

Caro Flood Defence Barrier Installation Guide

VERSION 1 2025

engineered for performance,
built for the planet.



CARO®
GROUP



APPROVED INSTALLERS

Although the Caro Flood Defence Barrier can be installed by a competent builder, Caro recommend that customers consider using one of our approved installers, a list of which can be obtained by contacting Caro Group:

Email: info@caro.co.uk

Phone: +44 (0)1763 244446

www.caro.co.uk

Caro recommend having a flood risk assessment carried out by an appropriately competent and qualified person prior to installation of the product to ensure the relevant routes for water entry have been identified and that the structural integrity of the building is not compromised by any flood resistance product.

Before You Begin

To enable the smooth installation of the Caro Flood Defence Barrier, the wall surfaces either side of the opening, particularly in a reveal fix scenario, will need to be plumb square to the ground surface where the barrier will be deployed. The ground surface will also need to be level and non-porous.

Any corrective remedial works would need to be carried out before commencing with installation of the Caro Flood Defence Barrier. The area should also be checked for potential underground and inner wall hazards/obstructions such as wires and pipes using a CAT scanning device.

Unless the ground surface is a smooth, level and non-porous concrete surface, Caro Flood Defence Systems would always be an advocate of using the aluminium ground strip to provide the best seal when it comes to preventing the ingress of flood water.



Requirements

For the installation of a Caro Flood Defence Barrier, you will require:

- a spirit level set (large and small one)
- a tape measure
- a hammer drill
- a drill suitable for fixing rails to the wall
- sealant and adhesive (CT1 clear, Soudal Fix All or similar)
- Postcrete, ballast (if required), sharp sand, cement and water with cement mixer or flexi-tub for mixing. If using flexi-tub, you'll need a paddle mixer. Grano mix may be required for harder ground.
- M6 x 50mm screws and wall plugs to suit relevant wall surface
- a concrete demolition breaker (for installing ground strips and ground inserts)
- an angle grinder / steel saw with concrete blade
- trowel set
- rubber mallet
- safety goggles and appropriate footwear
- Deployment in less than 10 minutes
- All components are less than 10kg in weight so no lifting assistance will be required

Installing A Caro Flood Defence Barrier (Up To 1500mm Wide):

Initial consideration/note – Enabling smooth install

- Smooth ground surface?
- Wall surfaces plumb vertical either side of opening?
- Are any packers required to allow the barrier to accommodate any overhanging door sills / windowsills?
- Plumb square to location of ground strip
- Ground Surface to be level and non-porous

Installing the aluminium ground strip (for barriers with no demountable posts):

1. Measure opening for ground strip length

For a Reveal fix barrier – this will require a trench full length of reveal x 200mm wide x minimum 200mm deep.

For a Face Fix barrier – this will require a trench full length of reveal + 150mm either end to allow for overlap x 200mm wide x minimum 200mm deep.

Note – the depth of the trench can vary depending on ground conditions.

The ground strip will need to be situated in the centre of that 200mm wide trench as this will form the flat and smooth deployment line for your aluminium panels.

Note – If installing aluminium packers, you will also need to factor this into your above calculations. For example, if you are using 50mm packers behind your Face Fix wall rails, you'll need to bring your 200mm wide trench 50mm out from the wall surface.

INSTALLATION

2. Mark out the outer line of your trench and cut using an angle grinder / steel saw.
3. Break up concrete with a demolition breaker and dig out trench as above.
4. Mix cement and sharp sand with water (use ballast as foundation for deeper voids or grano mix for harder ground).
5. Start filling trench with mix, evenly distribute and compact to create a solid foundation.
6. Then fill the remainder of the trench to floor level.
7. Whilst the trench is still wet, take your aluminium ground strip ensuring the sides with the holes are pushed into the mix and that the flat surface on top is level with the concrete either side. The ground strip should be applied to the centre point of your trench.
8. Use a spirit level and rubber mallet to achieve a level finished surface. Smooth the concrete with plastering trowel, whilst also ensuring the ground strip remains level by using your spirit level.
9. Once the desired finish is achieved, carefully clean off any excess mix from the ground strip and leave to cure.

