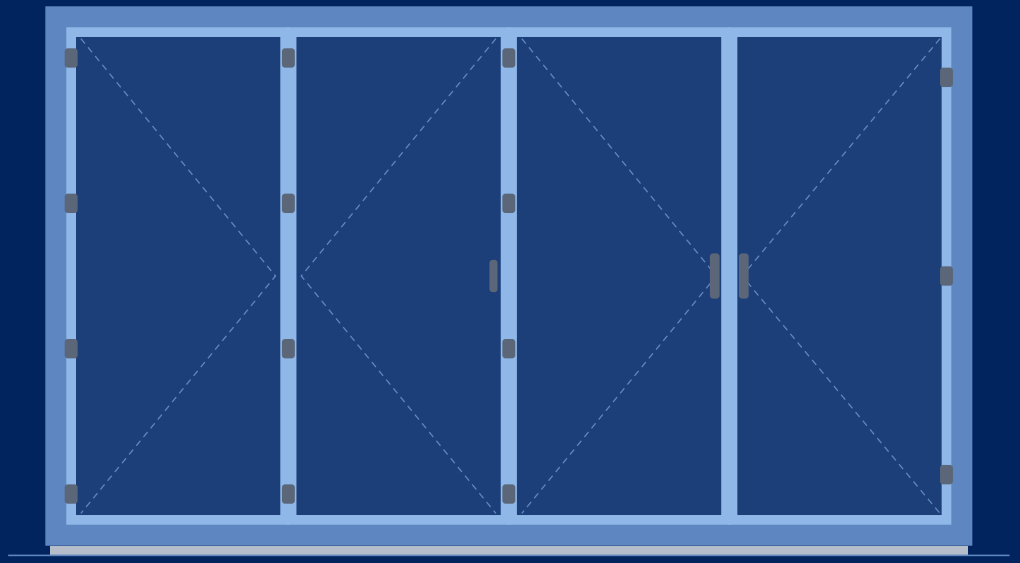
PERGOLAST
By GLASS GROUP

HAVEN COLLECTION

Haven Fold

INSTALLATION MANUAL

Thermally broken aluminum folding glass door, floor-supported, opening inward or outward. For homeowners and installation contractors.



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Who this manual is for

Homeowners should read sections 1–3 and 9–12. They explain what you are getting, how to use the door and how to look after it.

Installers should read the whole manual before starting work, and keep it on site with the shop drawings for your order.

Your order documents come first

Every Haven Fold door is made to order. Where the shop drawings for your order give a different size, fixing or layout from this manual, follow the shop drawings.

SECTION 1

About this manual

Haven Fold is a floor-supported folding glass door. Its sashes are hinged together, run on a stainless steel bottom track and fold to one or both sides, opening a wall almost completely.

What it covers

- Preparing the opening
- Setting and fixing the frame
- Hanging, adjusting and glazing the sashes
- Fitting handles and locks
- Sealing, testing and handover
- Use, care, troubleshooting and warranty

Installation

Haven Fold must be installed by Pergolast's installation team or by an experienced glazing or door contractor. It is not a do-it-yourself product: sashes weigh up to 265 lb (120 kg) each.

To book a Pergolast installation, email **service@pergolainstaller.com**.

How to read the steps

Each step has numbered instructions on the left and a drawing on the right. The parts you work on in that step are shown in **navy** or **blue**; everything else is grey.

Sizes are in inches, with millimetres in brackets.

The layout used for drawings in this manual is a **3+1** door: three folding sashes plus one swing door sash. Other layouts install the same way; only the number of sashes, hinges and trolleys changes.

SECTION 2

Safety

Read this page before you start. Folding doors are heavy, made of glass and fitted at height.

HEAVY GLASS PANELS

A single sash can weigh up to 265 lb (120 kg). Always lift with enough people (at least two for each sash, more for large sashes) or with glass suction lifters. Never carry a glazed sash flat.

SAFETY GLASS ONLY

Every pane must be tempered or laminated safety glass, with its permanent safety mark visible in a corner. Do not install unmarked glass.

DO NOT OPEN AN UNFIXED DOOR

Do not fold or swing the sashes until the frame is fully fixed and all trolleys are engaged in both tracks. An unfixed sash can fall.

