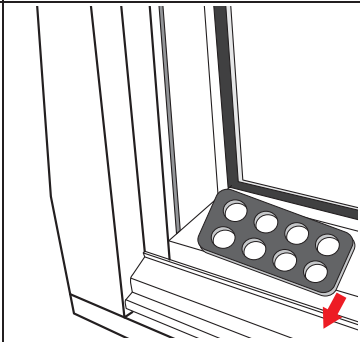
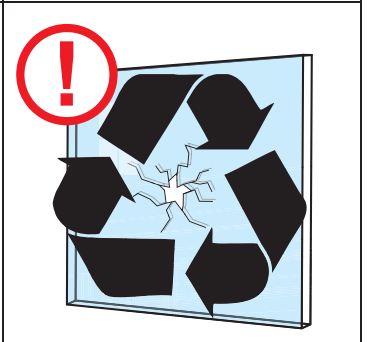
- Safety equipment including gloves and goggles
- Glazing packers of various sizes (3mm for the bottom but a variety for the top and sides in case the replacement glass size varies from the original)
- Torx screwdriver (size T15)
- Small star head and 13mm flat blade screwdriver
- Claw hammer and soft hammer
- Broad bladed tool (old paint scraper etc.)
- Long thin bladed tool (sharp putty knife)
- Timber block
- Standard and long-nose pliers
- "Fix All High Tack" (or similar adhesive/security glue)

If any screws are used, please ensure they have sufficient corrosion resistance to class A2 or better.

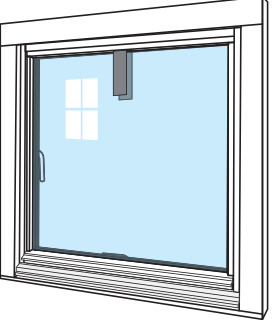
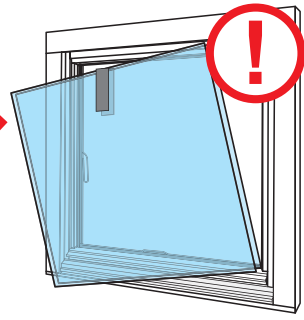
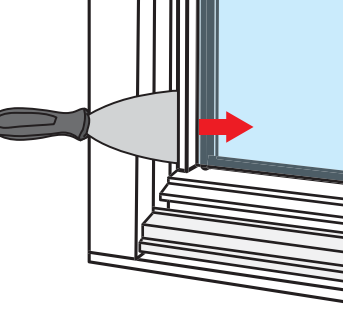
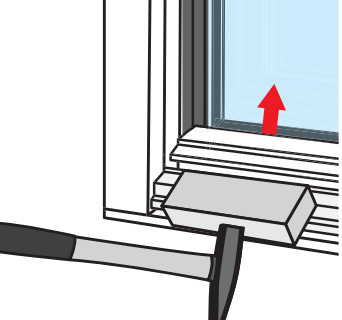
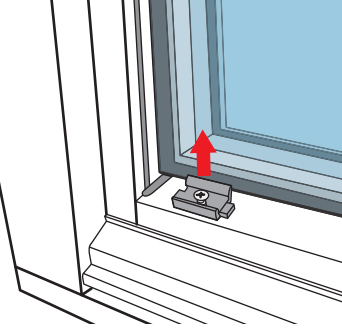
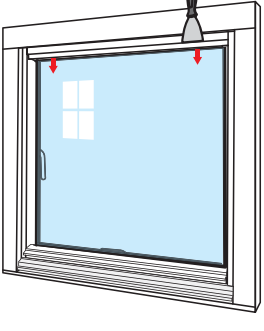
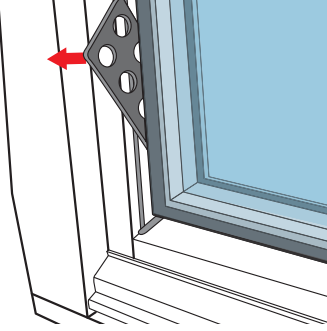
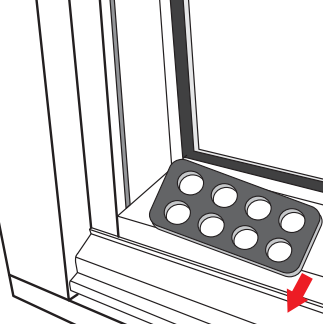
REMOVING WINDOW SASHES

It is sometimes advantageous to remove window sashes and door leaves prior to removing or fitting glazing. The following guidelines will help you carry out this procedure to health and safety requirements and in a controlled manner. Please note that at least two people are required to remove a window sash or door leaf safely.

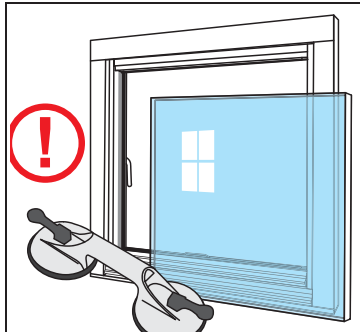
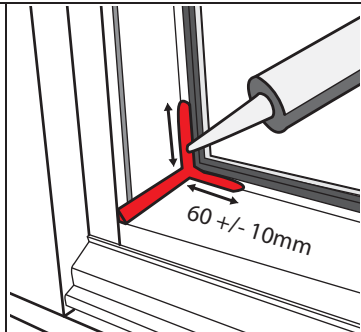
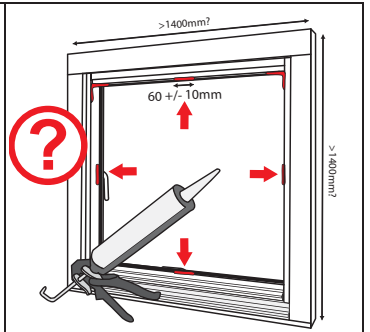

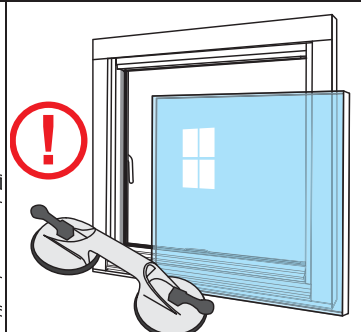
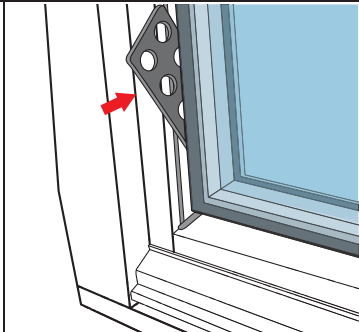
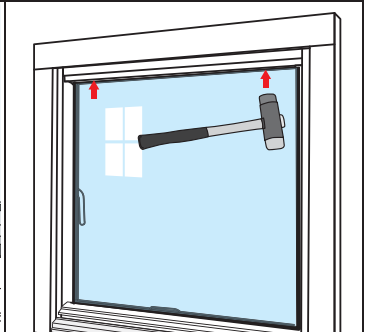
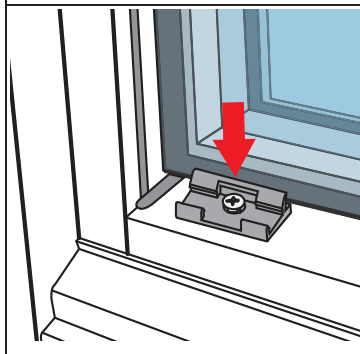
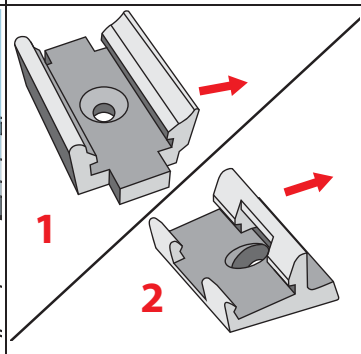
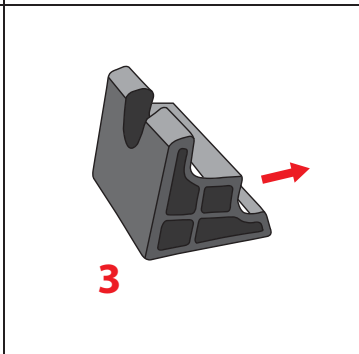
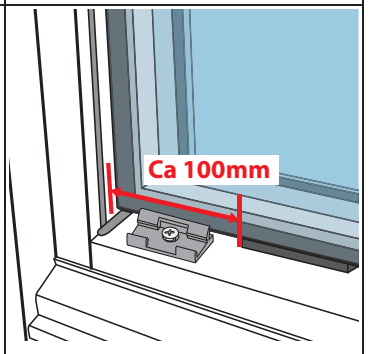
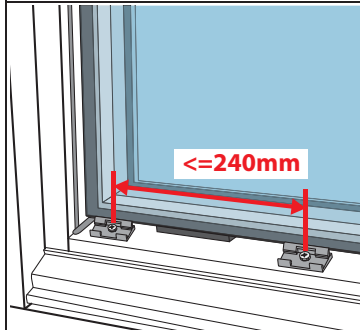
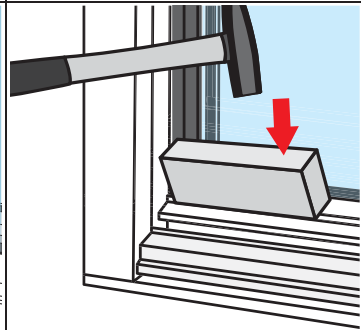
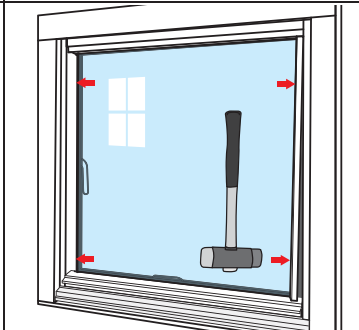
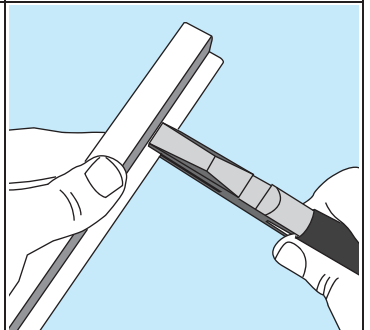
REMOVING BROKEN SEALED UNITS

 <p>1) Check glass is safe. Remove side glazing beads using a broad bladed tool</p>	 <p>2) Remove the bottom glazing bead using a block and gently tap upwards</p>	 <p>3) Remove the glazing bead clips from the sash using a screwdriver</p>	 <p>4) Remove glazing bead from the top</p>
 <p>5) Remove glazing packers from the top and sides, marking their locations, leave the bottom packers until the glass is removed</p>	 <p>6) Break the glue seals by cutting into and away from the corners from the outside</p>	 <p>7) Break the glue seals by cutting into and away from the corners from the inside of the window</p>	 <p>8) Repeat cutting the glue seal in all four corners, internally and externally</p>
 <p>9) If centres are glued, remove accordingly</p>	 <p>10) Take care when removing the glass from the sash</p>	 <p>11) Remove bottom glazing packers, marking their locations and scrape clean any areas where glue had previously been applied</p>	 <p>12) Dispose of the glass in accordance with your local guidelines / regulations</p>

REMOVING DRY GLAZED UNITS

 <p>1) Dry-glazed units have a ribbon at the top of the glazed unit</p>	 <p>2) Take care when removing the glazing beads as the glass is not secured</p>	 <p>3) Remove side glazing beads using a broad bladed tool</p>	 <p>4) Remove the bottom glazing bead using a block and gently tap upwards</p>
 <p>5) Remove the glazing bead clips from the sash using a screwdriver</p>	 <p>6) Remove glazing bead from the top</p>	 <p>7) Remove glazing packers from the top and sides, marking their locations, leave the bottom packers until the glass is removed</p>	 <p>8) Place the glass in a safe location ready for securing back into the sash and then remove bottom glazing packers, marking their locations</p>

FITTING GLAZED UNITS

 <p>1) Ensure the replacement glazed unit fits accordingly with any stickers on the glazing facing inwards</p>	 <p>2) Apply a run security glue in the bottom corners of the sash as indicated</p>	 <p>3) Apply security glue in the top corners of the sash but not front to back</p>	 <p>4) If the glass height or width exceeds 1400mm, apply additional security glue as shown</p>
 <p>5) Re-fit bottom glazing packers where previously marked (if applicable). For products supplied with loose glazing see the section 'GLAZING PACKER LOCATIONS'</p>	 <p>6) Insert sealed unit into the sash ensuring a good contact is made in each corner and that safety glass is installed facing the correct way</p>	 <p>7) Re-fit loose glazing packers as previously marked (if applicable). For products supplied with loose glazing see the section 'GLAZING PACKER LOCATIONS'</p>	 <p>8) Apply 30-50mm security glue on the bead approx 100mm from each end and fit the top glazing bead</p>
 <p>9) Fit bottom glazing bead clips, ensuring the clip faces the right way as indicated</p>	 <p>10) Clip type 1: grooved edge installed against the glass Clip type 2: tallest edge installed against the glass</p>	 <p>11) Clip type 3: As shown</p>	 <p>12) Glazing clips should be positioned approximately 100mm between the edge of the frame and the glazing packer</p>
 <p>13) Further clips are positioned along the bottom with distances of no more than 240mm</p>	 <p>14) Fit the bottom glazing bead into place</p>	 <p>15) Apply 30-50mm security glue on the side glazing beads approx 100mm from the top and bottom and fit.</p>	 <p>16) If any glazing beads are loose, crimp with pliers and apply further security glue if necessary</p>

GLAZING PACKER LOCATIONS

	<p>A) 50 - 100mm B) Extra location packer when door is in horizontal position on pallet C) Extra packer when glass width > 1600mm D) Only for tilt & turn windows Tolerance diagonal: D1 is diagonal dimension from main hinged side. $D1 \geq D2$ but no more than 1mm</p>		<p>A) 50 - 100mm B) Extra location packer when glass height > 1300mm C) Extra packer when glass width > 1600mm Tolerance diagonal: D1 is diagonal dimension from main hinged side. $D1 \geq D2$ but no more than 1mm</p>
<p>Tilt & turn windows, side hung and side swing windows, side hinged doorsets</p>	<p>Top swing windows, top hung windows, fixed lights and sliding doors</p>		

REMOVING EXCESS SECURITY GLUE WHEN DRIED (INTERNALLY ONLY)

<p>1) Using a glass scraper, cut vertically downwards into the corner of the unit</p>	<p>2) Remove any surplus glue from the glass by running the scraper horizontally</p>	<p>3) Ensure the corner is clean and dry</p>	<p>4) Check the other corners for surplus glue on the glass</p>



REMOVING SASHES AND DOOR LEAVES

It is sometimes advantageous to remove window sashes and door leaves prior to removing or fitting glazing. The following guidelines will help you carry out this procedure safely and in a controlled manner.

