

PUDLO Self Seal Membrane Installation Guide



Part of the DBGroup

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Introduction

PUDLO Waterproofing Systems has been at the forefront of protecting structures from water ingress for over 140 years. To expand on our widely used additive for Type B (structural integral) concrete, we launched our first successful membrane system (Type A) in 2016.

Since then PUDLO has launched a number of waterproofing membranes, PUDLO TS TR & TF Membrane, PUDLO Self Seal, PUDLO Liquid Tank, PUDLO Render Seal, as well as the PUDLO GB Ultra range which was the first of its kind in the UK to provide protection from both gas and water in accordance with BS 8485:2015.

2018 saw another new, exciting product range introduced to our successful waterproofing offering, the PUDLO Cavity Drain System.

PUDLO Waterproofing Systems can now provide a three-tier waterproofed system, giving our customers complete peace of mind.

PUDLO Self Seal system

PUDLO Self Seal membrane is a self-adhesive, high performance and cold-applied waterproof membrane which is manufactured from tough HDPE film and a layer of rubber modified bitumen adhesive. The product can be used as a damp-proof and waterproof membrane.

Accreditation & installers

PUDLO Self Seal is covered under its very own BBA certification and complies with relevant building regulations. This also includes the ancillary products associated with it. PUDLO Self Seal must be installed strictly in accordance with the certificate's requirements

Recommended installers (third party)

PUDLO Waterproofing Systems works with several specialist installers of PUDLO Self Seal. A person/company is considered a recommended installer only after:

- Having actively attended a technical session (hands-on) with PUDLO Waterproofing Systems
- Having satisfactorily completed their first job following the technical session (start-up)

Installers of the PUDLO Self Seal are all familiar with such Type A systems and we only work with third parties who are expert in waterproofing, professional and have the technical knowledge to provide the end user with a robust waterproofing system.

PUDLO Self Seal is covered under a 20-year product warranty with a separate 12-year installation warranty issued to the client directly by the recommended installers (or what has been agreed between client and installers).

Note: In the event the client requires an all-encompassing 20-year performance warranty directly from DB Group (Holdings) Limited (strictly applies only where PUDLO CWP is used as part of a dual system), please contact PUDLO directly to discuss your specific project requirements. We are always contactable and happy to assist.

Third Party on-site quality concrete

It is important to ensure that the PUDLO Self Seal is installed by skilled and trained operatives to achieve optimal performance on the first attempt. The works will be executed on the instruction of the contractor and must be completed by a fully trained and competent person who can install PUDLO Self Seal.

Note: The PUDLO Self Seal system is not covered under the PUDLO Premium QA System (unless used in conjunction with PUDLO CWP). However, we can put several measures in place to ensure the client is in safe hands with third party specialist installers.

PUDLO Self Seal installation & ancillaries

The PUDLO Self Seal system comes with several ancillaries that are vital to achieving optimum performance. If any one of these products are installed incorrectly it may result in failures in the waterproofing system.

Listed below are the general principles of the PUDLO Self Seal membrane system:

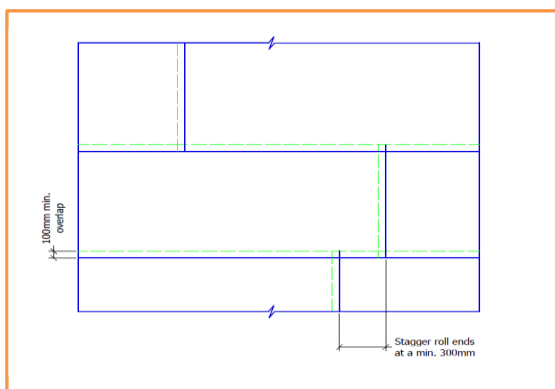
1.1 - All substrates should be smooth, clean, dry and free from any sharp edges. Loose material and contaminants should be removed as this will affect the installation of the membrane. Note: The membrane should NOT be installed in wet conditions or on top of a damp surface.