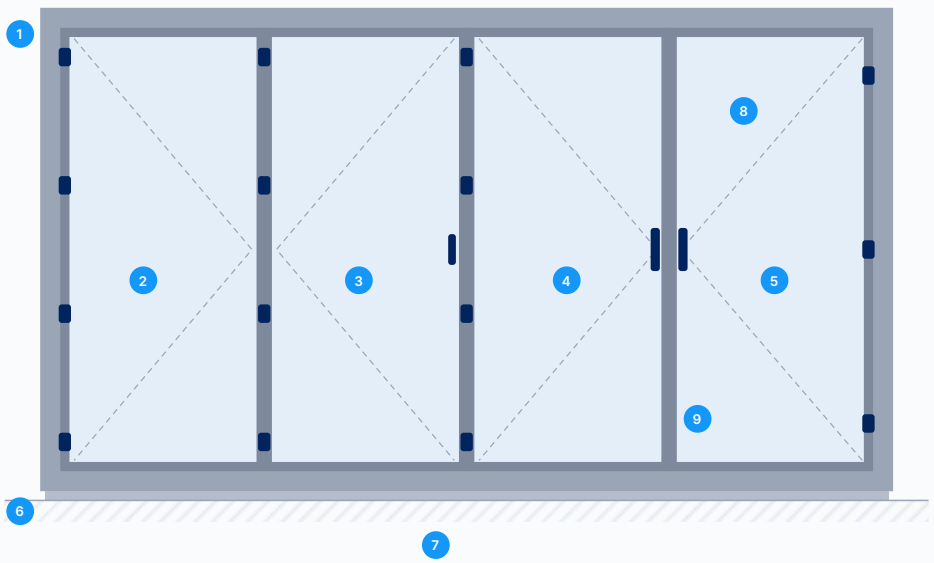
On site

- Wear safety glasses, cut-resistant gloves and safety boots when handling glass and aluminum.
- Use eye and hearing protection when drilling concrete or masonry.
- Check for buried pipes and cables before drilling.
- Store sashes upright on padded A-frames, glass edges on soft blocks, never on bare concrete.
- Keep children and pets away from the work area until handover.
- Do not stand on the bottom track or the frame.
- Follow your local building code for safety glazing, egress and fall protection, and get any permits needed before work starts.

SECTION 3

System overview

Parts of a Haven Fold door, shown from inside as a 3+1 layout.



1. **Frame**: 3″ (77 mm) deep, thermally broken aluminum, mitred corners
2. **Folding sashes**: hinged together in pairs, fold flat to the side
3. **Folding hinges**: 3–4 per hinge line, carry and align the sashes
4. **Lead sash**: two-way gearbox handle, locks top and bottom
5. **Door sash** (“+1”): swing door for daily use without folding the wall
6. **Bottom track**: stainless steel rail in the sill; carries the weight
7. **Trolleys**: top and bottom trolleys at every second hinge line, plus end trolleys
8. **Glass**: ¾″–2″ (20–50 mm) insulated safety glass, held by snap-in beads
9. **Up-down locks**: worked by the handles; rods lock the lead and door sashes into the head and sill

11'-5"	265 lb	10	In or out
max sash height (3500 mm)	max sash weight (120 kg)	max sashes per opening (5 + 5)	opening direction

SECTION 4

What's in the delivery

Check the delivery against this list and your packing slip before you start. Quantities below are for a typical 3+1 door; your packing slip gives the exact numbers for your order.

#	Part	Qty (3+1)
A	Frame: 2 head/sill members and 2 jambs, cut to size (or one assembled frame)	1 set
B	Sashes, factory-assembled with hinges and hardware fitted	4
C	Insulated safety glass units (if not glazed at the factory)	4
D	Glazing beads, cut to size and numbered by sash	16
E	Stainless steel track, top and bottom (frame width less 1⅝″ / 42 mm)	2
F	Folding door hinges	14
G	Top and bottom trolleys, and end trolleys	1 set
H	Up-down locks with top and bottom keeps	3
I	Two-way gearbox handles (lead sash and door sash)	2
J	Window handle for the folding sash	1
K	Corner connectors and corner wedges for the frame	1 set
L	Water drain covers	7
M	Glazing setting blocks	16
N	Adapter and cover profiles for trim	1 set
O	Concrete screws 5⁄16″ × 2⅜″ (7.5 × 60 mm)	per drawings

Before you sign for the delivery

- Check every crate for damage and photograph anything damaged before unpacking.
- Check every glass unit for chips, scratches and the safety mark.
- Check the finish colour matches your order.
- Report missing or damaged parts to **service@pergolainstaller.com** within 48 hours, with photos.

Storage

Keep parts dry, upright and off the ground. Leave the protective film on the aluminum until installation is finished, but remove it within 30 days; film left in sunlight can bond to the finish.

SECTION 5

Tools and materials

Tools

- Laser level and 4′ spirit level
- Tape measure and folding rule
- Hammer drill with masonry bits
- Drill/driver and bit set
- Allen (hex) key set
- Glazing shovel and plastic glazing wedges
- Rubber mallet
- Glass suction lifters (2 or more)
- Caulking gun
- Utility knife and sealant tooling
- Padded A-frames or blocks for sashes

Materials (by installer)

- Packers and shims, plastic, assorted thicknesses
- Exterior-grade neutral-cure silicone sealant, compatible with the finish and glass edge seal
- Low-expansion window and door foam
- Backer rod
- Sill flashing or liquid waterproofing membrane, per the shop drawings
- Fixings for timber or steel openings, if not concrete, per the shop drawings

People and time

Plan on **2–3 installers**, more for sashes over 175 lb (80 kg).

