

Technical Pocket Guide

Firestone



Lining for Life™

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Introduction

This Firestone PondGard Technical Pocket Guide has been designed to provide the installer with basic information for quick reference during the installation of a Firestone PondGard system in small size decorative and landscape ponds. For large size decorative and landscape ponds, we recommend consulting the Firestone Geomembrane Installation Guidelines for Water Reservoirs.

This Pocket Guide contains information that may assist you during the preparation of your project, as well as basic installation tips and some of the most commonly used Firestone EPDM lining details. When more complete product or detail information is required, we recommend consulting the Firestone Geomembrane Installation Guidelines for Water Reservoirs. For the most current information about products and details, please visit the Firestone website at www.firestonebpe.com.

In case you would still need additional assistance and/or clarification, please do not hesitate to contact Firestone's Technical Department or a Firestone technical representative.

Finally, Firestone welcomes any comments that may help us to improve present document.

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This brochure is meant only to highlight Firestone's products and specifications. Information is subject to change without notice. All products and specifications are listed in approximate weights and measurements. For complete product and detail information, please refer to the technical information posted on www.firestonebpe.com. Firestone takes responsibility for furnishing quality materials which meet Firestone's published product specifications. As neither Firestone itself nor its representatives practice architecture, Firestone offers no opinion on and expressly disclaims any responsibility for the soundness of any structure on which its products may be applied. If questions arise as to the soundness of a structure or its ability to support a planned installation properly, the owner should obtain opinions of competent structural engineers before proceeding. Firestone accepts no liability for any structural failure or for resultant damages and no Firestone Representative is authorized to vary this disclaimer.



1 Product information

1.1 Firestone PondGard membrane

Firestone PondGard is a 1,0 mm thick cured EPDM membrane engineered to provide dependable performance for decorative and landscape pond applications:

- Exceptional durability
- Great flexibility for creative design
- High elasticity for great puncture resistance
- Safe for aquatic life
- Available in large sheets (up to 930 m²)
- Easy to install and repair
- Low maintenance

Firestone PondGard is used successfully since 1990 in a wide variety of decorative and landscape pond applications worldwide:

- Garden ponds
- Koi ponds
- Natural swimming pools and ponds
- Reflection ponds
- Waterfalls
- Streams
- Fountains
- Lakes*
- Golf course ponds*

* *Applications not covered by this Pocket Guide*

The Firestone PondGard membrane is factory-assembled into large, fully vulcanized seamless membranes. It is supplied in the following dimensions:

Length (m)	30.5; 45.75; 61.00
Width (m)	3.05; 6.10; 7.62; 9.15; 12.20; 15.25

Note: *Not all roll widths are available in all possible roll lengths*



Note:

All substances that will enter in contact with Firestone PondGard shall be compatible with the liner in terms of chemical composition, pH, temperature... In case of doubt, contact Firestone technical service.

1.2 Firestone PondGard accessories and tools

QuickPrime Plus

Firestone QuickPrime Plus is designed to clean and prime the Firestone PondGard in seaming areas, before application of a QuickSeam product. The primer activates the membrane surface and improves the seam quality. Firestone QuickPrime Plus must be applied with a QuickScrubber.

Application:

Apply QuickPrime Plus to the Firestone Pondgard surfaces with the QuickScrubber tool using long back and forth strokes with moderate to heavy pressure along the length of the area until surfaces become dark grey in color with no streaking or puddling. Allow the primed surfaces to dry completely (usually less than 10 minutes) before applying the QuickSeam product.

QuickScrubber (handle + pad)

The QuickScrubber pad and handle have been designed to apply the QuickPrime Plus on the PondGard membrane. It allows consistent cleaning of the membrane and constant application of the primer.

Silicone Rubber Roller

The 50 mm Firestone Silicone Rubber Roller is made to roll the membrane and QuickSeam accessories in order to create intimate contact with the QuickPrime Plus.

QuickSeam Splice Tape

Firestone QuickSeam Splice Tape is a 76mm wide (3") adhesive strip designed for field splicing of Firestone PondGard panels.



QuickSeam FormFlash

QuickSeam FormFlash is a self-curing rubber strip, adaptable to irregular shapes and designed to flash system details (inside and outside corners, pipes, reinforcement patches...) in accordance with Firestone specifications. The FormFlash layer is factory laminated to QuickSeam Tape. The products are available in the following format:

- QuickSeam FormFlash 9" : a 229mm wide strip
- QuickSeam FormFlash 12" : a 305mm wide strip

QuickSeam Corner Flashing

QuickSeam Corner Flashing is a self-curing round rubber piece with a diameter of 216mm, adaptable to irregular shapes and designed to flash system details (inside and outside corners, reinforcement patches...) in accordance with Firestone specifications. The FormFlash layer is factory laminated to QuickSeam Tape.

QuickSeam SA Flashing

QuickSeam SA Flashing is a 457mm (18") wide non-reinforced EPDM Geomembrane fully laminated to Firestone QuickSeam Tape. SA Flashing is a labor saving and environmentally friendly alternative to conventional methods which use contact adhesive for attachment. SA Flashing can be used for pipe base flashing where pipe diameter allows. It can also be used for repairing cuts and punctures in the EPDM Geomembrane.