NOTE: Removing sashes and door leaves should only be undertaken by suitably trained personnel.

HEALTH AND SAFETY

NOTE: Please ensure that at least two competent people are required to remove a window sash or door leaf safely.





REMOVING A TILT & TURN WINDOW SASH (THREE HANDLED)

<p>1) Open the window into the side hung cleaning position (using the side and bottom handles)</p>	<p>2) Close the bottom handle with the sash open</p>	<p>3) Open the side handle on the 'hinged' side</p>	<p>4) Tilt the sash inwards by approximately 30° then lift it up and off the ball fitting</p>
<p>5) Uncouple the steel holding stay at the head by sliding the sash to the hinged side of the window</p>	<p>6) Store the sash safely</p>	<p>7) To re-install the sash, follow the procedure in reverse</p>	

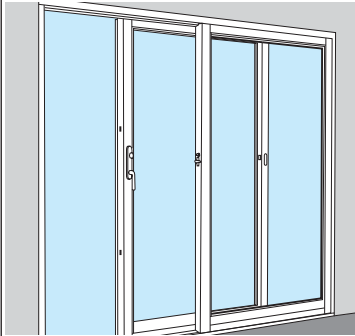
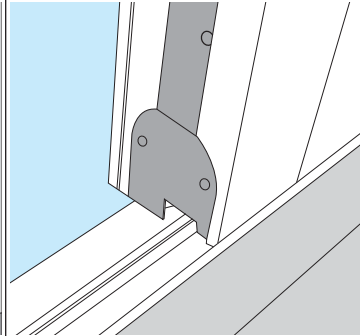


REMOVING A TILT & TURN WINDOW SASH (ONE HANDLED)

<p>1) Open the window into the side hung cleaning position (by turning the handle 180°)</p>	<p>2) Hold the button located in the side of the sash and turn the handle 90° into the ventilation position</p>	<p>3) With the sash at 90° to the frame, carefully lift up at the handle side and free the top restrictor arm, turning it to the side</p>	<p>4) Fully uncouple the steel holding stay at the head of the sash</p>
<p>5) Store the sash safely</p>	<p>To re-install the sash, follow the 6) procedure in reverse</p>		

REMOVING A BALCONY DOOR LEAF (SINGLE AND DOUBLE)

			
<p>1) Open the door by approximately 90° or more so that the door leaf clears the frame</p>	<p>2) Lift the door leaf off the hinges from the frame and store safely. Note: If a head fixing brake is installed, unscrew and remove prior to lifting the door.</p>	<p>3) To remove the secondary door (if applicable), follow the same procedure</p>	<p>4) To re-install the door-leaf follow the procedure in reverse</p>

REMOVING A SLIDING DOOR LEAF

			
<p>1) Open the sliding part of the door half way</p>	<p>2) Lift the door evenly so the lower rollers clear the sliding track</p>	<p>3) Lift the bottom of the door out and remove, storing it safely</p>	<p>4) To re-install, follow the procedure in reverse</p>



INSTALLATION

GOOD BUILDING PRACTICE

When installing and fixing NorDan windows, good site building practice should be employed at all times, including all Health & Safety observances. NorDan takes no responsibility for fitting carried out improperly by others.

NorDan working methods and installation recommendations are based on the requirements featured in BS 8213-4: 2007, 'Code of practise for the survey and installation of windows and external doorsets' and Section 6 GGF data sheet 'Installation of windows and doors in domestic properties', 1996.

Copies of the publications are obtainable from:

Bsi, 389 Chiswick High Road, London, W4 4AL
Tel: 020 8996 9000
(<http://shop.bsigroup.com/en/ProductDetail/?pid=000000000030151737>)

Glass and Glazing Federation, 44-48 Borough High Street, London, SE1 1XB
Tel: 0171 403 7177
(<http://www.ggf.org.uk/publications>)

NorDan recommend that all installers obtain copies of the publications and comply with them while following these manufacturers' recommendations.

NorDan products are made to a very high standard and it is essential that this is not compromised in the installation process. The suggestions and guidelines included in this leaflet are intended to help ensure that this does not happen.

Whether in the measurement, the sizing, the site handling and storage or the installation of NorDan windows, it is always preferable to employ good practices to ensure maximum satisfaction with the finished article.

We look upon our products, not as building components, but as high quality furniture to be carefully handled and installed at all times. This will ensure there are few maintenance problems during the product's lifetime which will consequently be a long one.

The following are some practical measures to help achieve this:

- Never install into an incomplete opening or a building without a fully installed, weather-tight roof
- Store goods under cover in a dry and ventilated space until they are installed
- Use soft packers to keep frames from rubbing or touching one another when in store
- Store units vertically, NEVER horizontally
- Handle the products like furniture. Wear clean gloves to protect the finish
- Encourage other trades to respect and not abuse installed windows and doors
- Follow all the guidelines in this leaflet
- Protect the products after installation

MANUFACTURING SIZES

CALCULATING MANUFACTURING SIZES

Before adopting dimensions shown on architects' drawings to determine manufacturing sizes, consider the following:

- Tolerances within the openings to ensure windows / doors can be fit plumb and square leaving sufficient gaps for sealing / pointing
- Sufficient space at the bottom of the window to incorporate the NorDan extension cill (if required)
- It is strongly recommended that sizes are taken from prepared openings prior to production.

Tolerances

Normally, a nominal gap of 10mm at either side and at the head of the frame is sufficient to allow a plumb & square fit and achieve a suitable sealed joint between frame and wall (see Fig1 and 2). Always avoid gaps of less than 5mm as this encourages capillary action of water and leaves insufficient space for a proper polyurethane foam fill.

Cill considerations

As there is a large variety of cill scenarios, it is advisable to consult your local NorDan office for advice on the appropriate tolerance and the most suitable aluminium extension cill. If the construction detail includes a cant brick then the chances are, a nominal tolerance of 6-7mm will ensure the cill detail works (see Fig3).

If the cill detail includes a flat surface then the threshold may need raising to allow for cill slope and reach perhaps by as much as 40mm or more (see Fig4).

Whatever the final solution is, deduct the required allowance for the cill detail from the

overall height then apply a suitable fitting tolerance.

Fully Reversible Windows

If you are fitting a fully reversible window behind a check in the outside skin of a cavity wall then the window should have no more than a 10mm 'cover' at the jambs and head to ensure the sash operation is not obstructed.

MEASURING AND SURVEYING

When surveying, measure old or new openings to establish both vertical, horizontal and diagonal measurements.

Outward opening windows

Diagonal measurement
Compare and adjust to the nearest squared size available.

Width

If the reveal is stepped by internal plaster and the new window is to butt up to the plaster then check the new window frame thickness. This ensures the sash will open outwards with no obstruction and determines the required width for manufacture.

Height

Check the cill detail in accordance with the recommendations to establish the overall height tolerance required (see Fig. 4).

Check that the trickle vent (if required) will be clear of ceiling plaster and if the internal lintel (soffite) is or will be tiled. Adjust the manufacturing height accordingly to ensure the trickle vent will operate freely.

Don't forget to make allowances for window boards, existing or proposed.

Inward opening windows

Diagonal measurement
Compare and adjust to the nearest squared size available.

Width

If the reveal is stepped by internal plaster and the new window is to butt up to the plaster then check the new window internal frame dimension to ensure the sash will open inwards without obstruction. Determine the required manufacturing width accordingly.

If the reveal is stepped by internal plaster and the new window is to be drawn in over the plaster then check the new window internal frame dimension to ensure the sash will open inwardly without obstruction. Determine the required manufacturing width accordingly.

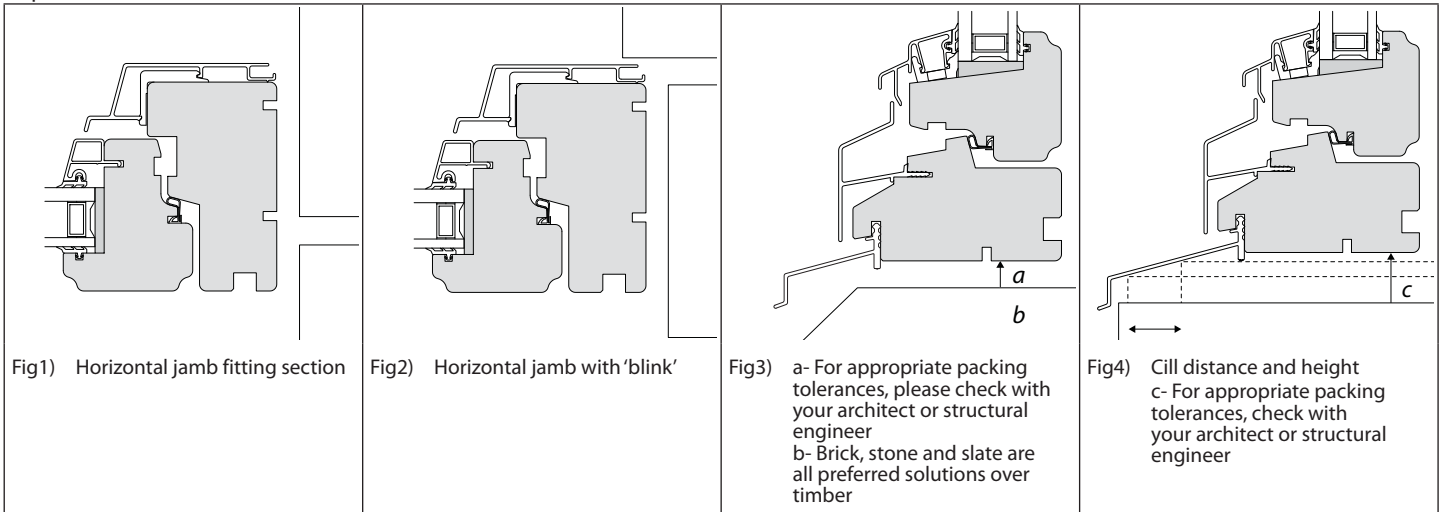
Where a wall is tiled and if the window is to be drawn in over the tiles then determine the required manufacturing width accordingly.

Height

Check the cill detail in accordance with these recommendations to establish the overall height tolerance required.

Check the trickle vent (if required) will be clear of ceiling plaster and if the internal lintel (soffit) is or will be tiled. Adjust the manufacturing height accordingly to ensure the trickle vent will operate freely. Don't forget to make allowances for window boards, existing or proposed.

NOTE: Record all external and internal sizes so that all internal/external finishing materials can be procured in time to ensure installation is fully completed on the day of installation.



DELIVERY, HANDLING AND STORAGE

DELIVERY

Checking Delivery

The delivery is subject to inspection of the goods. The inspection will be carried out by the installers, recipient of goods/contractor or a staff member of NorDan UK Ltd.

The contractor/installers are responsible for any damage to exposed surfaces and must report damage before handling (while checking delivery) and not afterwards.

When all the pallets are off-loaded the number of pallets and parcels must be totalled and checked against the delivery note & signed for.

HANDLING

Products will arrive to site on shrink wrapped pallets.

Off - Loading

Pallets are to be removed from the delivery lorry one at a time with the aid of a site forklift, crane, teleporter, hiab

Slinger/signaller

All off-loading must be Supervised by a qualified Slinger/Signaller, with the aid of a trained Banksman. This is a very important issue, specifically when using cranes.

The site lifting plan must be inspected and followed at all times. Pallets must be constructed well and loaded diligently.

Manual handling

Ensure the correct PPE is available and worn.

First rule of manual handling:-

- Mechanise wherever possible

If this is not possible / practicable -

- Reduce the size of the load
- Calculate/know the SWL (safe working load)
- Get a suitable amount of people around the load

It is always good practice to get a breakdown of the weights of the windows/doors. 25kgs per man is the benchmark for manual lifting, however, this is not always practical.

Kinetic lifting practices must be used at all times to prevent injury and damages to products. Always remember, never continue with a lift if one member of the team is not comfortable.

SAFE HANDLING OF GLASS

Same rules apply for as for manual handling with the following additions:

- PPE gloves, eye protection, hat, boots
- Lifting equipment
- Mechanical or manual
- Weight of glass
- Route to destination clear
- Final installation point ready
- Ensure safe access & egress to the workplace
- Ensure all persons involved with lifting understand what is required.
- Ensure the intended opening has been suitably prepared.

Disposal of broken glass

- Glass should be removed directly to a designated skip wherever possible
- Utilise steel/plastic bins if carrying broken glass to the skip
- If possible apply self adhesive film to the glass before breaking/removing
- Always wear gloves, goggles/glasses and wrist protection

SITE STORAGE

- The pallets should be stored in a dry ventilated area.
- The Polythene wrapping must be taken off the pallets to prevent the build up of condensation on the windows.
- The pallets should be stored in an orderly fashion.
- The Installers / Contractor are responsible for goods once they are on site.