A typical 16′ (5 m) opening takes about **one day** once the opening is ready.

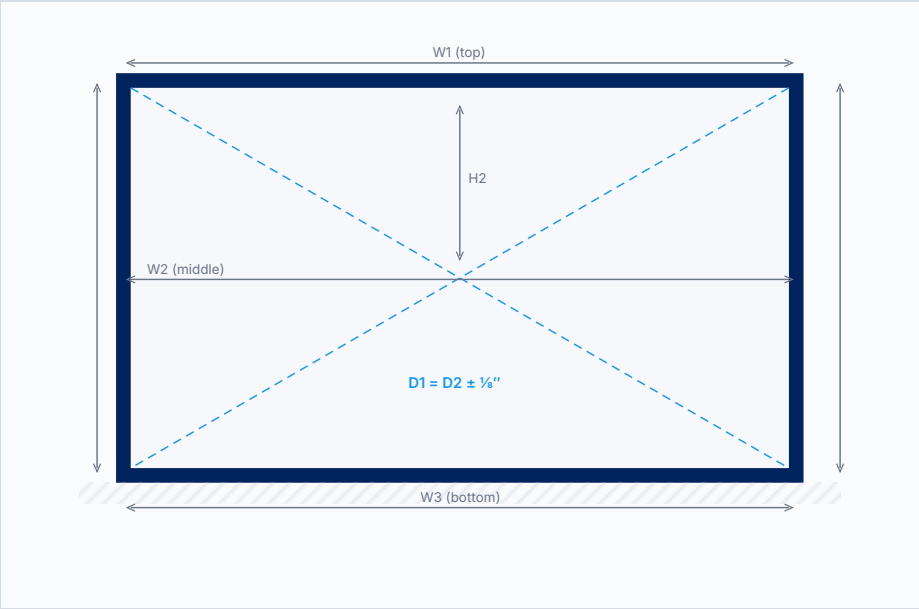
Allow sealant to cure for 24 hours before the water test.

SECTION 6

Preparing the opening

A good installation starts with a level, square and watertight opening. Check it before the delivery arrives.

1. **Measure the width** at the top, middle and bottom (W1, W2, W3), and the **height** at the left, middle and right (H1, H2, H3). Use the smallest of each.
2. **Measure both diagonals** (D1, D2). They should match within ⅛″ (3 mm).
3. **Check the floor** along the full width with a laser. It must be level within ⅛″ (3 mm) over the opening. Grind high spots; level low spots with non-shrink grout. The bottom track must never sag between fixings.
4. **Check the header.** It must carry its own load without resting on the door. Ask the engineer of record to confirm deflection under full load is small enough for the head gap on the shop drawings.
5. **Compare** the opening with the frame size on the shop drawings. Leave the perimeter gap shown there for shims and sealant, usually ¼″–⅜″ (6–10 mm).
6. **Waterproof the sill** with flashing or membrane as the shop drawings show, turned up at the jambs. For outward-opening doors and exposed sites, plan a drainage path for water leaving the sill.



TIP

For a level threshold inside, the floor finish is usually laid after the frame is fixed, so check the finished floor height with the shop drawings now.

Assemble the frame

Skip to step 2 if your frame arrived assembled. Otherwise assemble it flat on padded trestles, inside face down.

1. Lay out the head, sill and both jambs. Check each is marked with your order number and the right position.
2. Fit the **corner connectors** and **corner wedges** (K) into the chambers of each 45° mitre.
3. Apply sealant to both mitre faces so the joint is watertight.
4. Push the corner together, check it is flush on the face, and tighten the Allen screws. Repeat for all four corners.
5. Measure both diagonals. They must match within ⅛″ (3 mm). Correct before the sealant sets.
6. Check the sill has a **drain slot** at the centre of each sash on the outside face, and clip a **water drain cover** (L) over each one.

PARTS USED

Frame members (A) | Corner connectors and wedges (K) | Drain covers (L)

TIP

Seal the end grain of the thermal break in each mitre. Gaps here let water and draughts through.



Set and fix the frame

The frame must be perfectly level, plumb and square. If the frame is out, the sashes will not fold or lock properly.

1. Lay a continuous bead of sealant (or the membrane on the shop drawings) where the sill will sit.
2. Lift the frame into the opening with the drain slots facing out. Centre it in the opening.
3. Pack the sill with **shims** under every fixing point until it is level along its full length. The sill must be fully supported; never leave it bridging a gap.
4. Shim the jambs until they are plumb in both directions, and the head until the diagonals match within ⅛″ (3 mm).
5. Drill through the frame and fix it with the **concrete screws** (O): 6″ (150 mm) from each corner, then no more than 24″ (600 mm) apart, or as the shop drawings show. Do not overtighten; the frame must not bow.
6. Check level, plumb and diagonals again after fixing.