Bonding Adhesive (E)

Firestone Bonding Adhesive (E) is a solvent based contact adhesive designed for bonding Firestone PondGard to wood, metal, masonry and other acceptable non-rubber substrates.

Application:

Apply the adhesive in an even, smooth coat on both surfaces with a solvent-resistant paint roller and avoid globs and puddles. Apply the adhesive first to the substrate as the drying time will most likely be longer than for the black EPDM membrane. Allow adhesive to flash off until tacky (time depending on ambient air conditions). Test the adhesive for its dryness, using the push-



touch test procedure. If the adhesive is ready, mate both surfaces and press with a broom.

Lap Sealant HS

Firestone Lap Sealant HS is designed to seal and mechanically protect the exposed cut edges of QuickSeam Flashing products.

Application:

Apply with a mastic gun a bead of Lap Sealant HS along the properly cleaned, exposed seaming edge. A preformed tool shall be used to feather the bead of sealant. Feathering must take place immediately after the Lap Sealant is applied.

Water Block Seal

Firestone Water Block Seal is designed to provide a watertight seal as indicated in the details.

Application:

Apply a bead onto the substrate surface. Roll or press the flashing membrane firmly against the seal and substrate avoiding wrinkles to assure a complete seal. Install the appropriate Firestone detail as per Firestone's current specification.

Splice Wash

Firestone Splice Wash is designed to clean and prepare heavily contaminated Firestone EPDM Geomembrane in areas to receive QuickPrime Plus. Remove excess accumulations of dirt with a brush (and water) prior to application.

Application:

Apply Splice Wash to the splicing area using clean cotton rags in a scrubbing motion until the splicing surface is dull black in color. Allow the cleaned surfaces to dry before applying QuickPrime Plus.

Termination Bar

Firestone Termination Bar is designed for attaching and sealing flashing terminations as per Firestone's current specifications.



Preparation:

Substrates must be clean, dry, free from loose and foreign materials, oil and grease. Substrate needs to provide sufficient pull-out resistance. When field cutting is necessary, remove any burrs from the bar and clean up shavings that may result from cutting.

Application:

Install Water Block Seal behind flashing. Anchor the bar through pre-punched holes at a rate to maintain a tight compression to the wall against Water Block Seal. Remove excess flashing material above and install Lap Sealant into the upper channel. Keep each piece of Batten Strip separated from adjoining strip by 6 mm and cut the bar at inside and outside corners.

General information

- Restore PondGard accessories to room temperature prior to use if exposed to temperatures below 15°C for prolonged periods.
- Before using QuickSeam accessories, the PondGard surface must be prepared with QuickPrime Plus, using a QuickScrubber tool. Use of other products is not allowed.
- Surfaces that will receive Firestone Primer, Adhesive or Sealant must be clean, smooth, dry and free of sharp edges, loose materials, oil, grease and other contaminants. The mating surface of the PondGard shall be cleaned with a brush or clean rag.
- Stir the primer and adhesive before and during use to achieve a uniform mix with no sediment on the bottom and no marbling evident.



1.3 Product coverage rates

Cleaning Products	Application	Rate	Unit (1 gallon = 3,8l)
QuickPrime Plus	3" Standard Seam (76 mm)	60	Lin.m./gallon
	9" QuickSeam FormFlash (229 mm)	65	Lin.m./gallon
	12" QuickSeam FormFlash (305 mm)	55	Lin.m./gallon
Splice Wash	Only on heavily dusted and contaminated membrane	-	-
Adhesives	Application (always two sides)	Rate	Unit
Bonding Adhesive	manual application	5	m ² /gallon
Bonding Adhesive E	manual application	2	m ² /liter
Sealants	Application	Rate	Unit
Lap Sealant	Seam edge protection	7	Lin.m./tube
Water Block Seal	Penetrations with clamping system	3	Lin.m./tube
	Termination bar	3	Lin.m./tube



2 Job preparation

2.1 Tool list for installation of PondGard

Job preparation

- Tape measures (50 m and 5 m)
- Chalk line
- Scissors
- Stiff bristle brooms
- Squeegee

Cleaning the PondGard

- Clean cotton rags
- Cleaning agent – Splice Wash

Field seams/details

- QuickScrubber (pad + handle)
- Small plastic bucket
- Marker (white)
- Roller – 50 mm width (silicone rubber)
- Caulking gun

Gluing the PondGard membrane

- Paint rollers (solvent resistant, short hair and 225 mm width)
- Stiff bristle broom

Mechanical fixation

- Drilling machine with key
- Drill bits
- Screw-driver
- Tin snip
- Saw

Additional

- Mixer
- Electrical leads
- Rubber gloves
- Tool box



2.2 Material precautions and recommendations

- Deliver the Firestone PondGard membrane to the job site using proper equipment and store in a clean, flat and dry area in order not to damage the membrane. Inspect packaging for possible damage.
- Deliver the Firestone accessories to the job site in their original sealed containers and store them cool and dry, out of the sun.
- Keep all adhesives, sealants and cleaning products away from ignition sources such as torches, flames, fire, sparks etc. Do not smoke in the vicinity of these products. Store and use these products in well-ventilated areas.
- Stir adhesives and QuickPrime Plus before and during use. Restore adhesives, QuickPrime Plus and sealants to room temperature prior to use, if exposed to temperatures lower than 10°C.
- Protect all rubber products from discharges such as petroleum products, greases, oils (mineral and vegetable), organic based solvents, and fresh bitumen (less than 4 weeks old). Do not use materials that have been damaged to the point that they will not perform.
- Protect the PondGard system from direct contact with steam or heat sources higher than 65°C.