Stripping down the pallets

Never remove packing with tools working towards the inside or outside surfaces. Always remove staples and timber away from the exposed surfaces and by working against the hidden surfaces.

Loading out

Move windows from loading area by hand with use of pallet truck and /or trolley. DO NOT LIFT WINDOWS OVER 25kg without sufficient help.

Loading out / stacking

The goods should not be stored in a way that abrasion, damage or risk is possible. Windows must be stacked and protected carefully. The goods should only be stored with handles engaged (i.e. locked).

INSTALLATION PROCEDURES

REMOVING OLD WINDOWS

For detailed information relating to the installation of replacement windows and doors, please contact the Glass and Glazing Federation: <http://www.ggf.org.uk/>

1. Make sure that each installation can start and finish as a single safe and efficient operation.
2. Never remove a window before checking the new window is of the right type and particularly THE RIGHT SIZE.
3. Always de-glaze before attempting to remove old window frames.
4. When levering against the building to prise window frames out, always use a timber block against the building to protect brick surfaces and avoid bricks breaking free.
5. Place all old glass immediately into a secure and safe container (bin box or dustbin with a lid only removed when needed).
6. Always remove windows while working in a protected area with a suitable floor covering to gather up loose or broken glass and other debris to reduce the risk of injury to you and others.
7. NEVER work without PPE.

PREPARING THE OPENING

Building in windows or doors is NOT RECOMMENDED by NorDan and will result in the withdrawal of the guarantee.

Never install into an opening where the cill section (bottom) is damaged or missing. Neither install into an opening which is in any way incomplete.

Always first clean and, if necessary, arrange for or carry out the repair of opening thresholds before installing.

Cill packers

When the opening is level and clean of debris, apply a mastic coating of sufficient thickness to lay the window or door-set on top to form a totally airtight and waterproof seal.

If the threshold surface is not level then apply a bed of mastic / foam sealant and lay packers as required to make level. If making level can be achieved by way of moderate use of packing then that will suffice and the installation may continue. When fixed, apply further mastic along the length to ensure a total seal as described above. Packers must be solid, rot proof, and of a size to maximise load transfer without any risk of the product dropping after installation.

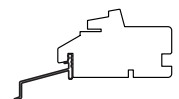
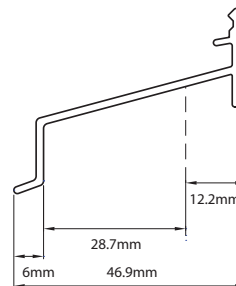
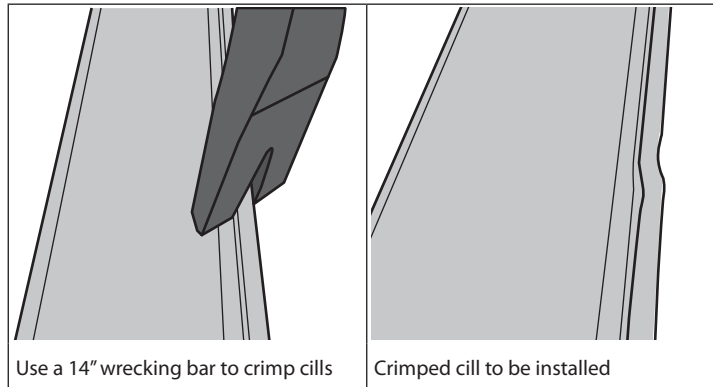
If the installation requires a packer of whatever thickness then first ensure the threshold is clean of debris before applying a mastic or waterproof foam coating of sufficient thickness to lay the packer on to form a totally airtight and waterproof seal. Mastic the top and proceed accordingly. In such cases the packer must be continuous and suitably treated against rot and decay. If necessary, additional small packers may be added to on top of the first packer as previously described.

ALUMINIUM EXTENSION CILLS

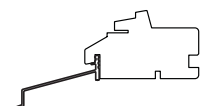
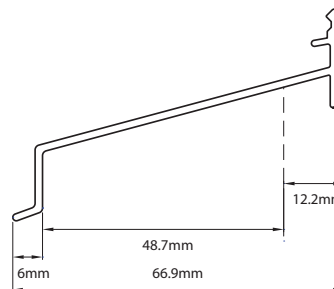
NorDan's aluminium extension cills attach directly to the threshold/cill section to divert water or moisture away from the fabric of the building.

Cills can be fitted after installation of the product. First, apply security glue along the cill groove with 50mm strips applied every

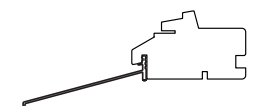
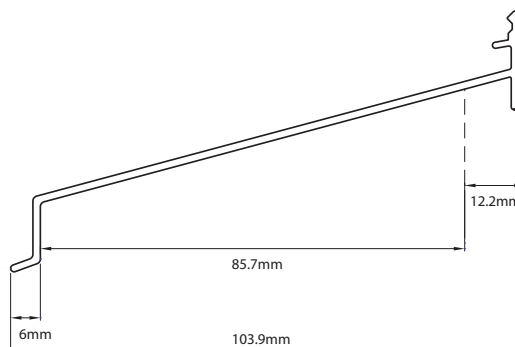
500mm. To ensure the security glue sets correctly with the cill in place, crimp the cill before fitting. This can be carried out by using a 14" brute wrecking bar and crimping the top of the cill as shown every 600mm with a quarter turn.



RAS 410
DXF 034106000



RAS 419
DXF 034196000



RAS 421
DXF 034216000

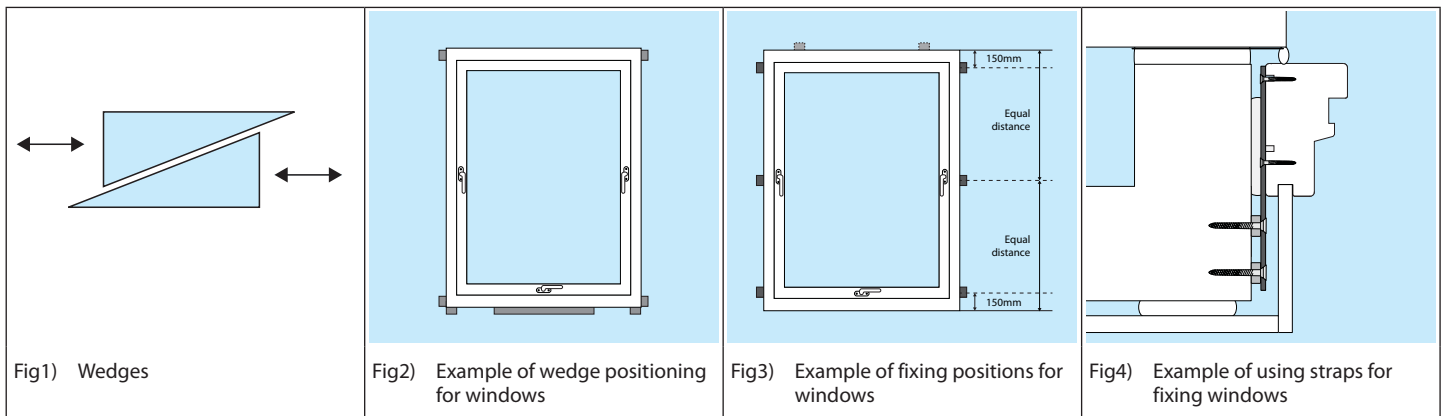


Fig1) Wedges

Fig2) Example of wedge positioning for windows

Fig3) Example of fixing positions for windows

Fig4) Example of using straps for fixing windows

WEDGES

It is recommended that wedges are first used when setting the frame square and plumb prior to fixing. Ensure that the wedges are dry. Use two wedges (see Fig. 1) for each corner of the frame (see Fig. 2), this will apply an even pressure without twisting the frame.

Check the plane with other windows (before installing) and position the frame accordingly.

Wedges should never be used for the fixing of the window. Mechanical fixings should be used at all times. After packing and fixing, wedges should be removed.

PACKERS

Packing alongside fixings must be of a size and shape to effectively transfer the fixing load into the main structure without twist or bow. Vary the thickness of packers to ensure the sides are plumb and square without causing twist or bow.

Before finally fixing the window frame into the opening, position the packers to create a secure fit. Two wedges should be used on each corner. Place the wedges only on the end grain. Pressure on the wedges should not be so great that the frame is forced to bow, twist or bend. Use only rot-proof packers. Do not force packers into the opening as this may cause distortion of the frame.

Use a continuous packer under the frame if required. The depth will vary depending on the sub-cill detail.

Where U shaped packers are required these may hang over the fixings but should provide a sufficient surface area to enable transfer of load.

FIXINGS

As there are a variety of recommended installation procedures, NorDan offer the following recommendations:

- Fixings must be capable of transferring loads directly to the main structure
- Frames should be fixed square and without twist (to avoid 'springing and bowing')
- Never 'persuade' joinery into an opening. It either fits or it doesn't!
- Talk to us. We are here to help you

Position of fixings

Fix sides 150mm from the top and bottom and no more than 600mm apart (see Fig. 3). This will depend on the overall width of the window and degree of exposure. Head fixings may also be required. Please check with NorDan if you are uncertain. All fixing points must be packed.

Frame positioning

For flush jambs, there should be a minimum distance of 25 to 35mm from the front of the frame to the brickwork face. In all cases, set the window as far back as possible for better weather performance.

In general windows fixings are required a minimum 25mm deep into sound material with door fixings comprising expanding bolts or other high grip devices 50mm deep. NorDan recommends all fixings are at least 50mm deep into the main structure excluding plaster.

Fixing the window (direct fixing)

Avoid drilling fixings in straight lines. Always stagger them across the depth of the frame to avoid the frame twisting.

- Use packers at the screw points to fill the tolerances between frame and wall.
- Drill through frame and packers to spread the load of the fixing screw, avoiding twist / bow of the frame with a depth of at least 50mm into solid brickwork or the main structure.
- Plug the drilled hole and screw. Fix and tighten.
- Check for twisting or bowing and adjust accordingly.

Head and cill fixings

Apply a fixing in the head and cill if necessary, if the window exceeds 1200mm in width. Do not puncture water trays or DPCs! Employ a head and / or cill fixing also:

- If the opening is not sound
- Where window frames are coupled
- If the contractor's structural engineer recommends them
- When common sense and good building practise demand

If a window or door has an integral trickle vent, ensure that the head fixing does not cause any interference.

Straps (indirect fixing)

If using straps, then only use a rust-proof metal of a size and dimension to ensure that weight / load distribution goes directly into the main structure see Fig. 4).

Always move fixing straps as necessary to avoid fixing in mortar joints or edges. The product loading MUST be transferred to the main structure with positive fixing.

Straps should be rust-proof, minimum 3-5mm thick, 30-50mm wide and long enough to ensure a secure fixing directly to the main structure. It is highly recommended that straps are not bent to shape but packed to create a secure fixing. In extreme circumstances, straps can be bent prior to fixing to the window. In all other cases, straps must be packed to ensure a correct fixing. The above is for guidance only, all fixing details should be confirmed by your structural engineer.

Fixing straps should always be screwed with at least two screws in the window and two in the wall. One fixing (frame and wall) may cause the frame to drop!

In all cases of fixing

Apply fixings only to the main structure and always into solid grounds (avoid mortar joints, brick or block edges). Employ direct fixing into the main structure in preference to back strapping if possible. Use appropriate fixings.

Pay particular attention to large windows and doors, where the weight of the opening sash or door leaf requires strong direct fixing to the main structure (the lack of which can be the cause of sash / door leaf dropping and subsequent misalignment [and failures] of multi-point locking). NEVER use flexible fixing straps (the most common cause of plaster cracking around installations and doors dropping!). Make sure the gap between the inside of the frame and opening light is equal all the way round after fitting. Check the opening light opens and closes easily during installation. Check again after installation.

Recommended fixings

(Subject to any requirements of structural engineer)

Direct fixing windows

Outward opening

Type: No. 8 with suitable size plug and type according to main structure.

Length: 75mm to 100mm unless otherwise required to reach 50mm depth into solid main structure (no near edge or mortar joints).

Inward opening

Type: No. 8 with suitable size plug and type according to main structure.

Length: 125mm to 150mm unless otherwise required to meet 50mm depth into solid main structure (no near edge or mortar joints).

Direct fixing door sets

Outward or inward opening

Type: Expanding bolts or other high grip devices with or without suitable size plug and type according to main structure.

Length: As required to meet 50mm depth into solid main structure (no near edge or mortar joints). Always ensure that if a fixing is not immediately adjacent to the uppermost door hinge (within 50mm) then add an extra one (this is the most critical load point of any side hung door).

Fixing straps to windows

Fixings for straps to window frame

Type: No. 8

Length: 30mm (or as required)

Wall fixing

Type: 'Rawl' No. 8 or similar

Length: 80mm unless otherwise required to meet 50mm depth into solid main structure (no near edge or mortar joints).

Fixing straps to doors

Type: **NOT** recommended unless a Structural Engineer confirms suitability and specifies the fixings.

Composite assemblies (screens)

Type: Refer to a Structural Engineer.

FOAM FILLING APPLICATION

Fine spray all surfaces with water before using expanding foam (provides a better seal and helps the foam to go further). Use only polyurethane foam which must be applied in accordance with the manufacturer's recommendations. The foam provides the main thermal barrier and is therefore critical. Apply expanding filling foam to build up a barrier. Aim for a minimum 50mm thickness. Inject preferably from the inside. Check the foam around the packers for gaps after curing and fill them. Be prepared to brace goods to stop expansion. Remember; foam applied in the winter can re-activate in the spring! Take careful note of manufacturers recommendations.