1.2 - When bonding PUDLO Self Seal to the surface, care should be taken to avoid air pockets beneath the membrane. To achieve good adhesion, apply pressure throughout the membrane from the centre towards the edges and ensure the membrane is warm. Note; Bitumen systems do not bond as well to cold surfaces / cold temperatures and need warming up.

1.3 - Membrane overlaps should be staggered and minimum 100mm overlap must be achieved

1.4 - Membrane overlaps must be secured and fully bonded. Rollers are a good tool to use to apply even pressure throughout the overlaps

Figure 1



Site preparation

2.1 - Priming the substrate will bind any remaining surface dust and stabilise the surface

2.2 - All surfaces must be primed using PUDLO Self Seal Primer

2.3 - PUDLO Self Seal Primer should not be applied to the membrane and is not necessary for overlapping membrane joints. Note: Only prime the surfaces that are being covered the same day the membrane is installed. Application of the membrane should commence as soon as the primer is dry

Angles / edges

2.4 - External angles should be chamfered so sharp edges are avoided. Sharp edges could tear the membrane which could compromise the waterproofing

2.5 - When transitioning from horizontal to vertical prior to application of the membrane, a fillet should be installed. These fillets can be pre-formed by using missing sand / cement mortar

2.6 - All internal and external angles should be reinforced with a strip of PUDLO Self Seal Reinforced Strip

Membrane application - horizontal surfaces

3.1 - Installation of PUDLO Self Seal must be carried out by two people. Mark a straight line onto the concrete to note where the edge of the first roll needs to be positioned and roll out the membrane around 1.5m from the marked line

3.2 - At the end of the PUDLO Self Seal, lift and peel back about 500mm of the backing and fold this underneath the roll. Apply the PUDLO Self Seal to the surface along the marked line and bond the exposed adhesive side of the membrane to the concrete. Once applied, press down from the centre of the membrane and smooth out to the edges

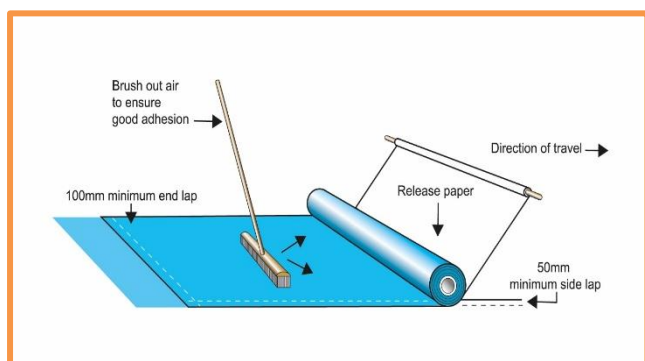
3.3 - Push the roll back to rewind it until the loose end of the release paper can be grasped with both hands and pulled away from underneath the membrane. Take up the backing, ideally winding this onto a wooden rod, until this is at an angle for the installer to use easily

3.4 - When applying the PUDLO Self Seal, the first person should walk slowly backwards making sure they are applying an even strain to the release backing which should wind round the wooden rod, making sure that the membrane is aligned along the marked line

3.5 - Once the PUDLO Self Seal has been placed, the second person must then apply pressure onto the surface of the membrane making sure there is good adhesion to the surface and no air has been trapped underneath

3.6 - Once the first roll has been laid, the next roll should be positioned, overlapping the end of the previous roll to form an end lap joint and bond 500mm to the surface. Once the first roll of PUDLO Self Seal has been applied, lay the next roll alongside the previous roll laying it in the same way as before.

3.7- As well as making sure there is a good bond to the substrate, the installer must ensure there is a watertight joint across and along the whole of the side lap by pressing down on the PUDLO Self Seal using a roller



Membrane application - vertical surfaces

4.1 - Secure the end of PUDLO Self Seal at the top of the vertical surface (this will depend on the site conditions). The installer may need to mechanically fix the PUDLO Self Seal to the top of the substrate by fixing a wooden batten across the top of it.

4.2 - Once secured, unroll the PUDLO Self Seal for approx. 1 metre and peel back 500mm of the backing paper from the roll, fold this over and then press the exposed self-adhesive compound onto the surface to create a strong bond.