2.3 Ground and substrate considerations

In order to ensure the maximum working life of Firestone PondGard, it is always recommended to install a protective geotextile underlayment (minimum weight of 300 g/m², depending upon the nature of the substrate).



Requirement	Specific description
Smoothness	Clean, smooth, compacted, free of aggressive angle changes, stones (no loose stone with a diameter exceeding 5 mm) and small cavities.
Vegetation	All plant growth must be removed from the base prior to compaction in order to avoid any gas generation and compression of the base.
Compaction	<p>Optimally compacted (minimum recommended value 95% of the normal Proctor Optimum).</p> <p><i>NOTE: Compaction of the soil around concrete structures must be performed with particular care to limit settling. Backfill material must be compacted to 95% of Proctor Optimum.</i></p>

The state of the art wants that the bottom of the pond has to be higher than the highest underground water level.

The bottom of the pond will have a minimum fall of 2%.

Depending on the deepness of the underground water table a gas drainage system will be installed to avoid under pressures.

A water drainage system can also be installed as a leak detection system.



3 Installation

3.1 General recommendations

Firestone PondGard membranes are installed in such a way as to avoid horizontal splices on the embankments.

Traces of primer on the membrane may cause white staining in contact with water. For non-covered decorative applications, it is then recommended to restrict the excess of primer and protect seaming edge with Lap Sealant.

3.2 Weather conditions

Placement of Firestone PondGard shall not be performed during any form of precipitation (rain, snow, hail) and fog.

Recommended temperature range for assembling Firestone PondGard and waterproofing of details is between 5°C and 30°C. Outside this temperature range specific installation process applies. Firestone PondGard membranes have been applied at temperatures at least as low as -40°C and as high as +50°C without the use of any special equipment. However, at very low or high temperatures, there are a couple of points to consider in order to achieve quality installation:

- Firestone PondGard panels usually relax within 30 minutes of placement. Cold weather application extends this waiting time.
- Precautions should be taken when using adhesives, sealants or QuickPrime Plus in cold weather conditions (below 10°C):
 - Start working with sealants, adhesives and QuickPrime Plus at room temperatures (15-25°C). The use of insulated, heated boxes may be advantageous.
 - Complete a test splice to determine the flash off time.
 - Stop the operation or change the material when the product becomes too stiff.



- Certain combinations of temperature and humidity may cause condensation on the surface of the product. If this occurs, stop the operation and wait for better ambient conditions, prior to drying the surface and re-applying a thin additional layer of adhesive.
- Never use torches or heat guns to speed up the drying process of adhesives or QuickPrime Plus. Allow to air dry only.
- In warm weather conditions (> 25°C) following changes should be made to the installation technique
 - Do not store the QuickPrime Plus directly onto the heated membrane and/or exposed to sun.
 - Do not leave primer cans open as the solvents will evaporate quickly.
 - As temperature increases, the drying time of the QuickPrime Plus is reduced. Shorten the length of the seaming section to 10 lm. First apply the primer to the lower membrane, then apply QuickSeam Splice Tape before priming the top membrane.

The installation, positioning and seaming of large PondGard panels may be difficult in windy conditions. Prevent that any wind gets under the liner during installation. Use temporary ballast to keep the PondGard panels in place until final securement to the substrate. Stop the installation during stormy conditions.

Do never use open flame sources (propane torches, etc.) to expedite drying of primer, adhesives, sealants, etc. Use air-dry only.

3.3 Placing the Firestone PondGard

- Check the substrate for any pebbles or sharp objects.
- Inspect the wrapper and PondGard Roll for damage before and during installation.
- Position the PondGard Roll as close as possible to its final position. The direction for unrolling the sheet is marked on the wrapper.
- Avoid horizontal splices on the embankments.



- The panels are unrolled from the trench towards the embankment and are temporarily fixed to avoid them from slipping down.
- Position the PondGard without stretching. The panels can be moved sideways by floating and allowing air underneath.
- Allow ample material for splicing and anchoring.
- A partial ballasting in the ditch or outside the pond can be done immediately, final anchoring is done at a later stage.
- Allow each panel to relax for a minimum of 30 minutes prior to splicing. In cold weather conditions, additional relaxation time may be required.
- Use temporary ballast where required (sand bags, tires or wooden planks).
- Make neat straight cuts, using markers, chalk line and scissors. This ensures an easy and neat application.
- The PondGard is placed with no tension and avoiding excessive wrinkles. For aesthetic reasons, wrinkles can be folded, glued with primer and covered using a strip of membrane or QuickSeam SA Flashing.