Note: When foam is applied all straps must be securely fixed to NorDan's recommendations. If not, the frame may distort with the pressure of the applied foam.

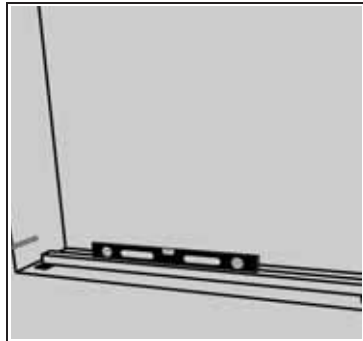

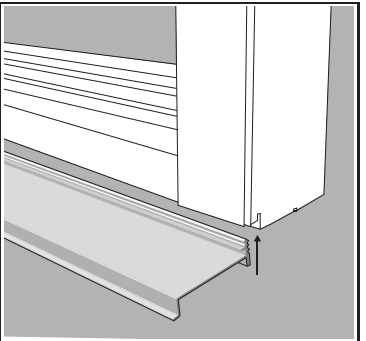
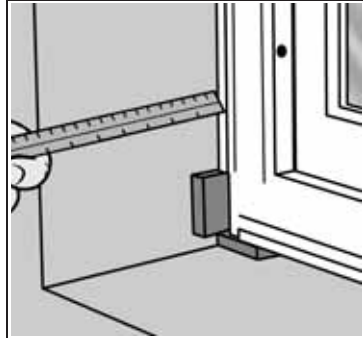
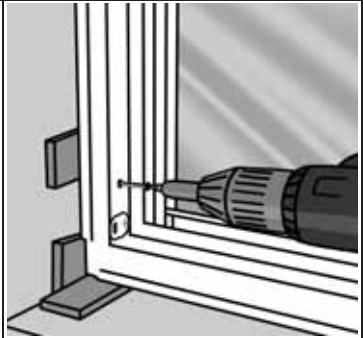


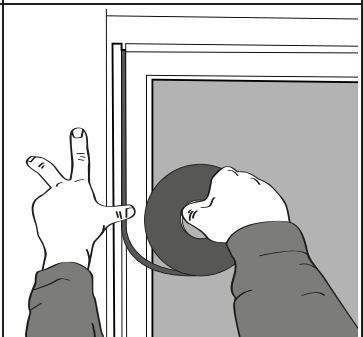
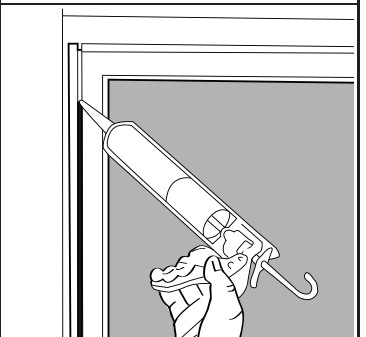
MASTIC APPLICATION

Please note that these recommendations do not rely on mastic to form the main weather seal, which is provided by fire resistant polyurethane foam or similar material. Providing mastic application stops short approx. 12mm from the bottom of jambs, the partially enclosed timber surfaces are allowed to 'breathe' and the air flow behind the mastic will create a self-draining, self-ventilated atmosphere.

INSTALLING WINDOWS

HEALTH & SAFETY

Remember to employ safe lifting methods at all times and ensure the procedure is carried out in one simple operation.

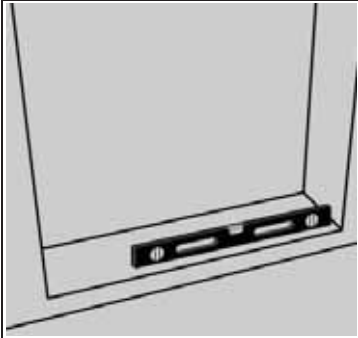
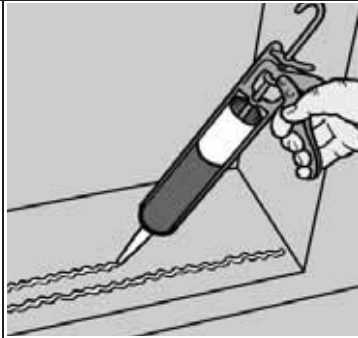





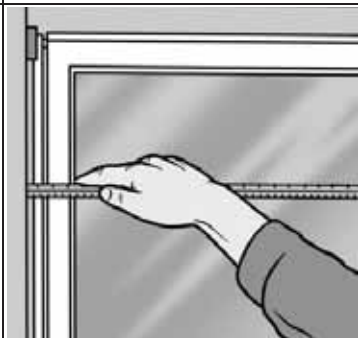
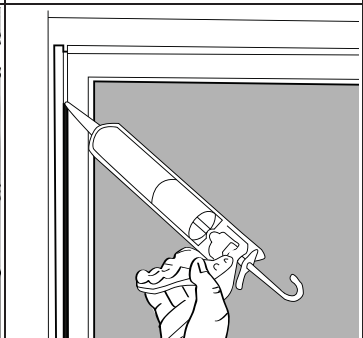
		
<p>1) Inspect opening Check that the opening is clear of debris and is structurally sound. Check that the measurements of the opening match the window for installation allowing for tolerances and that the opening is plumb and square</p>	<p>2) Remove sash if the window is inward opening. It is not recommended that outward opening sashes are removed</p>	<p>3) Fit aluminium extension cill (if applicable). Aluminium extension cills should first be crimped before fitting to the underside of the frame. Fix in place using recommended security glue</p>
		
<p>4) Insert the window frame into the prepared opening using wedges for levelling purposes on the end grain. Do not force wedges into the gap in any other location as this may distort the frame</p>	<p>5) Fix frame into opening The type of fixings (direct fixing or indirect fixing using straps) used to secure the frame is dependant on the structure of the building. Remove wedges after fixing</p>	<p>6) Insert the sash into the frame and carefully apply downward force (for three handled and one handled tilt and turn windows depending on size). This will remove any slackness in the glass packing and fittings which effectively reduces future wear and tear</p>
		
<p>7) Adjust fixings Adjust the fixings until the sash operates smoothly. Check that there is an even clearance between the sash and frame</p>	<p>8) Apply expanding foam or foam tape (if applicable) Spray all surfaces with water before using expanding foam, ensuring any manufacturer guidelines are followed</p>	<p>9) Apply mastic (if applicable) Apply an even bead of mastic around the window / wall junction or fit a cover facing if required</p>

INSTALLING SINGLE AND DOUBLE BALCONY DOORSETS

HEALTH & SAFETY

Remember to employ safe lifting methods at all times and ensure the procedure is carried out in one simple operation.

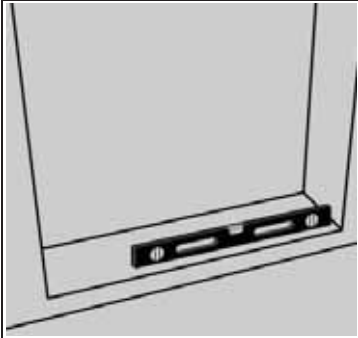
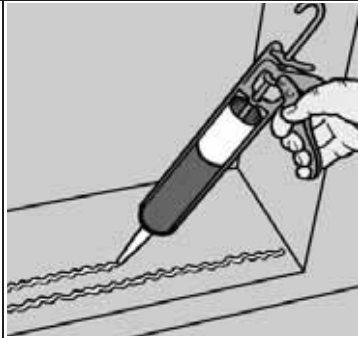





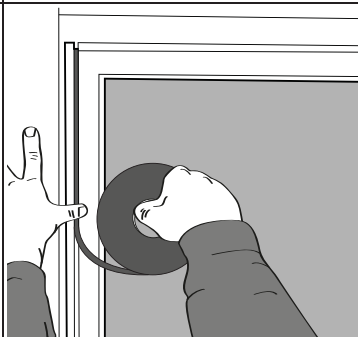
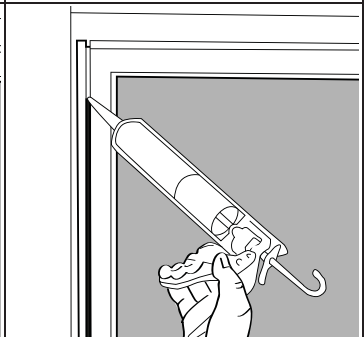
Note: Where the main structure is incapable of taking the load or providing a secure permanent fixing, refer to the contractor or client. If the main structure is timber frame, check that it is fully treated and protected from swelling.

		
<p>1) Inspect opening Check that the opening is clear of debris and is structurally sound. Never install a door into an incomplete opening. Check that the measurements of the opening matches the door for installation, allowing for fitting tolerances and that the opening is plumb and square</p>	<p>2) Prepare floor The floor should be flat and level with the door width. Use mastic between the door cill and underside of the door threshold to ensure a good seal.</p>	<p>3) If the base is of a concrete construction, a DPC must be placed under the whole length of the threshold. Place door onto a bed of mastic</p>
		
<p>4) Remove door from frame First remove any transportation packers from the bottom of the door leaves. Open the door by 90° and lift the door leaf off the hinges. Do not attempt this on your own. Observe health and safety guidelines at all times. Put the door leaf (leaves) in a safe place.</p>	<p>5) Place the frame in the opening, securing firstly with rot-proof dense wedges.</p>	<p>6) Make sure the frame is level and plumb without twist. The hinged side must be level both ways before it is fastened with screws. Do the same with the lockable side (or the other hinged side on double doors). Note: For timber frame, fix 38 x 50mm fire-stops to top and both sides. Screw through the fire-stops onto the timber frame.</p>
		
<p>7) Check levels and fixings Refit the door leaf (leaves) then carefully apply downward force. This will remove any slackness in the door and fittings which effectively reduces future wear and tear. Check screws are tight</p>	<p>8) Check that the gap on the lockable side is a little less than on the hinged side. Note: For double door sets, use an Allen Key to adjust the slip bolt keepers (positioned at top and bottom of frame) until the fixed leaf is tight against the seal on the frame.</p>	<p>9) Apply expanding foam, expanding tape and/or mastic (if applicable) Spray all surfaces with water before using expanding foam. Apply an even bead of mastic around the door / wall junction or fit a cover facing if required</p>

INSTALLING SINGLE SLIDING DOORSETS

HEALTH & SAFETY

Remember to employ safe lifting methods at all times and ensure the procedure is carried out in one simple operation.

		
<p>1) Inspect opening Check that the opening is clear of debris and is structurally sound. Never install a door into an incomplete opening. Check that the measurements of the opening matches the door for installation, allowing for fitting tolerances and that the opening is plumb and square</p>	<p>2) Prepare floor The floor should be flat and level with the door width. Use mastic between the door cill and underside of the door threshold to ensure a good seal</p>	<p>3) If the base is of a concrete construction, a DPC must be placed under the whole length of the threshold. Place door onto a bed of mastic</p>
		
<p>4) Remove door from frame Do not attempt this on your own. Observe health and safety guidelines at all times. Put the sliding door in a safe place</p>	<p>5) Place the frame in the opening, securing firstly with rot-proof dense wedges</p>	<p>6) Make sure the frame is level and plumb without twist. The frame must be level both ways before it is fastened with screws. Note: For timber frame, fix 38 x 50mm fire-stops to top and both sides. Screw through the fire-stops onto the timber frame</p>
		
<p>7) Check levels and fixings Refit the door and re-fasten all the screws checking that fixings are the correct distance apart</p>	<p>8) Apply expanding foam or foam tape (if applicable) Spray all surfaces with water before using expanding foam, ensuring any manufacturer guidelines are followed</p>	<p>9) Apply mastic (if applicable) Apply an even bead of mastic around the window / wall junction or fit a cover facing if required</p>

INSTALLING EXTERNAL ENTRANCE DOORSETS

In order for a door to work in the way it was designed to do and to avoid it becoming warped and draughty it must be mounted in the correct way. These instructions describe the main elements involved in mounting your NorDan external entrance doorset. The most important element is that you are careful and not in a hurry.

Our installation instructions are based on professional industrial guidelines and recommendations and we urge you to follow them. NorDan will provide a faultless and complete product but the way in which the product is installed is your responsibility or the people working on your behalf. Certain circumstances may arise which only a trained installer can make decisions about on site.

If you have not checked the measurements beforehand do it now: the measured space in the wall will be the outer frame measurement (the exact measurement of the door) plus between 10 and 20 mm on the width and height.

All door frames can be pre-drilled if requested to ensure site fittings with appropriate screw fixings. Remember to choose a retaining screw that matches your wall, see below:

- In wood
Drill hole for fixings screws spaced at 600mm centres max., and 300mm from each corner. Use screws, Adjufix or other adjustable fixings to securely fix the frame.

- In concrete
Drill hole for fixings screws spaced at 600mm centres max., and 300mm from each corner. Fix the frame by screwing it in to pre-embedded blocks or strips of wood, or with expanding anchor fixings directly into the concrete. Frames which are installed with insulation material must be secured with minimum of 1,5 X 25mm steel plates. The steel plates must be hot-dip galvanized and checked by your structural engineer.

In brickwork, concrete blockwork or the like: Drill hole for fixings screws at 600mm centres max., and 300mm from each corner. Fix the frame by screwing into wooden wedges driven into the joint between the bricks/blocks, or into fibreboard placed in the joints, or with expanding anchors. Wedges and boards should have a width of 20mm less than the frame depth. Boards must not be embedded in mortar.

In lightweight concrete blockwork or the like: Drill hole for fixings screws at 600mm centres max., and 300mm from each corner. Fix the frame by nailing it directly into the lightweight concrete, if the lightweight concrete has a density of 500kg/m or higher, with cut nails or lightweight metal nails. The nails shall be spaced at maximum of 600mm between the nails and 300mm from each corner. Use expanding anchors and screws in lightweight concrete with a density of less than 500kg/m.