4.3 - Unroll and lower the PUDLO Self Seal towards the group until the sheet is hanging vertically against the surface. Take hold of the release backing that was previously folded back and slowly but firmly pull it down. As with the horizontal application, the release backing should be wound around a wooden rod to make this easier.

4.4 - As the release backing is peeled away, the self-adhesive layer should be pressed firmly to the surface.

4.5 - If an end of roll overlap joint is to be formed, the end lap dimensions should be a minimum of 100mm. The overlap joint should be formed by lapping the end of the first roll on top of the second. Press down using a hand roller.

4.6 - Once the first roll has been applied, the next roll should be fitted adjacent to the first roll in the same way with a side lap joint along the membrane.

Completing the installation

5.1 - As soon as the PUDLO Self Seal has been laid, it should be covered by backfilling and should be protected by PUDLO Geo-Flo. For vertical applications, the backfill materials should ideally be sand or soil which should not contain debris as it could damage the membrane.

5.2 - If the backfill has debris in it or if this cannot be determined, then the PUDLO Self Seal must be protected with PUDLO Geo Flo. The use of the PUDLO Geo Flo is important for vertical applications because if the backfill is performed from a height, then the drop could cause damage to the membrane. PUDLO Geo Flo also acts as a drainage layer.

5.3 - Horizontal applications of PUDLO Self Seal can be covered using sand/cement screed, paving, pea gravel or other specified material. PUDLO Geo Flo on horizontal surfaces is important if the slab is to be used as a green roof.

Precautions during fitting

6.1 - Surface prep, membrane application, protections and backfilling should be carried out as soon as possible to minimise any chance of the PUDLO Self Seal becoming damaged. There should be minimum delay between priming, application and covering as high temperatures, dust and dirt or other site workers may damage the membrane during any delay

6.2 - As mentioned in 6.1, high temperatures can damage the PUDLO Self Seal and may cause it to blister. Blistering will not reduce waterproofing performance once covered.

6.3 - If the fitting of the PUDLO Self Seal is interrupted for a week or more then it is recommended that the exposed edges of the membrane are fixed fully to the substrate and sealed with double-sided tape. The tape can remain in position and will be covered by the next roll of membrane when the fitting recommences. Any horizontal applications of PUDLO Self Seal must be covered by PUDLO Geo Flo as soon as this is fitted.

6.4 - Any temporary battens that have been used to secure the PUDLO Self Seal should be left until installing PUDLO Self Seal and backfilling. The top of the PUDLO Self Seal should be reinforced by bonding some of the membrane across horizontally.

General detailing

7.1 - When two different structural elements join the PUDLO Self Seal, this needs to be reinforced with PUDLO Reinforced Strip so that it reduces stress on the PUDLO Self Seal by any relative movement of the structural elements.

7.2 - All overlapping joints should be formed in a way that the final exposed edge is facing downwards.

7.3 - It is essential to bond all membranes, corner pieces and reinforcing strips fully to the substrate.

Corner detail

7.4 - When laying the PUDLO Self Seal around a corner angle between two walls, the corner should be smoothed by fitting a vertical fillet of sand and cement mortar. Reinforce fillets with PUDLO Reinforced strip, tape along the angles and bottom corners applying a 300mm strip in these areas.

7.5 - When applying the membrane either vertically or horizontally it must be lapped over the corner and the adjoining membrane. Both horizontal and vertical membrane will have to be cut and folded in precisely the same way as the corner pieces so that they can be applied correctly at the bottom corner.

BS 8102:2009

When it comes to waterproofing below ground, two key elements are vital to successfully keeping everything dry and performing correctly. Firstly, the design should be carried out in consultation with a professional who is CSSW accredited. Secondly, the design should be done in accordance with BS 8102:2009

'Code of practice for protection of below ground structures against water from the ground'.