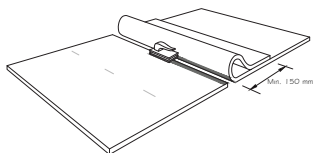
3.4 Splicing with QuickSeam Splice Tape

Installation instructions:

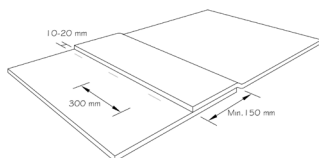
- If the seam area is contaminated (e.g. with mud) clean the liner with Splice Wash (using a clean cotton rag) before applying the QuickPrime Plus.
- Stir the QuickPrime Plus prior to pouring it into a small plastic bucket.
- Twistlock the Scrubber pad onto the QuickScrubber handle.
- Apply the QuickPrime Plus evenly and avoid puddling.
- Stop priming in case of condensation or rain. Do not close the seam, but wait for better conditions and re-apply a thin layer of QuickPrime Plus.
- When misalignment occurs, cut the tape and make an overlap of minimum 25 mm with the end of the installed tape.
- Any fishmouths or wrinkles that occur should be cut away and repaired with a piece of QuickSeam FormFlash (see §5.2).



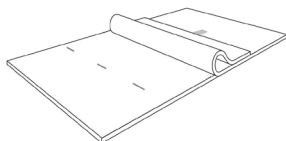
1. Position and bond adjacent panels



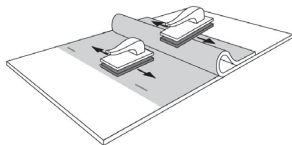
2. Mark the position of the tape on the bottom sheet



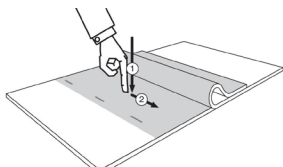
3. Fold back the lap edge and temporary fix with QuickPrime Plus



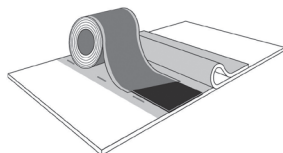
4. Apply QuickPrime Plus



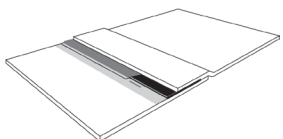
5. Check for dryness (touch-push test)



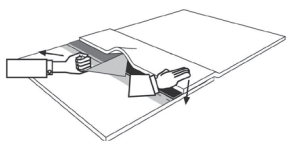
6. Install and roll the tape using silicone roller



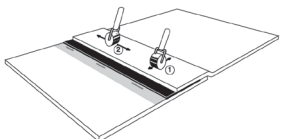
7. Check tape alignment and trim back if necessary



8. Remove paper backing

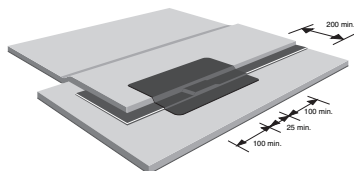


9. Roll the seam

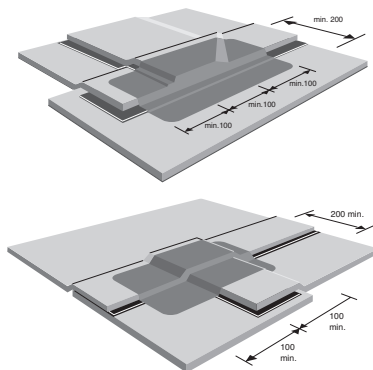


10. Special considerations (using a piece of FormFlash)

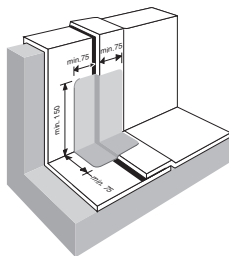
End of tape



T-joints



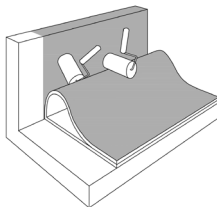
Angle joints



3.5 Adhesion to walls

Installation instructions:

- Soil around the concrete or masonry structure must be compacted.
- Connection surfaces must be smooth, clean, dry and must not present any sharp protrusion.
- Place the sheet in its final position and fold it back evenly onto itself.
- Stir the Bonding Adhesive thoroughly before and during use.
- Apply the adhesive using a paint roller with solvent resistant short bristles to both substrate and PondGard membrane within the same time frame.
- Apply Bonding Adhesive to the substrate first as this will require a longer drying time.
- Allow the adhesive to flash off until tacky (touch-push test).
- Slowly mate the PondGard to the coated substrate, starting in the middle of the wall and keeping the membrane in a straight line and finish by applying slight pressure using a broom or roller.