DOUBLE DOOR INSTALLATION

For double doors the top section of the frame may need additional securing. The threshold of double doors has an adjustable strike plate that can be adjusted to provide the desired closing pressure for the passive door. This might also have to be adjusted if vibrations

occur when closing the active door. Use a 14-mm Allen key for adjustments. In order for the lock to function properly make sure that both doors are correctly adjusted laterally.

The door must move freely in its frame – otherwise continue to make adjustments! The door leaves in double doors or garage doors must not touch each other either.

NOTE: Do not use façade tape when covering doors with plastic during façade cleaning. Use masking tape with low adhesive strength and remove immediately when the work is completed.

JOINING AND CAULKING

The installation join between frame and wall must have the same properties as the wall and should therefore be built using the same basic principles. These principles are based on a so-called two-stage sealing process, which involves waterproofing on the outside and draught sealing on the inside in separate layers. The installation joint must also be thermally insulated to minimise heat loss and to protect against condensation.

When completed the join between frame and wall shall provide:

- Protection against rain and wind, ventilation and drainage on the outside.
- Thermal insulation and air noise insulation through the centre of the join.
- Air-tightness, vapour proofing and air noise proofing through the room side of the join (including fireproofing with regard to fireproof windows).

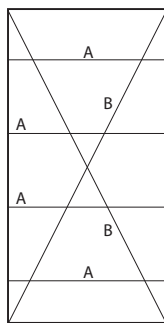
Use a caulking material that does not absorb moisture. Press the caulking material gently into the join from the inside. Do not caulk so hard that the sides of the frame buckle inwards.

FIXING SIDELIGHTS

For information relating to fixing sidelights, refer to site couplings within this document.

SINGLE DOORS ARE EQUIPPED WITH A THREE POINT ESPAGNOLETTE AND DEAD BOLT.

To make sure that the door and the espagnolette/lock will operate properly it is important to assemble the door correctly. Before hanging the door leaf check that the measurements match those on the diagram below:



A= The horizontal measurement across the frame shall be identical at each of the four attachment points.

M 10-21 and 10-20 = 920 mm
M 9-21 and 9-20 = 820 mm
M 13-21 = 1220 mm
M 14-21 = 1320 mm
M 15-21 = 1420 mm
M 17-21 = 1620 mm

B= Diagonal measurements shall be identical

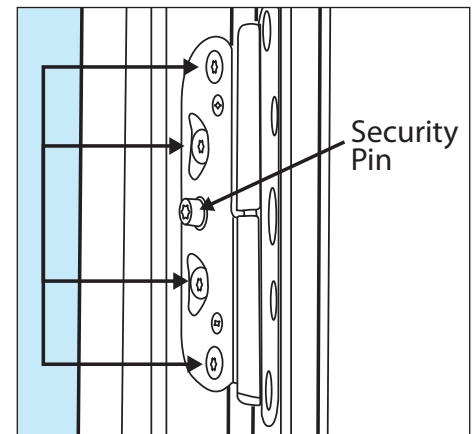
NOTICE: When mounting the door leaf it must be adjusted to achieve a smooth locking mechanism and secure door. The door leaf has been pre-adjusted at the factory but fine adjustments may need to be made in situ. See below for information on how the hinges are

used to adjust a door leaf. It is very important that the door is hung correctly in the frame, as otherwise it may become jammed. Check all measurements before starting to adjust the hinges. The distance between the door leaf and the side of the frame should be approximately 2.5 mm. The distance between the lintel and the upper edge of the door leaf should be approximately 2 mm.

HINGE ADJUSTMENT

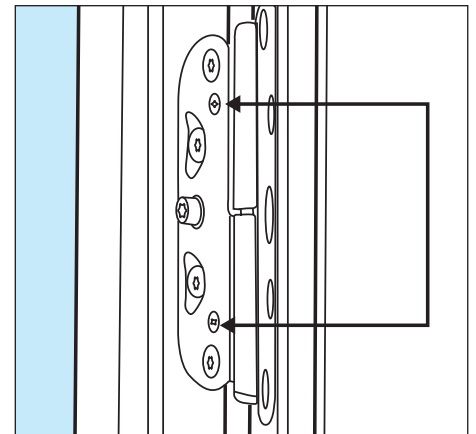
Before making any adjustment to the hinges, it is essential that the door frame has been fitted square and plumb and in accordance with the fitting instructions.

The door leaf can be re-positioned in opening by adjusting the hinges. Remove security pin then loosen all 4 no screws on hinge plate as shown below:



- Loosen these 4 screws slightly to allow hinge adjustment

Then, using a torque screwdriver, move the 2no adjusting screws to suit.



- Adjust these screws to suit

NOTE: All hinges to be adjusted evenly and re-tightened after alterations have been made.

The hinges can be continuously adjusted in a vertical direction by using an integral adjustment screw in the base of the hinge. Use a Torx screwdriver.

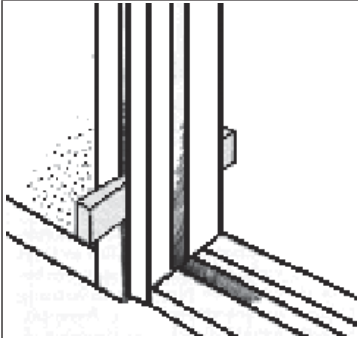
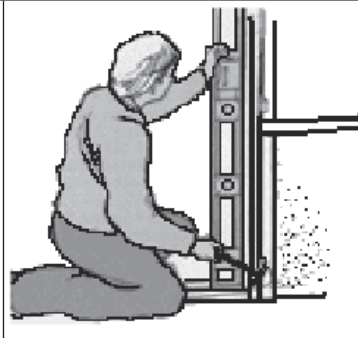
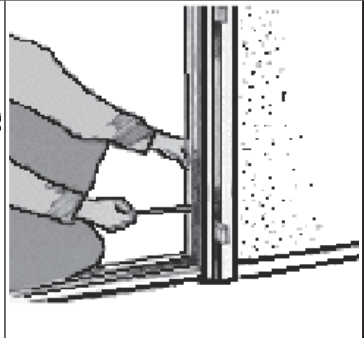




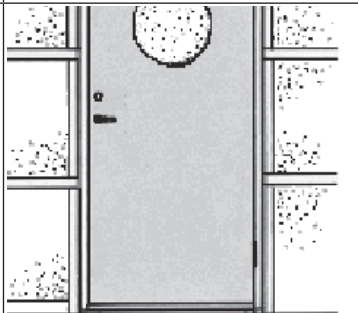
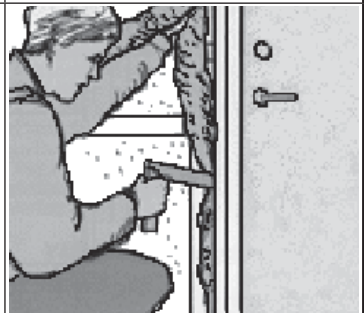
STRIKE PLATE

Use a screwdriver when adjusting the strike plate. All doors are adjusted with the adjustable knock-out plate. Adjust the strike plate if the closing pressure is too low.

INSTALLING EXTERNAL ENTRANCE DOORSETS

It is critical that the external entrance doorsets are installed correctly. This instruction shows the installation step by step.

Before you begin, check the measurements of the door and opening. The measured opening will be the outer frame measurement (the exact measurement of the door) plus between 10 and 20 mm on the width and height.

		
<p>1) Prepare the threshold: Using a spirit level, check floor is level. The threshold should not stand directly on concrete. If this is the case, place a moisture barrier under the door leaf and lift the frame into place. Check that the threshold is level. Screw out the frame sockets against the foundations/walls</p>	<p>2) Use a long spirit level (at least 1.8 metres) to verify that the hinged side of the door is vertical and does not lean inwards or outwards. If necessary adjust with the frame sockets. Bear in mind that a 2 mm discrepancy at one end might be 20 mm at the other, it is essential to take care to check that the frame and threshold are aligned vertically</p>	<p>3) When the hinged side is straight and the threshold is level fasten the hinged side by tightly securing the top and bottom of the frame with screws designed for this purpose (see door frame fastening)</p>
		
<p>4) If necessary use the frame sockets to adjust the centre of the hinged side. Fasten the sides of the frame by securing the frame with screws designed for this purpose (see door frame fastening).</p>	<p>5) Check the non-hinged side is vertical and level following the same steps as 2, 3 and 4 above</p>	<p>6) Measure the diagonal by using, for example, two wooden bars. The two diagonals should be of exactly the same length. If necessary adjust by using the frame sockets and screws</p>
		
<p>7) Check the distance between the sides of the frame from above and below. If necessary adjust with the frame sockets and screws. If an adjustment is made then point 8 must be repeated</p>	<p>8) Before hanging the door leaf remove the transport fixing located on the bottom of the lock side of the door leaf. Hang the door leaf and check that the opening between the door leaf and frame is the same all the way round. If necessary adjust with the hinges</p>	<p>9) Perform joining/caulking according to a two-stage sealing process. To avoid holes or cracks it is essential to perform the sealing accurately. Even the smallest air leakage can impair the heat and noise reduction considerably.</p>

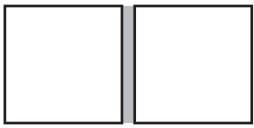
SITE COUPLING

All NorDan windows and doors including sidelights for external doorsets can be coupled together to form a single unit for larger glazed areas in a construction.

It is important that the correct fixings are used, along with any required reinforcements and stability requirements. NorDan therefore recommend a qualified structural engineer is consulted before any such works are carried out.



■ Horizontal coupling



■ Vertical coupling

If specified at the time of ordering, coupling kits can be delivered along with your products, contents of which depends on what products are being coupled.

COMPOSITE ASSEMBLIES

For composite assemblies that may require steel reinforcement, please consult your nearest NorDan UK regional office.

	Timber horizontal coupling	Timber vertical coupling	Aluminium clad horizontal coupling	Aluminium clad vertical coupling
Gasket 'E' profile 5x10mm	✓	✓	✓	✓
Coupling screws 6x70mm, Torx 30 head	✓	✓	✓	✓
Aluminium profile (RAS 374)	✓	X	X	X
Aluminium profile (RAS 407)	X	X	✓	X
Aluminium 'T' profile (RAS 255)	X	X	X	✓
Timber profile (923)	✓	✓	✓	✓
Aluminium 'T' profile (RAS 310)	*	*	*	*
Timber 'C' profile for internal lining board grooves	*	*	*	*
Stabilising plate (RAS 406)	*	*	*	*
Glazing packers (2mm spacers)	*	*	*	*
Fixing hole covers (white for white products and transparent for coloured products)	*	*	*	*



Supplied as standard



Unavailable



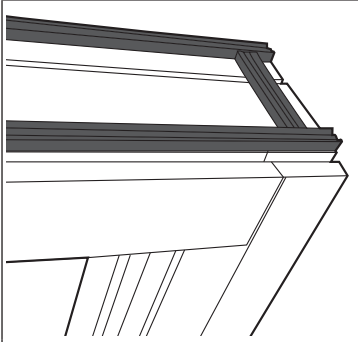
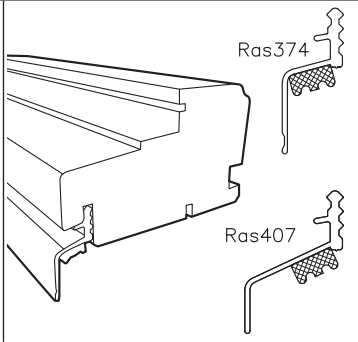
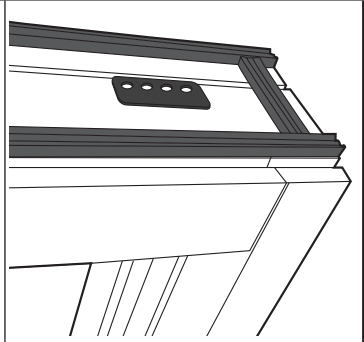
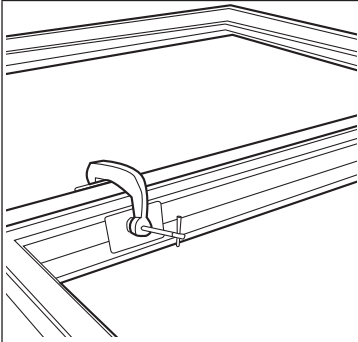
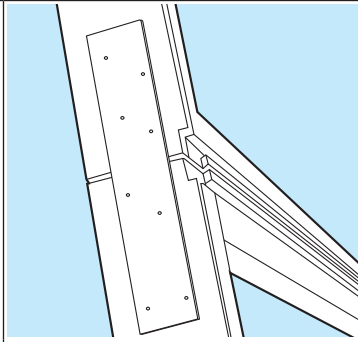
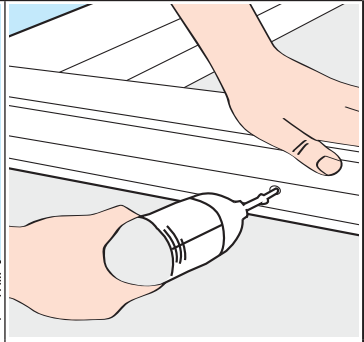
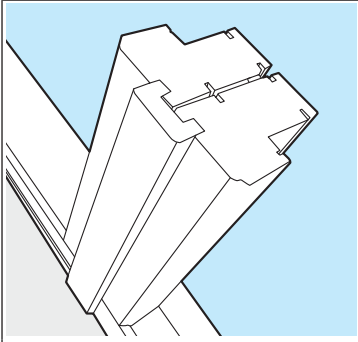
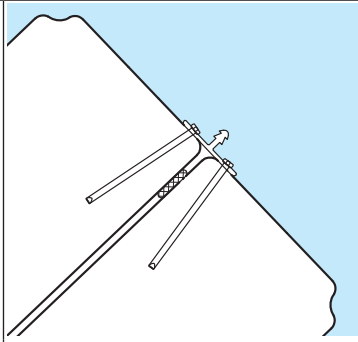
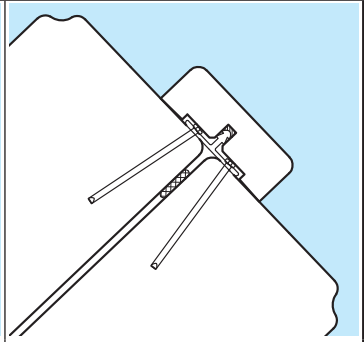
Available on request but recommended