Grade	Example of Use	Performance Level
1	Car parks, plant rooms (excluding electrical equipment), workshops	Some leakage and damp areas are tolerable, depending on the intended use. Local drainage may be necessary to deal with leakage
2	Plant rooms and workshops requiring a drier environment (then Grade 1), storage areas	No water penetration, damp areas tolerable; ventilation might be required
3	Ventilated residential and commercial areas including offices, restaurants, leisure centres, etc.	No water penetration acceptable. Ventilation, dehumidification or air conditioning necessary, appropriate to intended use

PUDLO Waterproofing Systems’ technical and commercial teams are TechICT / AMICT and /or CSSW accredited, we are happy to consult on the design where instructed. There are three different types of waterproofing and three different grades, as listed below:

1. Type A - Barrier protection, where groundwater is stopped at the point of entry by the application of a waterproof membrane
2. Type B - Structurally integral protection, where the basement structure is designed and built to be watertight in its own right

3. Type C - Drained protection, where the structure allows limited ground water to penetrate and then diverts the water in a controlled manner to pump or drainage. (This system should not be used where hydrostatic pressure is present

A) Leakage and damp areas, for some forms of construction, can be quantified by reference to industry standards, such as the ICE’s Specification for Piling and Embedded Walls

B) Archives, landmark buildings and stores requiring a controlled environment need special consideration, e.g. see BS5454 regarding archives

PUDLO Self Seal falls under Type A - barrier protection

When it comes to performance, it is vital that the system is installed by a fully trained and competent individual. PUDLO Waterproofing Systems prides itself on maintaining the highest standards and only works with companies/individuals who work to the same standards.

Note: Before work starts on a project, please consult PUDLO Waterproofing Systems for advice to ensure you achieve optimal performance. Installation quality is vital as no two projects are ever the same.

Surestop BWB



PUDLO Self Seal can be incorporated as a dual system with either a Type B or Type C. Where a Type B system is used, regardless of whether it is PUDLO CWP or if the concrete is designed to BS 8007 / EN 1992-3 limiting crack widths to 0.2mm, all construction joints should be installed with Surestop BWB.

Surestop BWB is a red hydrophilic strip made of natural sodium bentonite for the sealing of construction joints in cast-in-place concrete. Surestop BWB expands over its original dry volume on contact with water to form a positive seal.

Surestop BWB is supplied in 25mm x 20mm x 5m rolls in boxes (6 x 5 metre rolls per box).

For fixing instructions please refer to:

- Surestop BWB BBA certificate
- Surestop BWB product data sheet
- The PUDLO System Concrete Standards & Best Practice literature
- Typical details - available on request from your Technical Manager or PUDLO Site Support Team representative

Limited Warranty

PUDLO Self Seal Membrane should only be installed once the site ground conditions are suitable to receive the waterproofing product. **PUDLO Self Seal Membrane** is designed to be used on most substrates and is NOT designed to waterproof against hydrostatic pressure as a single system or movement / expansion joints. Please consult DB Group (Holdings) Limited for special installation guidelines. The information and data contained herein is believed to be accurate and reliable. Specifications and other information contained within this 'guide' supersede all previously printed material and is subject to change without prior notice. Manufacturer's warranty of the installed system is available. Please contact DB Group (Holdings) Limited for terms and limitations. All goods sold by the seller are warranted to be free from defects in material and workmanship. The warranty is in lieu of and excludes all other warranties not expressly set forth herein. Seller shall not be liable for incidental or consequential losses, damages or expenses, directly or indirectly arising from the sale, handling or use of goods, or from any other cause relating thereto, and seller's liability hereunder in any case is expressly limited to the replacement (in the form originally shipped) of goods not complying with this agreement or at seller's election, to the repayment of, or crediting buyer with, an amount equal to the purchase price of such goods, whether such claims are for breach of warranty or negligence. Any claim by buyer with reference to the goods sold hereunder for any cause shall be deemed waived by buyer unless submitted to seller in writing within 30 days from the date buyer discovered or should have discovered any claimed breach.

Materials should be inspected and tested by purchaser prior to their use if product quality is subject to verification after shipment. Performance guarantees are normally supplied by the installer of the **PUDLO Self Seal Membrane**.