3.6 Inside corner

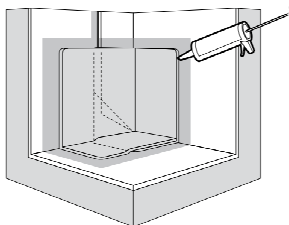
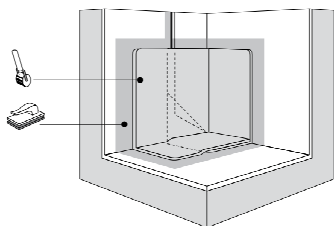
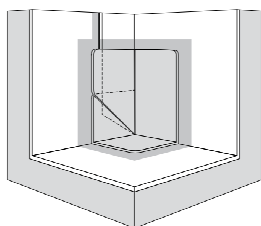
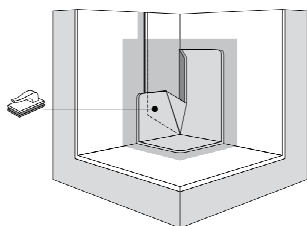
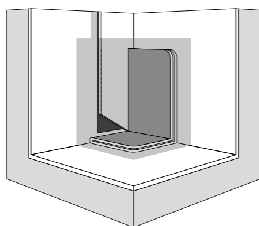
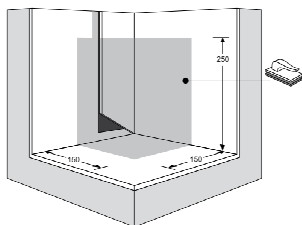
In case of upstands with limited height, the EPDM membrane can be folded into a pig-ear and adhered to the underlying membrane using QuickPrime Plus.

When flashing higher upstands, the EPDM is cut so that a vertical seam can be made. Pieces of QuickSeam FormFlash are then installed in the corner to cover the pinhole.

Installation instructions:

- Use 2 identical pieces of QuickSeam FormFlash of 229 mm x 300 mm (rounded corners) to cover the pinhole. In case the hole is larger than a pinhole one should install first a piece of SA Flashing.
- Apply QuickPrime Plus on the designated area on the PondGard membrane.
- Make sure the primer is dry prior to installation of the QuickSeam FormFlash piece.
- Position the first piece 10 mm out from the upstand and work tightly into the angle change.
- Apply QuickPrime Plus to the area to be covered by the pig-ear.
- Use the second piece to cover the pig-ear fold after reapplying primer to the designated area.
- Seal all exposed edges with Lap Sealant.



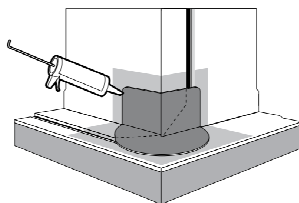
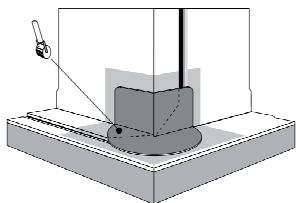
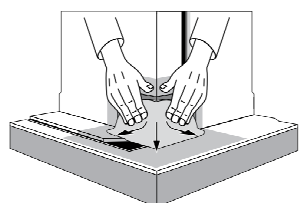
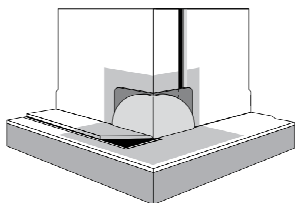
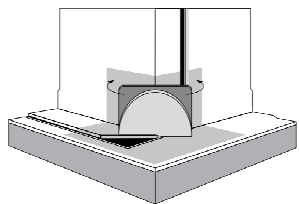
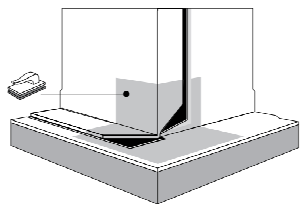


3.7 Outside corner

Installation instructions:

- All upstands need to be flashed using PondGard membrane and QuickSeam Splice Tape.
- The pinhole at the bottom of the outside corner will be waterproofed using a square piece of QuickSeam FormFlash of 229 mm wide that is cut circular at one end. Round off the cut corners on the opposite side.
- Apply QuickPrime Plus on the designated area on the PondGard membrane.
- Make sure the QuickPrime Plus is dry prior to installation of the QuickSeam FormFlash piece.
- Work the piece carefully, without overstretching.
- Roll properly the QuickSeam FormFlash piece with a small 50 mm wide silicone roller.
- Seal all exposed edges with Lap Sealant.





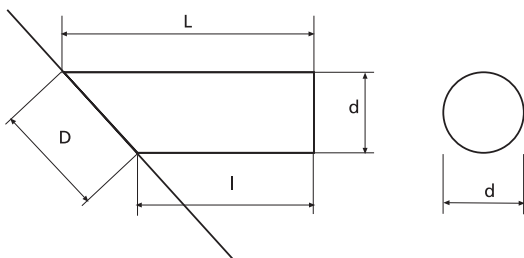
3.8 Pipe flashing

3.8.1. Installation PondGard membrane

- Make a circular cut-out in the PondGard panel, approx. 50% of the pipe diameter.
- Pull the membrane over the pipe.