Gasket 'E' profile	Coupling screws	Aluminium profile (RAS 374)
Aluminium profile (RAS 407)	Aluminium 'T' profile (RAS 255)	Timber profile (923)
Aluminium 'T' profile (RAS 310)	Timber 'C' profile for internal lining board grooves	Stabilising plate (RAS 406)

SITE COUPLING: HORIZONTAL

Please note that the following illustrations are for guidance only and do not take into account:

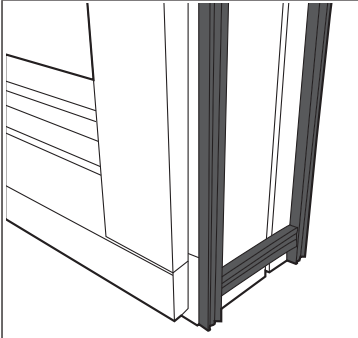
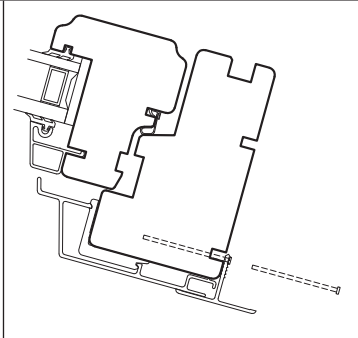
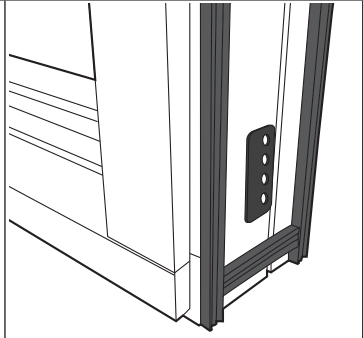
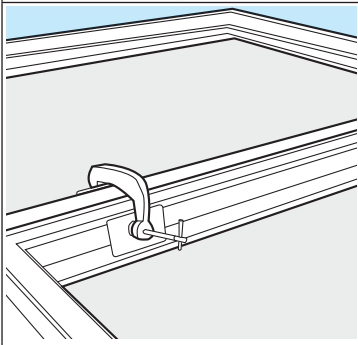
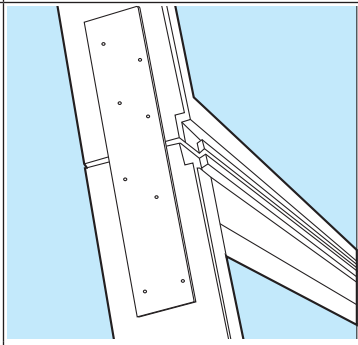
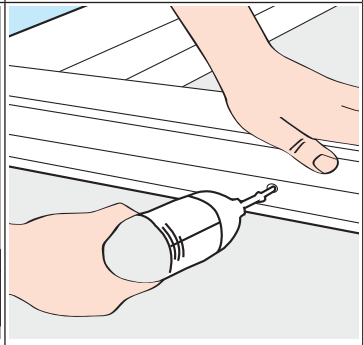
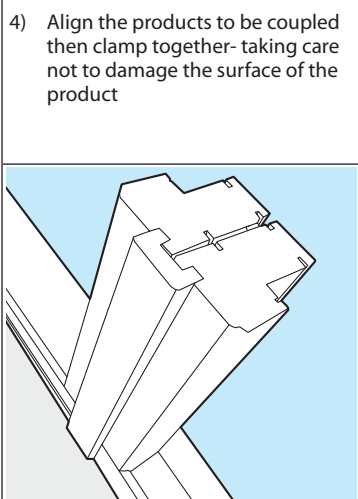
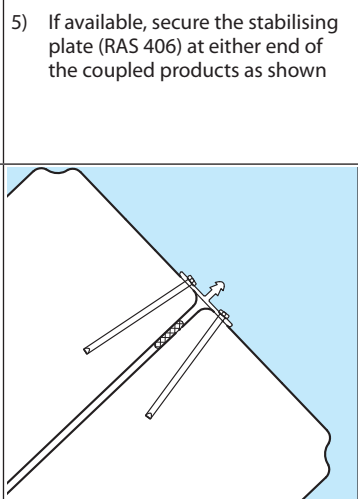
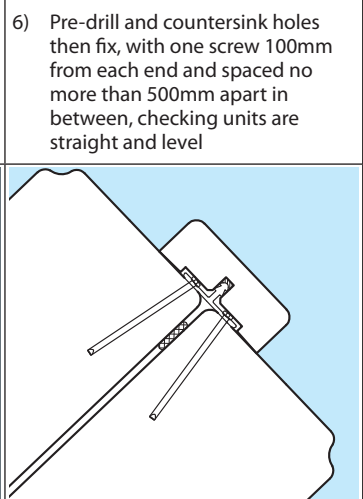
- Location and number of screw positions
- Load bearing fixings
- Tight weatherproof connections
- Consideration for size and location of the couplings for required fixings

 <p>1) Fix gasket as shown to the top edge of the bottom unit being coupled</p>	 <p>2) Apply gasket to the underside of the drip cills (RAS 374 for timber couplings and RAS 407 for alu-clad couplings) and secure to the bottom of the top unit being coupled</p>	 <p>3) If available, fix 2mm spacers at the top and bottom at intervals of no more than 500mm apart in between</p>
 <p>4) Align the products to be coupled then clamp together- taking care not to damage the surface of the product</p>	 <p>5) If available, secure the stabilising plate (RAS 406) at either end of the coupled products</p>	 <p>6) Pre-drill and countersink holes then fix, with one screw 100mm from each end and spaced no more than 500mm apart in between, checking units are straight and level</p>
 <p>7) If lining boards grooves are present, tap timber coupling cover in place and fix with glue or pin</p>	 <p>8a) If lining board grooves are not present, pin aluminium profile RAS310 at the centre of the coupling joint</p>	 <p>8b) Fit the timber cover over the aluminium T section and secure with adhesive</p>

SITE COUPLING: VERTICAL

Please note that the following illustrations are for guidance only and do not take into account:

- Location and number of screw positions
- Load bearing fixings
- Tight weatherproof connections
- Consideration for size and location of the couplings for required fixings

 <p>1) Fix sealing strip as shown to the side of one of the units being coupled</p>	 <p>2) If products are aluminium clad, pin aluminium profile (RAS 255) in place</p>	 <p>3) If available, fix 2mm spacers at the top and bottom at intervals of no more than 500mm apart in between</p>
 <p>4) Align the products to be coupled then clamp together- taking care not to damage the surface of the product</p>	 <p>5) If available, secure the stabilising plate (RAS 406) at either end of the coupled products as shown</p>	 <p>6) Pre-drill and countersink holes then fix, with one screw 100mm from each end and spaced no more than 500mm apart in between, checking units are straight and level</p>
 <p>7) If lining boards grooves are present, tap timber coupling cover in place and fix with glue or pin</p>	 <p>8a) If lining board grooves are not present, pin aluminium profile RAS310 at the centre of the coupling joint</p>	 <p>8b) Fit the timber cover over the aluminium RAS 310 T section and secure with adhesive. For non-aluminium clad products, fit further timber cover strip to the external face of the coupling joint by pinning</p>



CUSTOMER SERVICES

HOW TO REPORT DAMAGE

Any damages/shortages must be reported verbally to Site Service Coordinator in relevant office within 48 hours of delivery or received in writing within 5 days.

NorDan UK will not accept 'unchecked' on POD. Any damage/shortages should be highlighted on the delivery note. Any report of damages/shortages received after this timescale may result in chargeable replacements.

HOW TO REPORT A COMPLAINT

Complaints should be directed to regional project coordinators to handle, all reports/complaints relating to products must be reported using our SVR Form (for copies of this form, please contact your nearest NorDan UK regional office).

When reporting product faults, as much information as possible must be added to this form, predominantly original Sales Order/ Invoice Number so that original order can be traced.

Spacer bar details if glass issue reported or Label details if main entrance doors issue reported.

Where possible, photographic evidence of product should be submitted along with this form which can then omit the need for an initial site inspection by our Service Engineer, this inevitably reduces the overall conclusion timescale of any site service issue.

10 YEAR PRODUCT WARRANTY

NorDan's standard 10 year product warranty covers against:

- Condensation forming inside the sealed unit (thermal breakdown)
- Failure of ironmongery, furniture and espagnolettes

Including:

- Material stability and lasting quality
- Water and wind tightness

The warranty is provided on the following terms:

Transport

The purchaser must check for and report any damage on the delivery note before accepting the goods.

On-site Storage

Following delivery and prior to installation, all products should have the transport protection (polythene) removed and stored on a flat and level surface, protected from all extremes of weather whilst allowing the timber to breathe. Failure to do this will compromise the product performance & lead to deterioration of both the finished timber and ironmongery.

Fitting

Installation must be in accordance with good building practices and manufacturer recommendations.

Surface Treatment

Goods must be finished with a suitable surface treatment on all sides of the product before installation and without exception prior to being exposed to the weather. Finishing should be checked annually and maintained as necessary.

Usage

Ironmongery should be cleaned regularly and greased lightly whenever needed in accordance with NorDan guidelines. Building debris and such like should be removed from rebates, channels, furniture and ironmongery. Weatherseals must be cleaned regularly and protected against any form of interference or contamination. Sufficient ventilation is required to prevent condensation.

The warranty includes:

To replace parts subject to a valid claim under the warranty within 10 years from date of invoice. In addition, the cost associated with replacing defective goods is also covered, but only for the first 5 years from date of invoice. Simple works or repairs required under the warranty should be carried out by the purchaser. Parts required for such works, will be provided free of charge during the period of the warranty.

The warranty excludes:

Any products altered in any way prior to, during and or after fitting. Accidental or negligent damage. The costs associated with replacing defective goods after 5 years from date of invoice. Any abnormal costs associated with the means to gain access to consider claims or service claims, including:- cranes, lifts, scaffolding, ladders or working platforms of any description. Any form of decoration or making good associated with the fitting or repairing goods. Any sealed units not produced by NorDan or any special glass subject to another manufacturer's warranty. Factory pre-finishing (see NorDan standard stain, paint and varnish information leaflet). Damage caused by transportation if not recorded at the time of delivery. Glass liable to thermal shock and stress cracking:

Whilst every care will be taken by NorDan to ensure that the appropriate glazing is incorporated within our finished components to cater for each location, our warranty will not apply in the case of breakdown of a glazing unit due to thermal shock occurring, because components with inappropriately specified glazing have been placed in a confined situation (eg. Spandrel panels fitted immediately in front of the structure, or thermal insulation, where heat cannot be adequately dissipated on both faces). NorDan accepts no liability for excessive structural movement or poor fitting of products which may lead to stress cracking of glass. The warranty does not cover material swelling, nor any aesthetical discolouration or mould to timber which is subjected to excessive moisture or condensation either during or following installation.

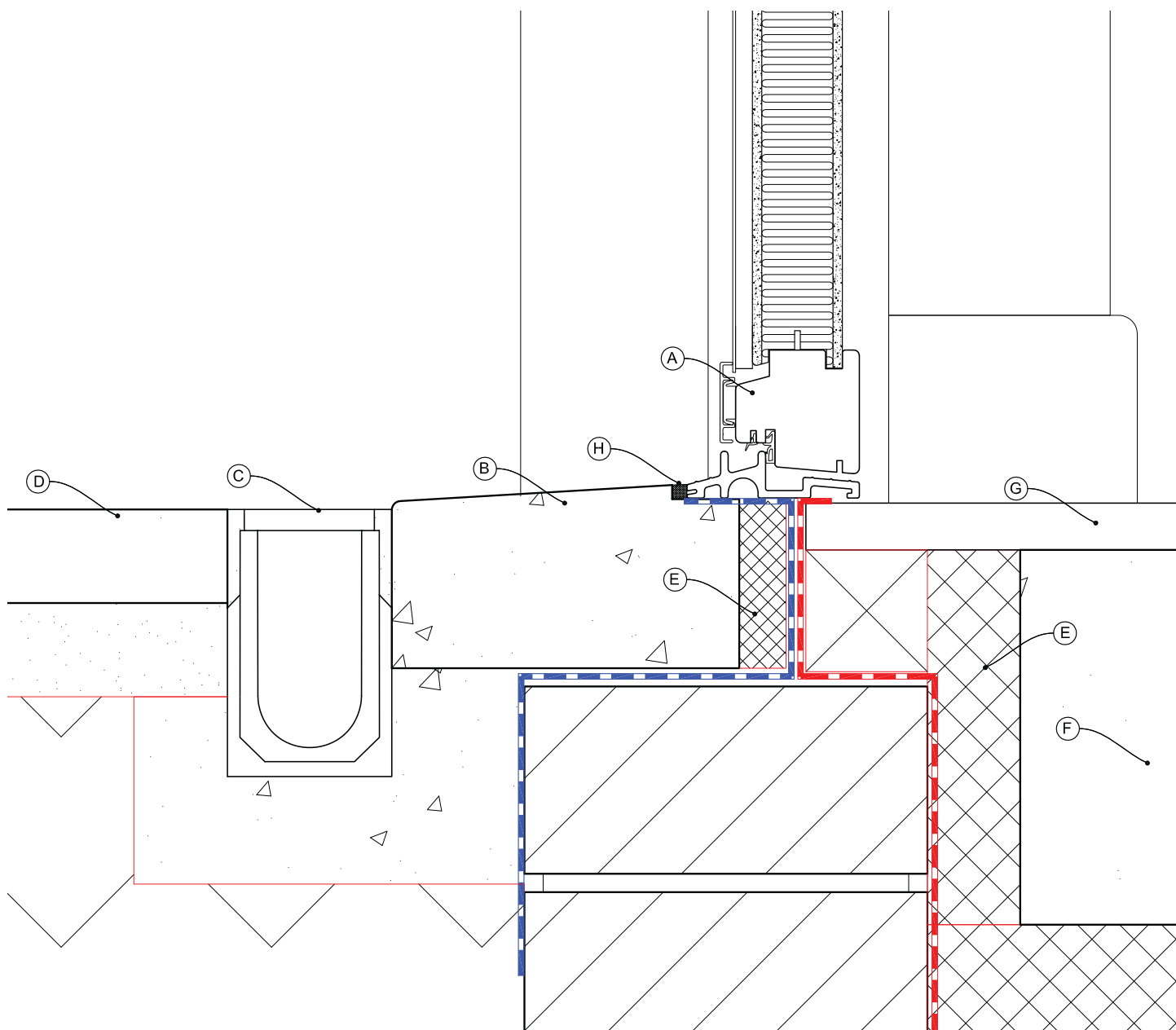
In general

All claims must be made in writing, with provision of all necessary details and forwarded to NorDan UK Ltd at the address below. The warranty starts from the date of delivery. As a matter of principle any goods must be paid for in full before a claim can be considered. All claims must be submitted with date of delivery (or date of manufacture from the sealed unit spacer bar). NorDan retain the right to repair or replace products or parts thereof in the unlikely event of failure.