PARTS USED

- Frame
- Concrete screws (O)
- Shims and sealant

> **CAUTION**
> Never fix through the head into a header that deflects. Fix the head as the shop drawings show, usually with slotted fixings that let the header move.

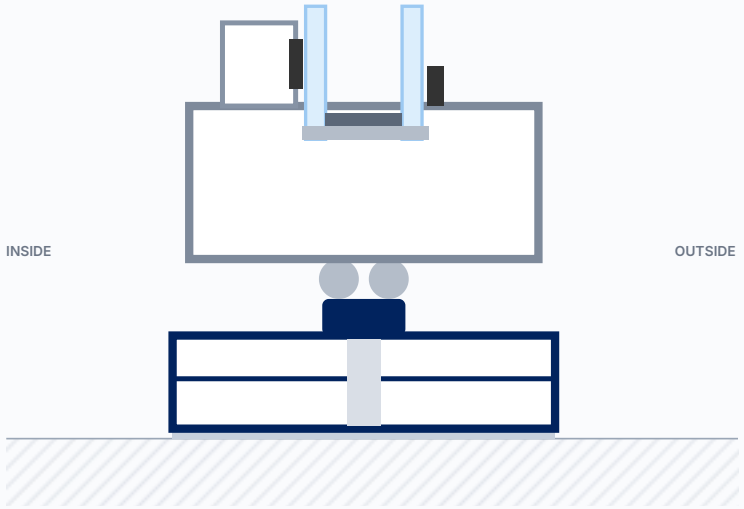
Fit the tracks

The stainless steel tracks carry the sashes. Their joints and ends must be smooth so the trolleys run without bumps.

1. Clean the sill and head channels of all dust, swarf and sealant.
2. Check each **track** (E) is the frame width less 1⅝″ (42 mm), so it ends evenly at both jambs.
3. Press the bottom track into the sill channel along its full length, centred between the jambs.
4. Fit the top track into the head channel the same way.
5. Run a hand along both tracks. Any burr or step at the ends must be filed smooth.
6. Vacuum the tracks once more before hanging the sashes.

PARTS USED

Tracks (E)



Bottom track seated in the sill; the top track sits in the head the same way

Hang the sashes

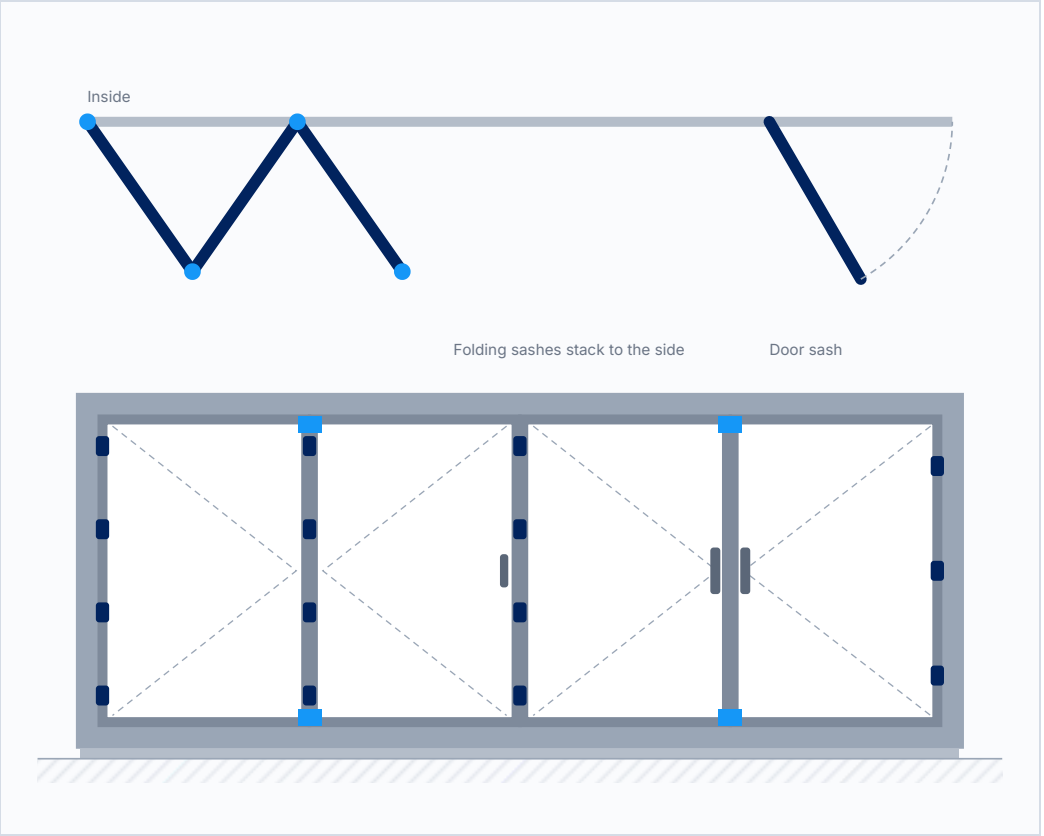
Sashes are hung as a chain, starting from the jamb they fold against. Unglazed sashes are much lighter, so hang them before glazing where possible.