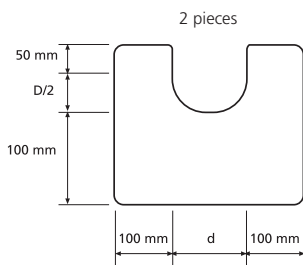
3.8.2. Installation base flashing

This will reinforce the area around the cut in the PondGard membrane. It is recommended to use QuickSeam SA Flashing whenever possible.



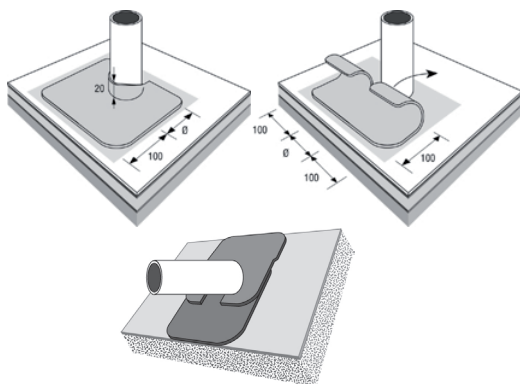
3.8.2.1 Base flashing using SA Flashing

- Cut a piece of SA Flashing that will overlap a minimum of 100mm in all directions onto the PondGard membrane and cut a hole 20mm smaller in size than the base of the pipe ($D - 20\text{mm}$ and $d - 20\text{mm}$).
- Apply QuickPrime Plus on the designated area on the PondGard membrane and the pipe.
- Allow the primer to flash off and apply the piece of SA Flashing.



3.8.2.2 Base flashing using QuickSeam FormFlash

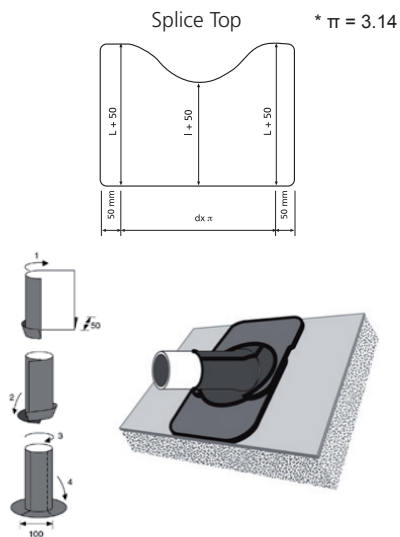
- Cut two identical pieces of QuickSeam FormFlash as per drawing hereafter.
- Apply QuickPrime Plus on the designated area on the PondGard membrane and the pipe.
- Allow the primer to flash off and apply the first piece.
- Apply primer to the overlapping area (100 mm) and repeat the procedure.



3.8.3. Installation pipe wrap

- The pipe wrap piece is made of QuickSeam FormFlash.
- Prime the designated area on the base flashing and the pipe.
- Allow the primer to flash off.
- Start installing the pipe wrap piece from the underside of the pipe.
- Do not forget to apply primer onto the overlap areas.
- Seal all exposed edges with Lap Sealant.

Dimensions:



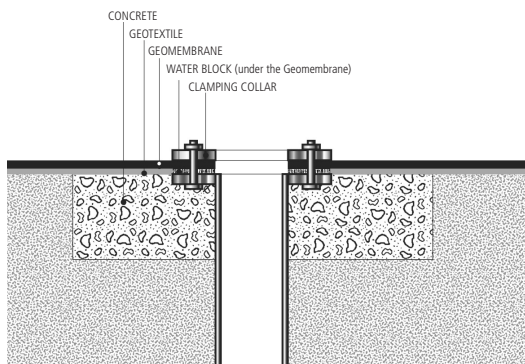
Tips:

- Mechanically secure the pipe with a clamping collar over a protective piece of PondGard.
- Whenever possible, install a clamping detail (see §3.9).



3.9 Penetrations

The preferred method is to use a clamping system for waterproofing lights, cables, water inlet/outlet...



Tips:

- Do not forget Water Block.



3.10 Curved walls

Firestone PondGard is a very flexible material that gives the opportunity to watertight very complex shapes.



Installation instructions:

- Horizontal and vertical surfaces are lined with separated pieces of PondGard.
- Cut the PondGard to size:
 - Horizontal: allow 100mm for seaming onto the wall
 - Vertical: allow ample material for anchoring
- Glue the PondGard membrane to the wall (see §3.5).
- Connect vertical and horizontal panels with QuickSeam tape installed on the vertical surface (see §3.4).
- Cut PondGard membrane to remove any folds and tension in the seam area. These cuts will be repaired with QuickSeam FormFlash.