Any variation to the above terms and conditions must be recorded in writing between both the Manufacturer, NorDan UK Ltd and the contractor/purchaser. All claims under warranty will be subject to the sole discretion of the Manufacturer whose ruling the purchaser will accept and abide by.

INSTALLATION DRAWINGS

TYPICAL DOOR THRESHOLD DETAIL



KEY

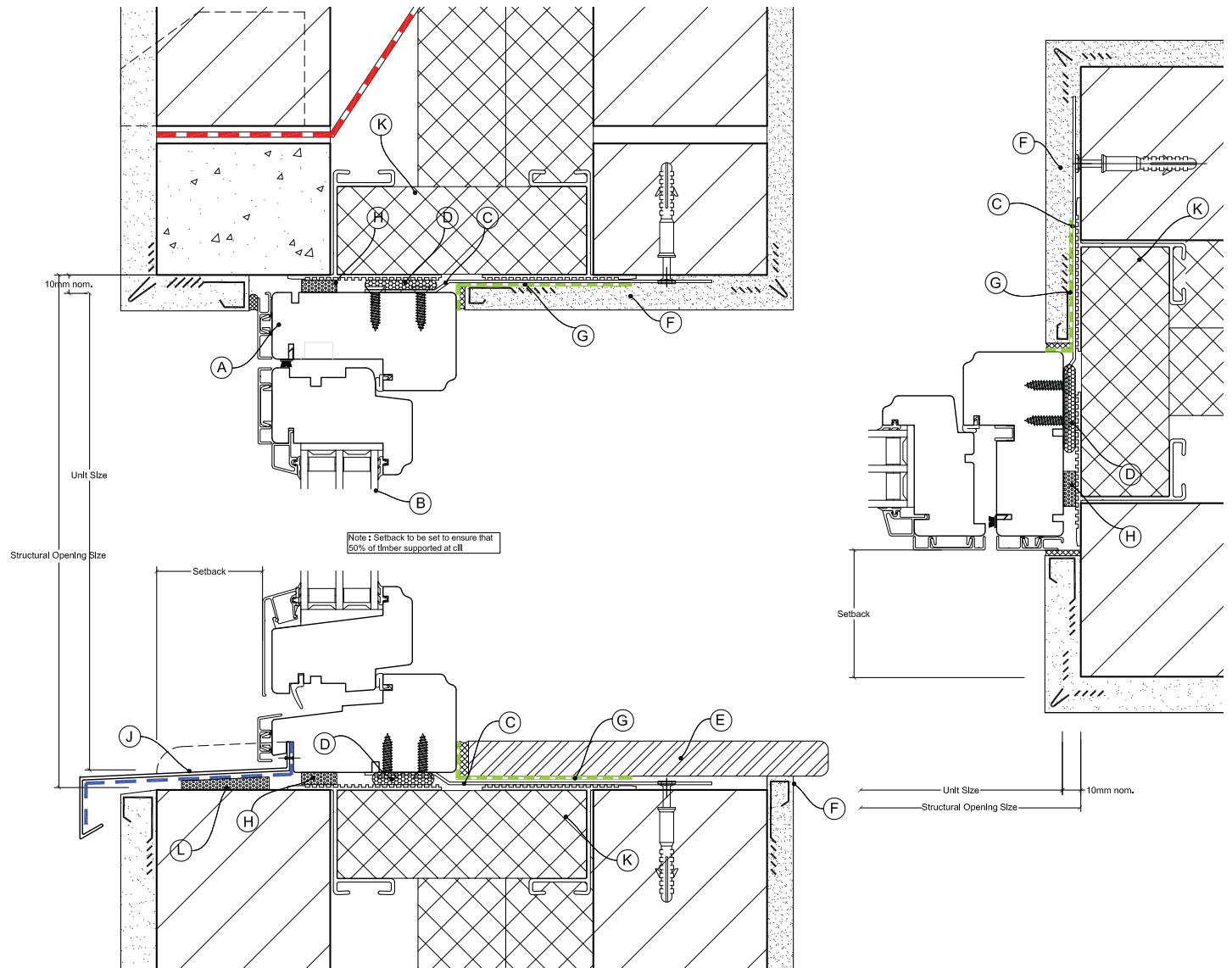
- A) Selected NorDan door system
- B) Concrete door cill by others
- C) Ground drain by others
- D) Paving construction by others
- E) Rigid insulation by others
- F) Floor construction by others
- G) Floor finish by others
- H) Mastic sealant

NOTE:

Drawings are for illustrative purposes only and are not to scale

INSTALLATION DRAWINGS

150MM BLOCK CAVITY PPC ALUMINIUM CILL



KEY

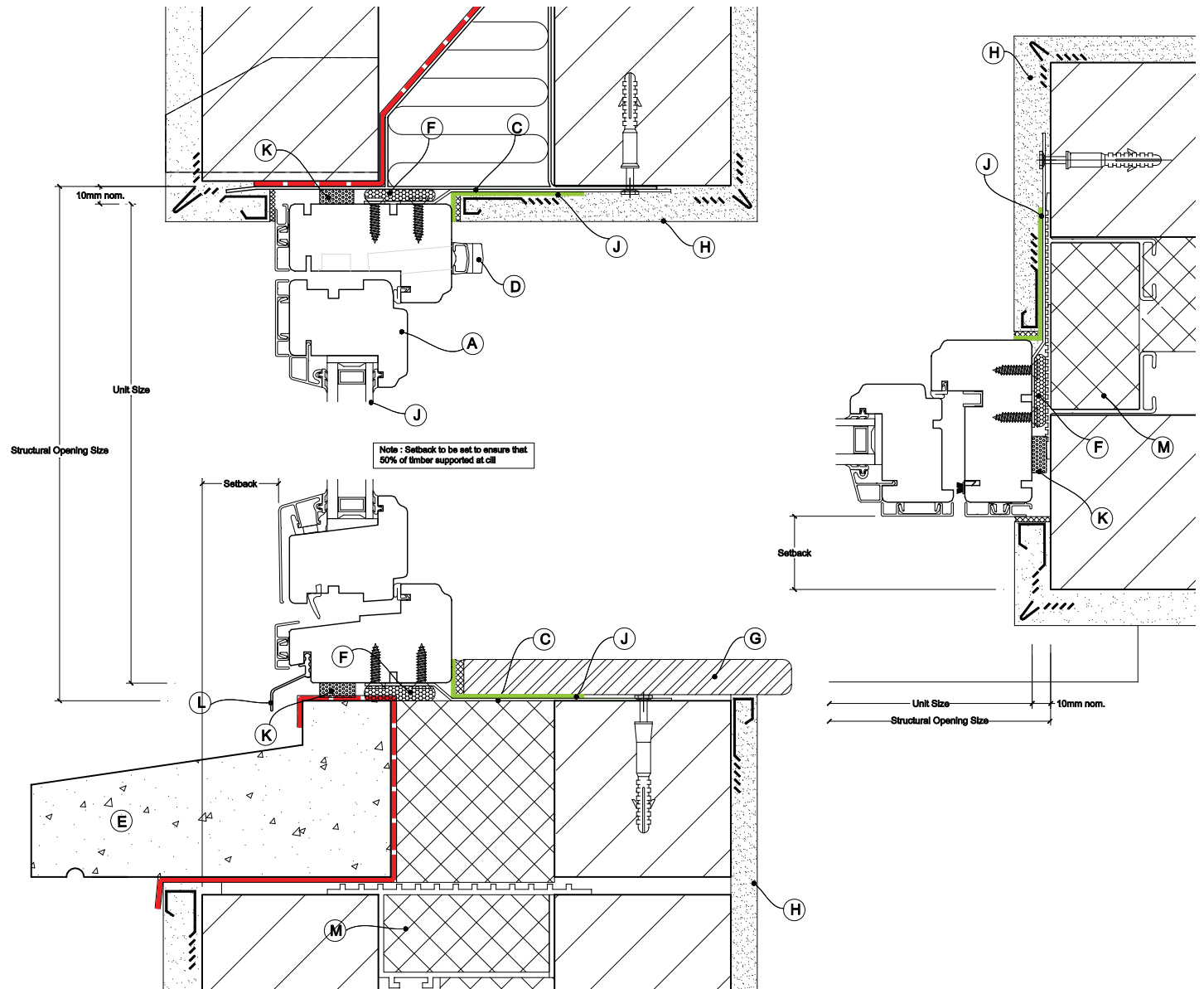
- A) Selected NorDan window system
- B) Glazing as specification
- C) Galvanised steel bracket fixed @ 150mm from corners and max. 600mm centres
- D) PU low expansion foam by installers
- E) Window board by others
- F) Internal finishes by others
- G) Tremco proprietary air tight taping (optional)
- H) Comriband 600 compressible frame sealer by installers
- J) PPC pressed aluminium cill backed with DPM by NorDan UK
- K) Cavalok insulated structural cavity closer
- L) Compressible seal between window cill and brick

NOTE:

Drawings are for illustrative purposes only and are not to scale

INSTALLATION DRAWINGS

100MM BLOCK CAVITY PRECAST CILL



KEY

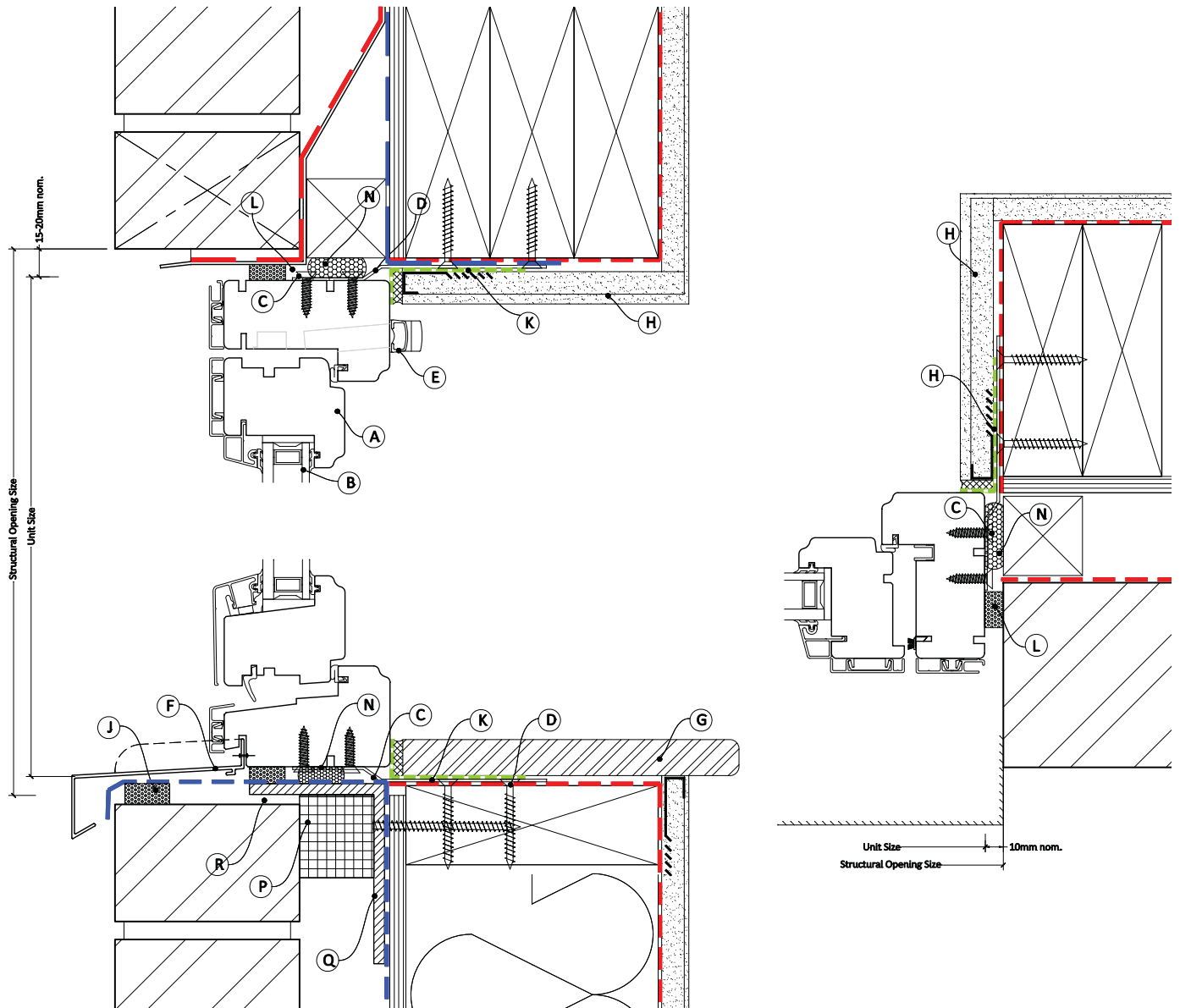
- A) Selected NorDan window system
- B) Glazing as specification
- C) Galvanised steel bracket fixed @ 150mm from corners and max. 600mm centres
- D) Controllable slot trickle vent supplied by NorDan UK (optional)
- E) Concrete cill by others
- F) PU low expansion foam by installers
- G) Window board by others
- H) Internal finishes by others
- J) Tremco proprietary air tight taping (optional)
- K) Compriband 600 compressible frame sealer by installers
- L) Extruded aluminium drop cill by NorDan UK (optional)
- M) Cavalok insulated cavity closer