1. Check the sash order marked on each sash (1, 2, 3 …) against the shop drawings. Sash 1 hinges to the jamb.
2. Hinge sash 1 to the jamb with its **folding hinges** (F).
3. Lift sash 2 into place. Engage its **top trolley** in the top track first, then lower it so the **bottom trolley** sits in the bottom track. Join it to sash 1 with the folding hinges.
4. Repeat for each sash. Trolleys sit at every second hinge line, and an **end trolley** sits on the last folding sash.
5. Hang the door sash (“+1”) on its hinges to the last folding sash or to the jamb, as the shop drawings show.
6. Check every trolley wheel sits fully in its track before you let go of the sash.

PARTS USED

Sashes (B) | Hinges (F) | Trolleys (G)

> **CAUTION**
> Keep the chain supported until the last trolley is engaged. Never leave a partly hung chain standing unattended.



Adjust the sashes

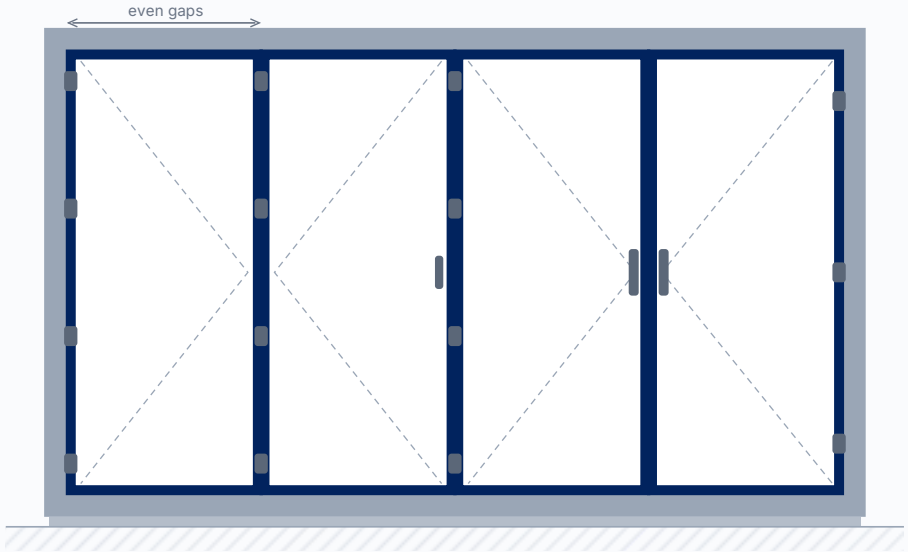
Adjust now, before the glass goes in and while the sashes are light.

1. Close the door fully. Check the gaps between sashes, and between sashes and frame, are even all round.
2. Raise or lower sashes at the **trolleys** with an Allen key until the top and bottom gaps are even and the sashes line up.
3. Adjust the **folding hinges** sideways if a sash leans or the vertical gaps taper.
4. Fold the door fully open and closed several times. It must run smoothly, without rubbing the frame or catching on the track.
5. Check the folded stack sits square to the wall and does not lean outward.
6. Make a final check of all trolley and hinge screws.

PARTS USED

Trolleys (G) | Hinges (F)

> **TIP**
> Adjust in small steps, a quarter turn at a time, and recheck the gaps after each change.