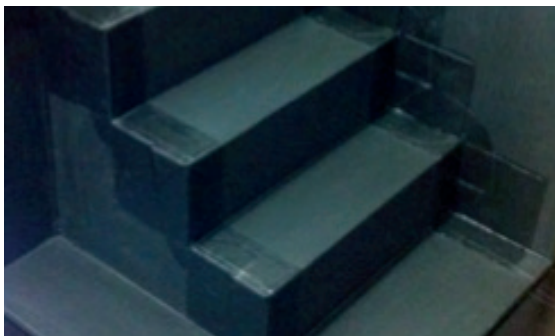


3.11 Stairs



Installation instructions:

- Steps and side walls are lined with separated pieces of PondGuard.
- Cut the PondGuard pieces to size:
 - Side walls: allow 100mm for seaming onto the steps
- Glue these PondGuard pieces to the steps and side walls (see §3.5).
- Connect the steps and sidewalls with QuickSeam tape installed onto the steps (see §3.4).
- Complete the stairs detail by finishing inside and outside corners using QuickSeam FormFlash (see §3.6 and 3.7).



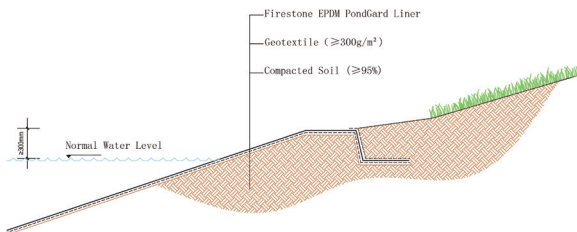
3.12 PondGard termination

Fill the pond with water before final anchoring of the PondGard membrane.

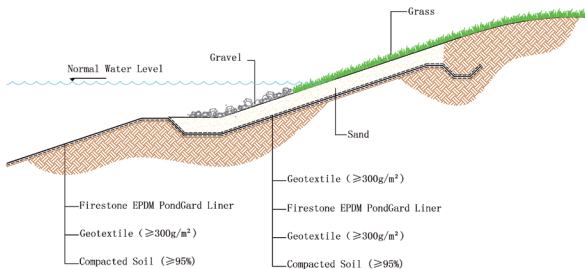
3.12.1. Anchor trenches

- Filling and compacting the trench must be performed without the PondGard being put under stress or being punctured.
- The dimensions of the trench depend on the expected stress (length between anchor points, distance between water level and anchor point, wind speed etc.)

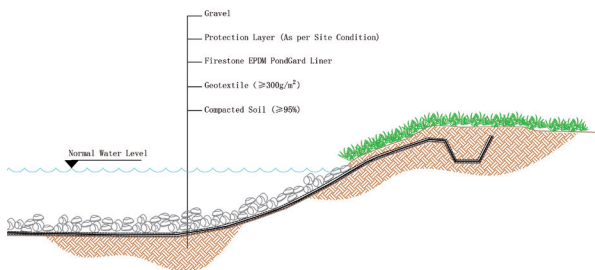
Top anchoring for exposed PondGard membrane



Top anchoring for partially covered PondGard membrane



Top anchoring for fully covered PondGard membrane



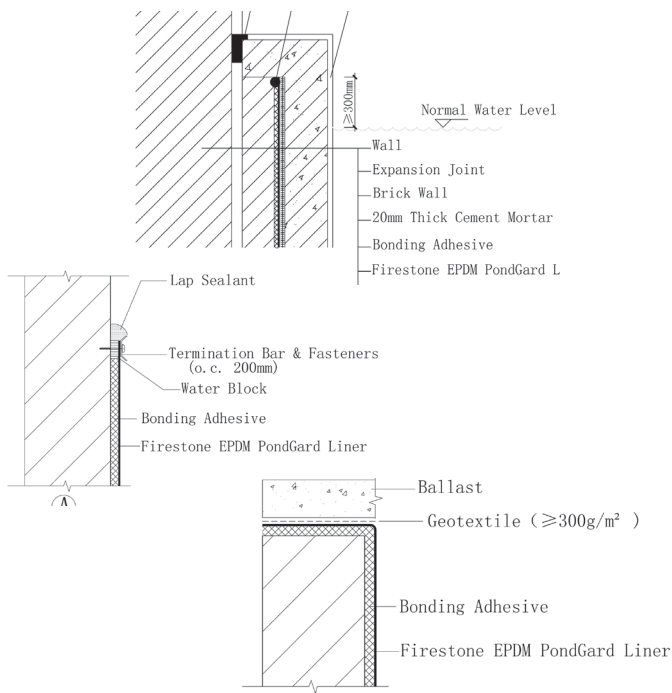
Top anchoring using flexible perimetral slats (type Ecolat)



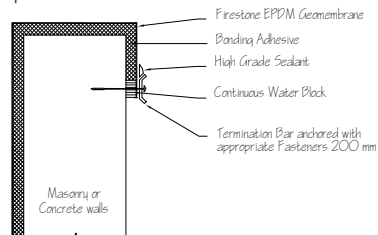
3.12.2 Wall termination

Installation instructions:

- In case of mechanical anchoring, apply Water Block between membrane and wall.
- Termination bar is:
 - fastened 300 mm o.c. max;
 - not bent around corners;
 - spaced 5 mm between sections; fastened max. 25 mm from each end.