Note – fitting of the wall rails should not be attempted until the concrete has completely set. In the unlikely event of water ingress on the dry side of the ground strip, a small bead of silicon will prevent this.



Installing The Wall Rails

Before commencing installation of the wall rails (particularly in a reveal fix scenario), check that your panels will fit once the rails are installed. The panels are cut to suit the structural opening size provided to Caro. This is not as critical in a face fix scenario, but it is still worth the due diligence.

For a reveal fix scenario, we deduct 22mm from the structural opening size, so if your opening is 1000mm, the panels would be cut to 978mm. This allows for an 8mm wall thickness of each wall rail extrusion and a 3mm clearance at each end to slide the panels in and out.

For a face fix scenario, we add 202mm to the structural opening

size, so if your opening is 1000mm, the panels would be cut to 1202mm. This allows for the wall rail to be fitted 65mm away from the reveal face. This is to reduce the possibility of splitting the brickwork when creating the drill holes. It is then 39mm from the start of the wall rail to the inner face of the channel and then we deduct 3mm for clearance at each end to slide the panels in and out.

The wall rails must be fixed to a non-porous wall surface to enable them to be installed correctly. Should this not be the case, the surfaces will need to be corrected to achieve the desired finish. Without this, you may experience issues with deploying your panels.

Once any corrective action has been completed, the rails can then be fitted:

- 1. Position the rail to the wall, use a spirit level to ensure it is in a perfectly vertical position and also that it sits square to the installed aluminium ground strip below.**
Note – for a Face Fix barrier, the inner face of the wall rail should be marked 65mm from the reveal.
- 2. Using the rail as a template, mark the fixing hole centres onto the wall and then remove.**
Note – if using aluminium packers, mark the start of the packer 58mm from the reveal as the packer is slightly wider (75mm wide) than the wall rail (61mm wide).

INSTALLATION

- 3.** Drill holes and insert plugs to suit M6 x 50mm screws. Again, if using aluminium packers, you'll need to adjust the length of your screws accordingly. Clean off any excess debris.
- 4.** Take wall rail and apply a liberal amount of CT1 adhesive sealant/ Soudal Fix All or similar to the back and bottom of the wall rail and across the screw holes, then offer up to the wall surface ensuring they align with the pre-drilled holes.
- 5.** If using the wall rail in conjunction with an aluminium packer, apply a liberal amount of CT1 / Soudal Fix All to the wall rail as outlined above and follow the same process on the front face, back face and bottom of the packer before aligning with pre-drilled holes.
- 6.** You will note the vertical D seal on the inner face of the wall rail is supplied slightly longer than the wall rail itself. This is done to ensure a good seal is achieved between the D seal and the ground surface when installed, so please do not trim. It would also be useful to apply some sealant to this area to further ensure a good seal.
- 7.** Using a spirit level, tighten fixing screws to ensure the wall rail is completely vertical.
- 8.** Once in place, seal around all sides of the wall rail (and packer if being used) with sealant, including within the inner face to achieve a good seal.



- 9.** Finally, clean off any excess sealant and allow to cure.

Repeat this procedure for the other rail.

Installing A Caro Flood Defence Barrier (Over 1500mm Wide):

To successfully install a Caro Flood Defence Barrier over 1500mm wide, you will need to install ground inserts along the barrier deployment line.

The location of these is determined by whether they are being fitted in a reveal fix or face fix scenario, the length of the panels supplied and on the assumption that the panels are all the same length.

For either Reveal Fix or Face Fix scenarios, you'll need to excavate a trench to install both the ground insert(s) to suit the demountable post(s) supplied and any aluminium ground strips that provide the flat surface on which to deploy your aluminium panels.

For a Reveal Fix barrier – this trench should be full length of reveal x 200mm wide x minimum 200mm deep (depending on ground conditions).

For a Face Fix barrier – this should be full length of reveal + 150mm either end to allow for overlap x 200mm wide x minimum 200mm deep (depending on ground conditions).

Note – If installing aluminium packers, you will also need to factor this into your above calculations. For example, if you are using 50mm packers behind your Face Fix wall rails, you'll need to bring your 200mm wide trench 50mm out from the wall surface.

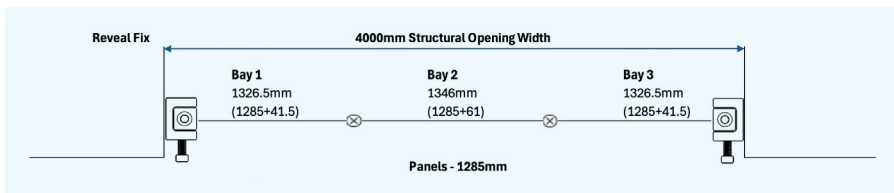
For both scenarios, mark out a straight line from the centre point of where the wall rails will be located, then mark out another two straight lines 100mm either side of the centre line.

At this point, you'll need to mark the centre points of where each ground insert will be installed using a tape measure for accuracy.

To calculate ground insert positions for a reveal fix barrier

For the first hole (adjacent to the reveal fix wall rail), take your panel length and add 41.5mm to find the centre. This should also be the dimension from the final demountable post centre point to the reveal fix wall at the other end of the span.

For any second and subsequent holes between the first and last bay of the barrier you would add 61mm to find the next hole centre.



For example...

Should you have a 4000mm wide opening with two demountable posts. The panel lengths would be 1285mm.

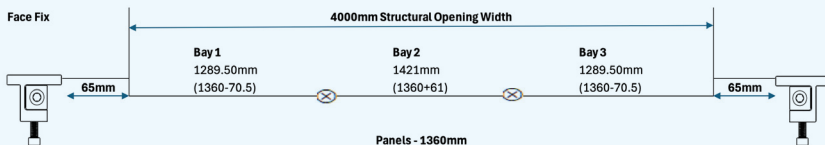
- The measurement to the first hole centre would be 1326.5mm ($1285 + 41.5$)
- The distance from the first hole centre to the next hole centre would be 1346mm ($1285 + 61$)
- The distance from the second hole centre to the other reveal would be 1326.5mm ($1285 + 41.5$), as per the first bay

To calculate ground insert positions for a face fix barrier

For the first hole (adjacent to the face fix wall rail – on the assumption that the wall rail is fitted 65mm past the reveal or 58mm if using an aluminium packer), take your panel length and deduct 70.5mm to find the centre. This should also be the dimension from the final demountable post centre point to the face fix wall at the other end of the span.



For any second and subsequent holes between the first and last bay of the barrier you would add 61mm to find the next hole centre.



For example...

Should you have a 4000mm wide structural opening with two demountable posts. The panel lengths would be 1360mm.

- The measurement to the first hole centre would be 1289.5mm ($1360 - 70.5$)
- The distance from the first hole centre to the next hole centre would be 1421mm ($1360 + 61$)
- The distance from the second hole centre to the start of the other face fix wall rail (again assuming fitted 65mm past the other reveal) would be 1289.5mm ($1360 - 70.5$) as per the first bay

Installing A Caro Flood Defence Barrier (Over 1500mm Wide): Continued...

Once you have worked out these calculations, mark each centre point on the ground surface with a straight line clearly overlapping on either side of the proposed 200mm wide trench. These will be important reference points when digging out and installing the ground inserts.

- 1. Once the outer line of your trench is ascertained, cut along the outer straight lines marked out using an angle grinder / steel saw then use a demolition break to excavate to a minimum of 200mm depth (dependent on ground conditions), whilst ensuring you don't lose your ground insert centre points.**
- 2. For the ground insert locations, you will need to excavate each hole to a depth of 440mm.**
- 3. Once all holes are excavated, mix Postcrete.**
- 4. Remove the cap from the ground insert and position into the first hole.**

It is vitally important that the ground insert not only lines up with its centre point (as per the earlier ground insert position calculation), but also the two "pointed" sides of the insert which should be equally adjacent/parallel with the centre of the barrier deployment line across the barrier length.

The word "FRONT" should also be on the potential flood water side.



5. After identifying the correct centre point, lower the ground insert into position and start filling with Postcrete mix around it up to the top of the ground insert's steel tube, evenly distributing.
6. To aid with the sealing process around the ground insert, using a funnel to protect the thread, ensure the internal void of the ground insert is also filled with concrete to roughly 3 inches from the top.
7. Again, to ensure the insert sets in exactly the correct position regularly check your levels and measurements with large and small spirit level and a tape measure, adjusting as necessary. If using aluminium ground strips, use these also as a template to assist with achieving the required dimensions as in most cases these will be supplied cut to suit your barrier opening size.