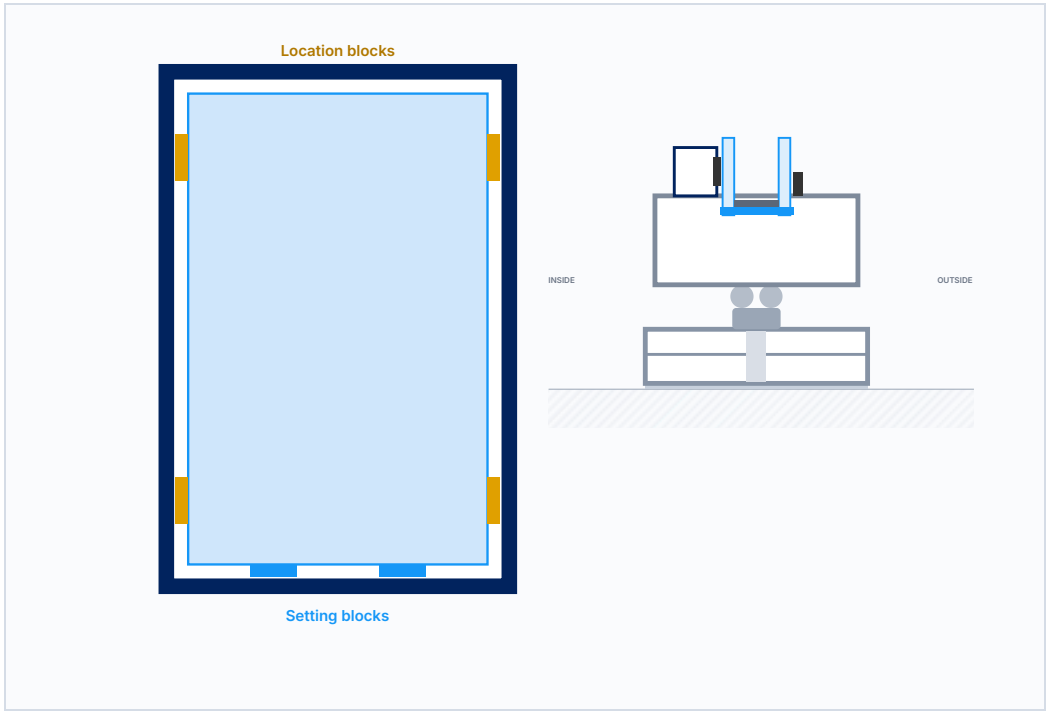


Equal gaps all round · sashes flush in one plane · fold without rubbing

Glaze the sashes

Skip this step if your sashes arrived glazed. Glazing on site is done with the sashes hung, so each sash stays square under the weight of the glass.

1. Clean the glazing rebate. Check the glass size and the safety mark against the shop drawings.
2. Place two **setting blocks** (M) on the bottom rebate, about a quarter of the sash width in from each corner.
3. With suction lifters, set the glass onto the setting blocks and tip it against the outside gasket. Keep the glass centred with an even edge gap.
4. Fit **location blocks** at the sides and top so the glass cannot move. On the hinge side of each sash, block diagonally so the sash cannot sag.
5. Fit the **glazing beads** (D) in the order: bottom, top, then sides. Tap them home with a rubber mallet until they click.
6. Roll the inside glazing gasket into the gap between bead and glass, without stretching it.



PARTS USED

Glass (C) · Beads (D) · Setting blocks (M)

> **CAUTION**
> Never let glass touch aluminum, or rest on its edge without a setting block. A point load can crack the glass, sometimes weeks later.

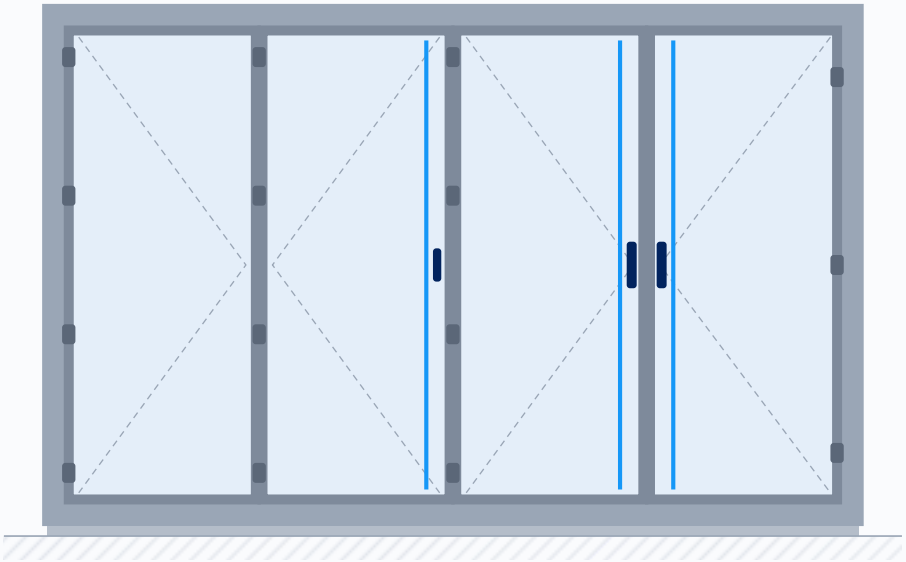
Fit handles and locks

Most hardware is fitted at the factory. On site you fit the handles, set the lock keeps and check every lock.

1. Fit the **two-way gearbox handles** (I) to the lead sash and the door sash. Push the spindle fully into the gearbox and fix the rose screws.
2. Fit the **window handle** (J) to the folding sash that has one.
3. Turn each handle to **locked**. The **up-down lock rods** (H) must extend into the head and sill.
4. Mark where each rod meets the head and sill. Drill the keep holes and fit the keeps, as the shop drawings show.
5. Lock and unlock each handle several times. Locks must work with light hand pressure; if they are stiff, adjust the sash, not the handle.
6. On doors with a 90° corner post, fit and check the corner transfer lock.

PARTS USED

Gearbox handles (I) | Window handle (J) | Up-down locks (H)



Lock rods (blue) shoot into keeps in the head and sill

Seal and trim

Seal the frame to the building. The outside seal keeps rain out; the inside seal keeps air out.

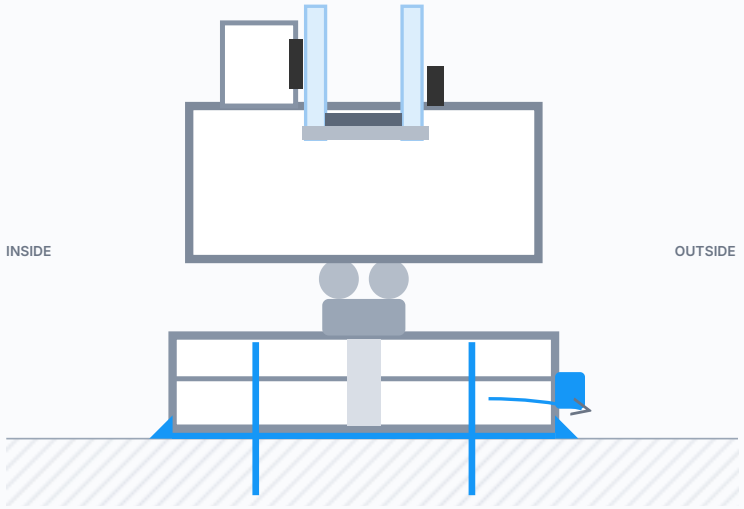
1. Fill the perimeter gap between frame and opening with **low-expansion foam**, from inside. Do not overfill; foam can bow the frame.
2. Once cured, trim the foam flush.
3. Outside, insert backer rod and run a continuous bead of **silicone sealant** around the frame. Tool it smooth.
4. Inside, seal the frame to the wall or fit the **adapter and cover profiles** (N) as the shop drawings show.
5. Check every **drain slot** is open and its **drain cover** is fitted. Never seal over a drain slot.
6. Remove the protective film from all aluminum.

PARTS USED

Adapter and cover profiles (N) | Drain covers (L)

CAUTION

Use only neutral-cure silicone. Acid-cure (vinegar-smelling) sealants damage the finish and the glass edge seal.



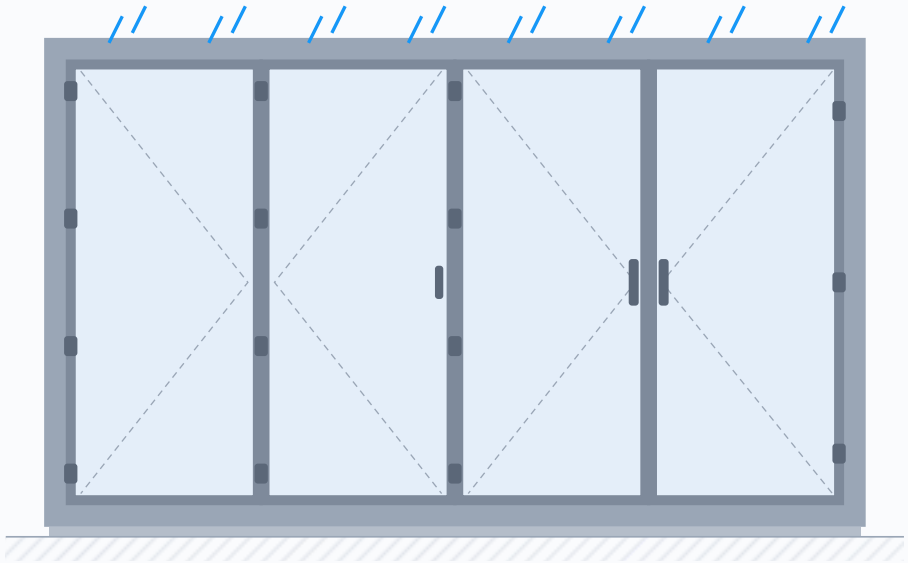
Seal outside · foam the gap · seal inside · keep drains clear

Test the door

Test the finished door before you hand it over. Wait 24 hours after sealing before the water test.

1. Fold the door fully open and closed five times. It must run smoothly and quietly.
2. Lock and unlock every handle. Every rod must engage.
3. Open and close the door sash. It must close by itself onto the stop without dragging.
4. **Water test:** from outside, spray each sash and the frame joints with a garden hose for 15 minutes, starting at the sill and working up. Check inside for leaks.
5. Clean the glass, frame and tracks. Vacuum the tracks.
6. Fill in the installation record on page 18.

> **TIP**
> If water appears inside, check the drain covers and sill seal first. Most leaks come from a blocked drain or a gap in the sill bedding.



Water test: light spray for 15 minutes per sash, from outside

SECTION 8

Final checks and handover

- [ ] Frame level, plumb and square (diagonals within ⅛″)
- [ ] All fixings in, shimmed and not overtightened
- [ ] Gaps even round every sash
- [ ] Door folds open and closed smoothly
- [ ] All locks engage top and bottom
- [ ] Glass marked as safety glass, no damage
- [ ] Beads and gaskets fully home
- [ ] Outside seal continuous, drains open
- [ ] Water test passed
- [ ] Film removed, door cleaned
- [ ] Homeowner shown how to use, lock and clean the door
- [ ] This manual and the warranty handed over

Installation record	
Pergolast order or invoice no.	
Site address	
Layout (e.g. 3+1, inward)	
Installed by (company)	
Installer name	
Date completed	
Water test passed (date)	
Homeowner signature	

Take photos of the finished door from inside and outside, the sill fixings before sealing, and the drain covers. Keep them with this record.

SECTION 9

Using your door

To open the whole wall

1. Open the door sash, if you have one.
2. Turn the gearbox handle on the lead sash to **open**. Both lock rods retract.
3. Push or pull the lead sash at the handle. The sashes fold and slide toward the stack side.
4. Guide the sashes into the stack. Never push them by the glass.

To close and lock

1. Pull the stack out by the handle of the end sash, keeping the sashes moving together.
2. Unfold until every sash is flat and closed.
3. Turn each handle to **locked**. Check the rods have engaged top and bottom.
4. Lock the door sash with its key if fitted.

Good habits

- Open and close with the handles, never by the glass or the edges.
- Do not let the sashes swing in a strong wind; fold them fully open or fully closed.
- Keep the bottom track clear of toys, stones and leaves.
- Do not hang anything from the sashes or the frame.
- Do not let children climb on the folded stack.

SECTION 10

Care and maintenance

Haven Fold needs very little care. A few minutes on this schedule keeps it running smoothly and protects the finish warranty.

Every month	Vacuum the bottom track. Wipe the track with a damp cloth.
Every 3 months	Wash frames and glass with clean water and a mild, pH-neutral soap. Rinse and dry. Check the drain slots are clear.
Every 6 months	Check gaskets are seated. Wipe them with silicone care spray. Lubricate lock rods and hinges with a light silicone spray. Never use oil or grease on the track.
Every year	Check the outside seal for cracks. Check the door folds smoothly and the locks engage; adjust if needed. Near the coast or a pool, wash monthly.

Never use

- Abrasive pads, scouring powder or steel wool
- Solvents, thinners, acetone or alcohol on the finish
- Pressure washers aimed at seals or drains
- Acid or alkaline cleaners, including brick and concrete cleaners
- Oil or grease on the track

If cement, mortar or paint splashes on the frame or glass, wash it off immediately with plenty of water.

SECTION 11

Troubleshooting

Problem	Likely cause	What to do
Door is hard to fold or slide	Dirt or debris in the bottom track	Vacuum and wipe the track. Remove any stones.
Sash drags or catches on the frame	Sash has dropped or hinge has moved	Adjust the trolleys and hinges as in step 5, or call service.
Lock won't engage	Sash not fully closed, or keep out of line	Close the sashes fully flat. If it still won't lock, adjust the keep.
Handle is stiff	Sash under strain from misalignment	Do not force it. Check the gaps and adjust the sash.
Water inside at the sill	Blocked drain slot or cover, or sill seal gap	Clear the drain slots and covers. If it continues, call service.
Draught along an edge	Gasket out of place, or sash not pulled in	Press the gasket home. Check the lock engages fully.
Condensation on the inside glass	High indoor humidity	Ventilate the room. Condensation between the panes means a failed unit; call service.
Noise when folding	Dry hinges or trolleys	Apply a light silicone spray to hinges. Never oil the track.

For anything not listed, or if a fix does not work, contact **service@pergolainstaller.com** with your order number and photos.

SECTION 12

Warranty and registration

Haven Fold is covered by the Pergolast Haven Collection Limited Warranty. The full terms are in the warranty document supplied with your order.

Component	Term
Aluminum frames, tracks and hardware	5 years
Powder coat finish	7 years
Installation workmanship (Pergolast team)	2 years parts, 1 year labor
Insulated glass unit seal	Per warranty document
Glass breakage	Not covered

Damage from storms or loads beyond the project design, misuse, modifications, or failure to follow this manual and the care schedule is not covered. Your rights under the law of your state are not affected.

Installed by a contractor

Doors installed by a contractor other than Pergolast carry the Pergolast **Product Warranty** on materials. The installation itself is the contractor's responsibility. For product claims, the door should have been installed to this manual and the shop drawings, with fixings to local code.

Register the installation

Within **30 days** of completion, email **service@pergolainstaller.com** with the order number, address and date, installer's company name, the installation record (page 18) and photos. Registration makes claims faster.

PERGOLAST
By GLASS GROUP

Complete it with the Haven Collection

Haven
Louvered roof

Haven Pro
Retractable louvered roof

Haven Net
Retractable fabric roof

Haven Shade
Motorized screens

Haven Glide
Sliding glass doors

Haven Rise
Guillotine glass

QUOTES AND DESIGN
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