NOTE:

Drawings are for illustrative purposes only and are not to scale

INSTALLATION DRAWINGS

TIMBER FRAME WITH BRICK VENEER



KEY

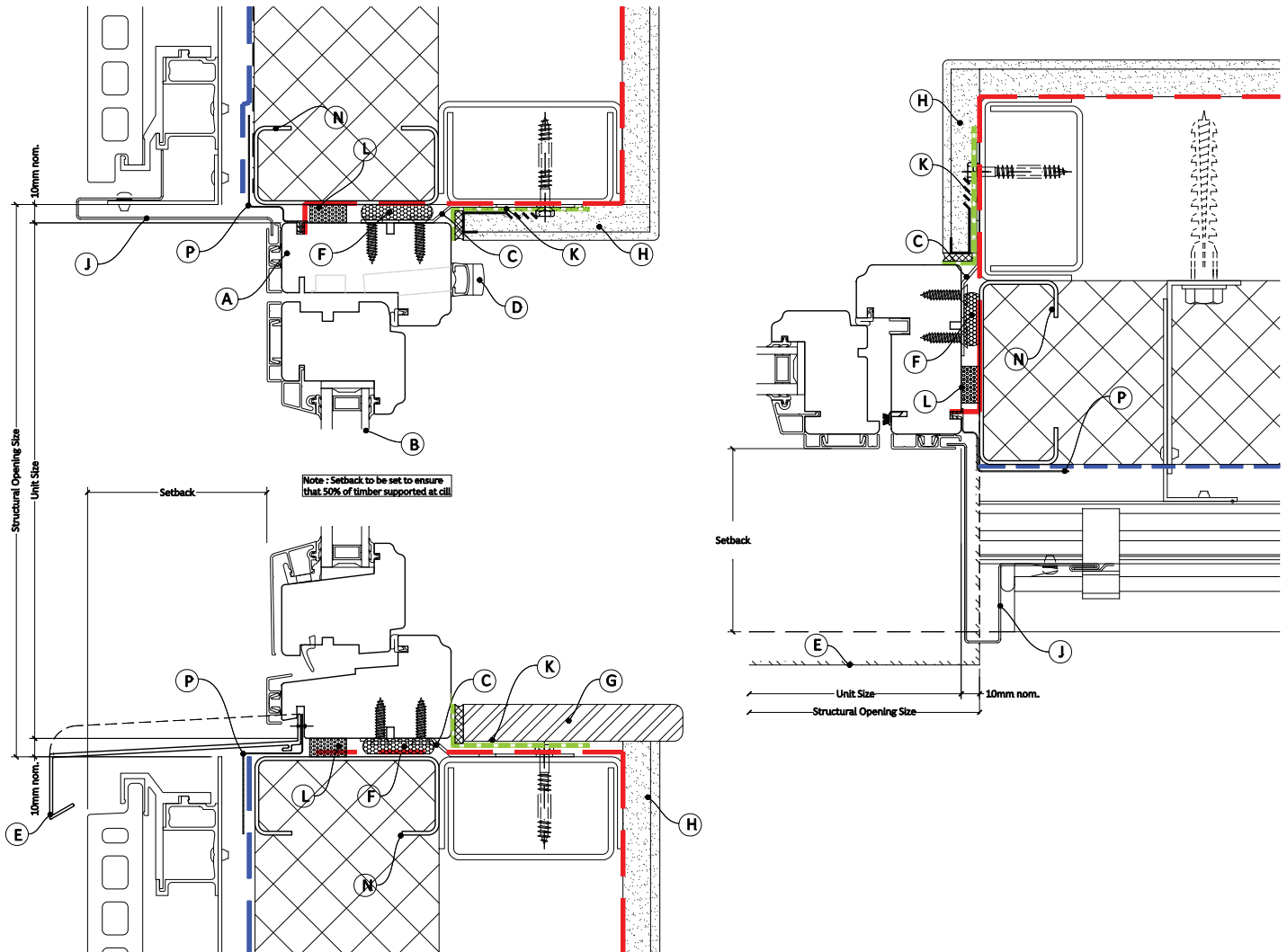
- A) Selected NorDan window system
- B) Glazing as specification
- C) Non-continuous tolerance packers as required
- D) 3mm galvanised steel strap
- E) Optional trickle vent
- F) PPC pressed aluminium cill by installers
- G) Window board by others
- H) Internal finishes by others
- J) Compressible seal between window cill and brick
- K) Optional air tightness taping by installers
- L) Compriband 600 compressible frame sealer by installers
- M) PPC pressed aluminium cill backed with DPM by NorDan UK
- N) PU low expansion foam by installers
- P) Rockwool TCB Firestop or equal approved by others
- Q) Steel support angle by timber frame contractor
- R) Shrinkage gap between steel and brickwork

NOTE:

Drawings are for illustrative purposes only and are not to scale

INSTALLATION DRAWINGS

RAINSCREEN CLADDING



KEY

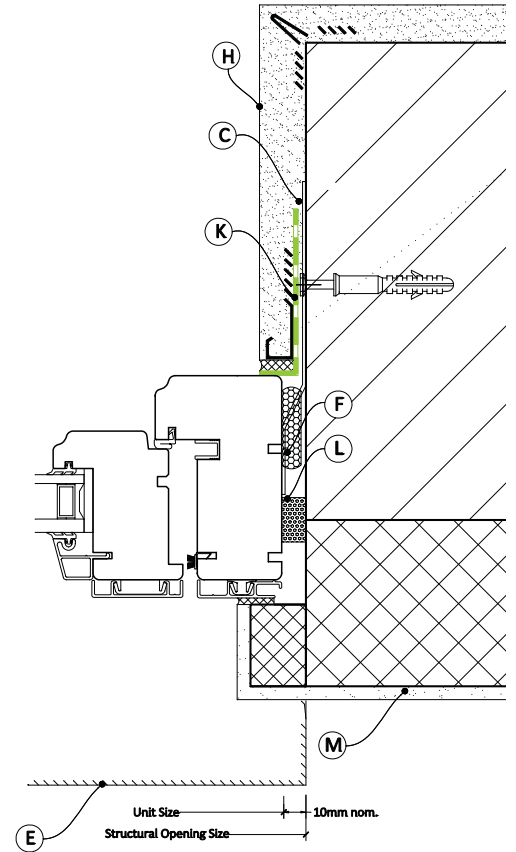
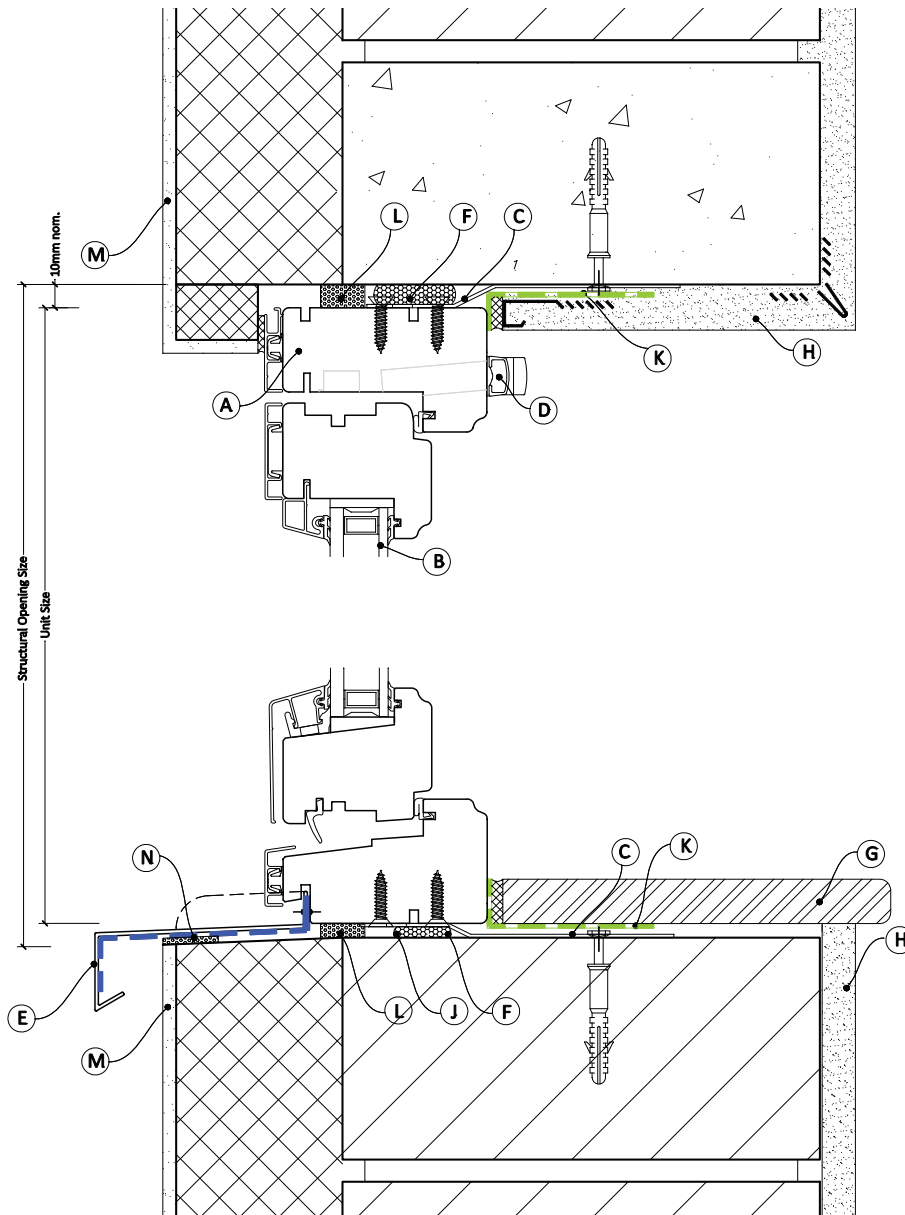
- A) Selected NorDan window system
- B) Glazing as specification
- C) Galvanised steel bracket fixed @ 150mm from corners and max. 600mm centres
- D) Controllable slot trickle vent supplied by NorDan UK (optional)
- E) Pressed aluminium PPC cill by others
- F) PU low expansion foam by installers
- G) Window board by others
- H) Internal finishes by others
- J) Pressed aluminium PPC flashings by others
- K) Tremco proprietary air tight taping (optional)
- L) Compriband 600 compressible frame sealer by installers
- M) Extruded aluminium drip cill NorDan
- N) Steel frame by others
- P) Illbruck duo flexible (with K01 gasket) by NorDan

NOTE:

Drawings are for illustrative purposes only and are not to scale

INSTALLATION DRAWINGS

EXTERNAL INSULATED BRICKWORK



KEY

- A) Selected NorDan window system
- B) Glazing as specification
- C) Galvanised steel bracket fixed @ 150mm from corners and max. 600mm centres
- D) Controllable slot trickle vent supplied by NorDan UK (optional)
- E) Pressed aluminium PPC cill by others
- F) PU low expansion foam by installers
- G) Window board by others
- H) Internal finishes by others
- J) Non continuous tolerance packers as required
- K) Tremco proprietary air tight taping (optional)
- L) Compriband 600 compressible frame sealer by installers
- M) External insulation and render system by others
- N) Seal tape by others

NOTE:

Drawings are for illustrative purposes only and are not to scale



For further information regarding NorDan and NorDan products, please contact your nearest NorDan UK regional office:

ABERDEEN:

NorDan UK Ltd, Norse House, Greenwell
Road, East Tullos, Aberdeen AB12 3AX
Tel: 01224 854600

GLENROTHES:

NorDan UK Ltd, Unit 12, Eastfield
Business Park, Newark Road South,
Glenrothes KY7 4NS
Tel: 01592 770136

GLOUCESTER:

NorDan UK Ltd, Green Farm Business
Park, Falcon Close, Quedgeley,
Gloucester GL2 4LY
Tel: 01452 883131

IPSWICH:

NorDan UK Ltd, Maitland Road, Lion Barn
Business Park, Needham Market, Ipswich
IP6 8NZ
Tel: 01449 722922

LEEDS:

NorDan UK Ltd, Unit 5, Innovation
Square, Green Lane Industrial Park,
Featherstone WF7 6NX
Tel: 01977 796221

WISHAW:

NorDan UK Ltd, 96 Kirk Road, Wishaw,
North Lanarkshire ML2 7NS
Tel: 01698 376922

WWW.NORDAN.CO.UK

INFO@NORDAN.CO.UK

NorDan®