For the first and last bay of a reveal fix barrier, the ground strip should sit on the "lip" of the ground insert and level up against the reveal.

For subsequent bays between ground inserts, the ground strip should sit on the "lip" of the ground insert at both ends, level with no gaps.

In a face fix scenario, the principle is exactly the same as above, with the only difference being an overlap on the first and last bays where the wall rail fits on the face of the wall rather than the reveal.

Once the required level and location is achieved, the concrete around the ground insert should be left to cure before commencing the next stage.



Repeat this procedure for any other ground insert(s).

Do not attempt to install any aluminium ground strips until concrete around all ground inserts has cured. This is the most important element of an installation with demountable posts.

Installing The Aluminium Ground Strip (For Barriers With Demountable Posts):

Working on the assumption that the concrete around the ground inserts has cured and that the trench has already been excavated as per the ground insert instructions and that all ground strips fit before installing them:

- 1.** Mix cement and sharp sand with water (use ballast as foundation for deeper voids or grano mix for harder ground).
- 2.** Start filling trench with mix, evenly distribute and compact to create a solid foundation.
- 3.** Then evenly fill the remainder of the trench to floor level including around the perimeter of your already installed ground inserts.
- 4.** Whilst the trench is still wet, take each aluminium ground strip ensuring the sides with the holes push into the mix and that the flat surface on top is level with the concrete either side. You will also need to ensure they are located as per the instruction at the bottom of the "installing ground inserts" section.
- 5.** Assuming the ground inserts have been installed as directed, the ground strips should fit seamlessly between ground inserts, but you'll need to use a spirit level and rubber mallet for the first and last bays to achieve the required level finished surface.



INSTALLATION

6. Smooth the concrete with plastering trowel, whilst also ensuring the ground strip(s) remains level by using a spirit level.

7. Once the desired finish is achieved, carefully clean off any excess mix from the ground strip and leave to cure.

Note – fitting of the wall rails should not be attempted until the concrete has completely set.

8. Once set, apply some CT1 / Fix All or similar to the small area between where the ground insert and aluminium ground strips meet and wipe clean any protruding excess. Once the above is complete, head to the “Wall Rails” section to complete the remainder of the installation.





kiwa
APPROVED

**Property Flood
Resilience
KA-25-1001**

BS 851188-1

Caro Flood Defence Barriers Tested & Approved

Caro Group is the first company in the UK to be tested and **approved to BS 851188-1:2019+A12021**, the British Standard for demountable barriers, and to gain **approval by KIWA** making it the number one choice for commercial and residential users throughout the UK.

Engineered For Performance, Built For The Planet



The Caro Group of Companies is a UK leader in precision engineering and sustainable manufacturing. With a heritage dating back to 1849, Caro combines deep-rooted craftsmanship with future-focused innovation across multiple sectors — from construction and water management to advanced casting techniques.

At the core of the Group's identity is a commitment to environmental responsibility. Caro's products are proudly carbon-negative, thanks to major investment in clean manufacturing, responsible sourcing, and waste reduction — recognised with the prestigious Gold Future Net Zero award. Caro's demountable barriers are custom-made at its production facility, in Kent, UK.



Together, the Caro Group sets a new standard in engineering — where long-term performance and planet-first thinking go hand in hand.

Caro Flood Defence Systems

Focused on protecting properties from flood damage, Caro Flood Defence Systems designs and supplies robust, reusable barrier systems that are easy to deploy, reliable in performance, and built with environmental durability in mind.

Whether you're in need of flood defence for domestic doors or large-scale flood defence barriers for commercial premises, Caro offers reliable, proven, and easy-to-use flood protection solutions tailored to your needs.



Accreditations: BS 851188-1:2019+A1:2021, ISO 9001, PAS 1188 compliant (Flood Protection Products).

Replacement / Additional Parts

All parts are manufactured in the UK at our foundry.
To order additional or replacement parts, contact our team today:

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