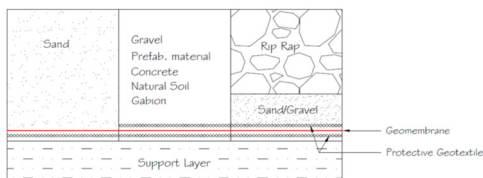


Outside pond wall termination



3.13 Membrane cover

The Firestone PondGard membrane can be covered with sand, gravel, concrete, rip rap... for aesthetical or protective reasons. The presence of a protective geotextile (min. 300 g/m²) is required as per the below drawing.



3.14 Membrane protection

Firestone PondGard membrane has good root resistance. Nevertheless, some plants can develop very strong roots (eg. Rhizomes) that could damage the liner and the seams.

If strong roots are expected inside or outside the pond, a root resistance barrier will be installed to protect the PondGard membrane, respectively above or below the membrane. The root resistance barrier can be a PE induced thermo welded polypropylene geotextile.

When installing the root resistance barrier folds will be avoided and special care will be given to the connection between different panels.



4 Inspection

The following inspection checklist has been developed to assist you in achieving a quality installation. Although it is not the intention to list all items, this checklist does include common repairs that are critical to the performance of the Firestone PondGard Lining system. While performing your inspection, Firestone recommends to note all items that require a correction on a sketch for future reference and to mark them on the PondGard using a white marker. All repairs need to be attended to as soon as possible.

4.1 General

- Assure that there are no leaks.
- Inspect and repair damage done by other trades.
- All debris must be removed from the pond.
- Clean up spilled adhesive, QuickPrime Plus or sealant.

4.2 Splicing with QuickSeam Splice Tape

- No presence of fishmouths or wrinkles in the seam.
- Tape is exposed between 5 and 15 mm.
- Minimum overlap of 100 mm.
- QuickPrime Plus is properly applied.
- Tape to tape overlap is minimum 25 mm.
- FormFlash has been applied over all tape to tape overlap edges.
- All T-joint and vertical joint patches have been installed.

4.3 Corners

- Pig-ear is properly closed.
- No bridging or fishmouths present.
- Corners are not popped open.
- FormFlash is not overstretched, punctured or cut.
- All exposed edges are sealed with Lap Sealant.



4.4 Pipe flashing

- There is no bridging of FormFlash at the bottom of the pipe.
- Both basic bottom pieces overlap 100 mm and have a minimum connection of 25 mm with the pipe.
- The wrap piece has a connection of 50 mm at the base.
- All exposed edges are sealed with Lap Sealant.

4.5 Penetrations

- No field seams under clamping ring.
- Water Block between PondGard and flange.
- Bolts are tightened properly.
- PondGard is cut properly at inside of pipe.

4.6 Wall termination

Mechanical anchoring

- Water Block behind bar between substrate and PondGard.
- Termination bar is:
 - fastened 300 mm o.c. max;
 - not bent around corners;
 - spaced 5 mm between sections; fastened max. 25 mm from each end.



5 Repairs

5.1 PondGard repair

Applicability

- Repair of cuts and punctures in the Firestone PondGard.
- Contamination of the PondGard membrane with hazardous products.

Repair Instructions

- Mark the damaged area with a white crayon for rubber, as soon as it is identified during the installation.
- Cuts and punctures in the PondGard membrane should be repaired with cured membrane or SA Flashing. The repair must extend a minimum of 75 mm beyond the perimeters of the damaged area in all directions.
- Round all corners of the repair piece.
- Use of Splice Tape as a sole repair material is not allowed.
- When repairing a PondGard membrane that has been in service for some time, it is necessary to prepare the surface to be spliced thoroughly prior to starting the splicing operation. First scrub the surface with a scrubbing brush and warm soapy water, then rinse with clean water and dry the surface with clean cotton cloths. Finally scrub the area with QuickPrime Plus. Additional cleaning may be required at heavily contaminated areas.
- PondGard membrane which has been in contact with hazardous chemical discharges such as fresh bitumen, petroleum products, greases, oils, animal fats, coal tar based or plastic roof cements need to be inspected for damage. Immediately remove all excess of the contamination materials and replace the damaged area with a new piece of PondGard membrane.



5.2 Repair of field splices

- Use scissors to cut the wrinkles away, laying them flat. Adhere the loose parts of the PondGard membrane with QuickPrime Plus and use small silicone rubber roller to roll the edges flat.
- Pull loose edges of the splice apart (if applicable) and reapply QuickPrime Plus and mate the two areas.
- Clean the area of the PondGard membrane to receive the strip in flashing extending past the width of the flashing to be applied. If the PondGard membrane has been exposed to such an extent that dirt has accumulated, remove contaminants by scrubbing with a scrub brush and soapy water prior to cleaning with Splice Wash.
- Apply primer to the affected area.
- Repair with a patch of QuickSeam FormFlash. Make sure the patch extends 75 mm past the field splice on both sides.
- Seal all exposed edges with Lap Sealant.



Firestone Building Products

Ikaroslaan 75 | 1930 Zaventem | Belgium
Tel +32(0)2 711 44 50 | Fax +32(0)2 721 27 18
info@fbpe.be | www.firestonebpe.com

Firestone



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For further information, please contact
your local Firestone PondGard Dealer: