



DMX Drain 15X™ Installation Manual

Version 1.0

Intro to DMX Drain 15X™

DMX Drain 15X™ is recommended for the following applications:

- Deep Foundation Walls
- Retaining Walls
- Caisson Walls
- Shallow Planters
- Structural Drainage for Tunnels

DMX Drain 15X™ compliments a liquid applied or sheet applied waterproofing product for a total systems approach to waterproofing.

DMX Drain 15X™ provides excellent protection of structural components during the concrete pour and diffuses hydrostatic pressure around any structure to promote positive drainage outlets.

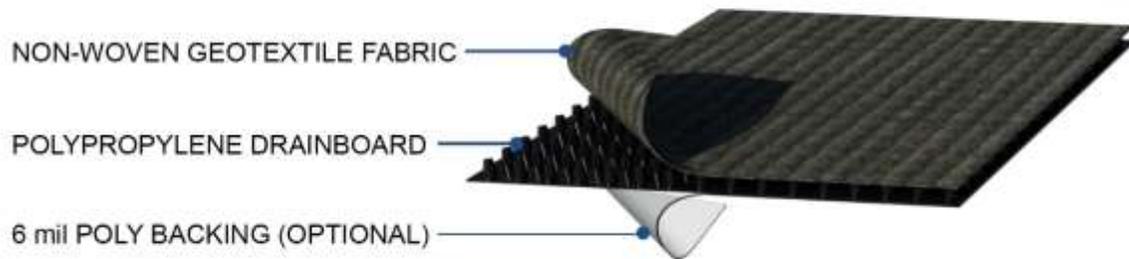


Figure 1 Sample Iso View of DMX Drain 15X/15XP



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1.0 Getting Started

This section applies to supplies, tools and preparation that will be required for a proper installation of DMX Drain 15X™.

1.1 Supplies Required

Rolls of DMX Drain 15X™	<ul style="list-style-type: none"> ❖ 1 roll equals 50ft. (15.25m) in length. ❖ Choose the height that matches the distance from the footing to the grade line. ❖ Available Dimensions: <ul style="list-style-type: none"> • 1.22m x 15.25m (4' x 50') • 1.83m x 15.25m (6' x 50')
DMX Washers™	<ul style="list-style-type: none"> ❖ For use with nails when fastening within the dimpled section of membrane. ❖ Approximately 150 washers required per roll of DMX Drain 15X™.
1 ¼" – 1 ½" Concrete Nails (for Block or Poured Concrete Foundations)	<ul style="list-style-type: none"> ❖ Use one nail or screw with a washer every 6 to 8 inches* (150 to 200 mm), when fastening DMX Drain 15X™ to the foundation wall. ❖ For Fastening DMX Washers™ ❖ For Fastening FlexTrim™
DMX FlexTrim™	<ul style="list-style-type: none"> ❖ The DMX FlexTrim™ prevents dirt from getting between the drainboard and non-woven geotextile fabric.

1.2 Recommended Tools

Hammer or Power Nail Gun	<ul style="list-style-type: none"> ❖ For poured or concrete block foundations. ❖ New or green concrete can be nailed by hand. Cured walls and block walls are more easily dealt with using a power nail gun.
Nail Gun Adapter	<ul style="list-style-type: none"> ❖ For holding the DMX Washers™ when you are using a power nail gun.
Utility Knife	<ul style="list-style-type: none"> ❖ For cutting the membrane.
Chalk Line	<ul style="list-style-type: none"> ❖ For marking the grade level on the foundation wall.

1.3 Preparing the Site for Traditional

- ❖ Make sure the foundation is clean at the grade level.
- ❖ Clear off the footing. This makes it easier to roll out the membrane smoothly. We recommend that you install the membrane **before** covering the drainage tile with stone, or at least keep the stone away from the footing until after the membrane is installed.
- ❖ For poured concrete foundations fill all tie holes left from form work with sealant.
- ❖ Ensure proper drainage at the footing in accordance with local Code Requirements.

Drainage is vital to the success of your project, and the optimum performance of DMX Drain 15X™. Any moisture that collects behind the membrane is designed to flow to the drainage tile at the footing. It is extremely important for the drainage tile to be functioning properly.

- ❖ DMX Drain 15X™ can be installed in any type of weather. However, for positive product installations, it is suggested for the membrane not to be installed in temperatures below 14°F (-10°C).
- ❖ When dewatering, follow local By-Laws/Rules about discharging rainwater on public or private property.

1.4 Preparing Site for Blindside Applications

- ❖ Make sure the area is clean around the bottom of the caisson wall.
- ❖ Clear around the base of the shoring and lagging. This makes it easier to roll out the membrane horizontally along the bottom of the wall. Install the membrane **before** covering the drainage tile with stone, or at least keep the stone away, until after the membrane is installed.
- ❖ Ensure proper drainage at the footing in accordance with local Code Requirements.

Drainage is vital to the success of your project, and the optimum performance of DMX Drain 15X™. Any moisture that collects behind the membrane is designed to flow to the drainage tile at the footing. It is extremely important for the drainage tile to be functioning properly.

- ❖ DMX Drain 15X™ can be installed in any type of weather. However, for positive product installations, it is suggested for the membrane not to be installed in temperatures below 14°F (-10°C).
- ❖ When dewatering, follow local By-Laws/Rules about discharging rainwater on public or private property.

2.0 DMX Drain 15X™ in Blindsided Assembly

This section applies to DMX Drain 15X™ installation in a blinding waterproofing assembly.

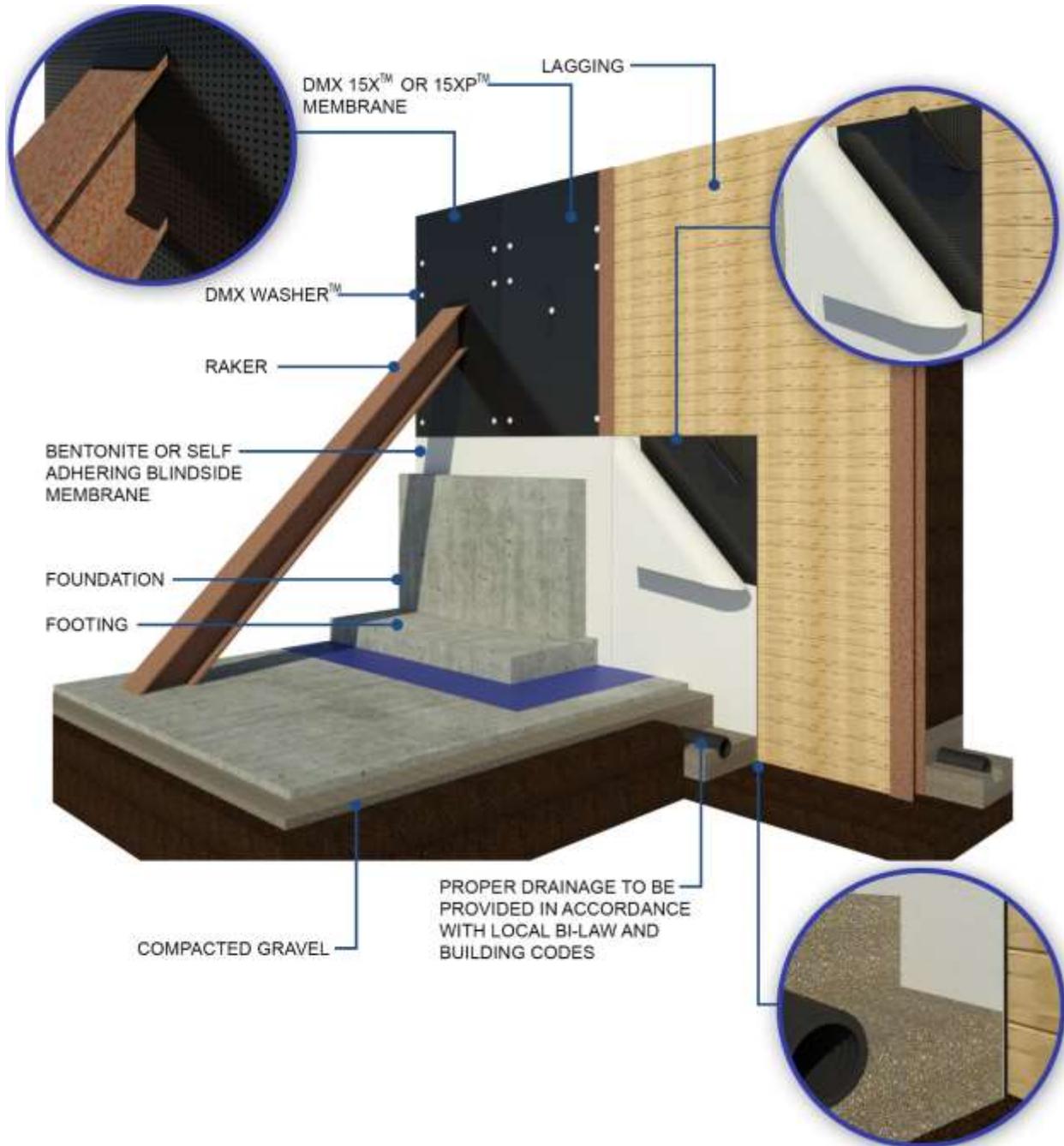


Figure 2 DMX Drain 15X in Blinding Waterproofing Assembly

2.1 Installing DMX Drain 15X™ in a Blindsight Assembly

When DMX Drain 15X is being installed in a blindsight waterproofing assembly these steps are to be followed unless project engineer specifies otherwise.

Step 1: Make sure area is clear of any stones or debris along the bottom of the lagging. This will help create an unobstructed surface to roll out DMX Drain 15X™ as well as ensure that nothing gets between the drainboard and the lagging.

Step 2: Line up the roll of DMX Drain 15X™ to the lagging so that when rolled out horizontally the non-woven geotextile fabric is mounted against the lagging.

Step 3: Roll out one (1) layer DMX Drain 15X™ horizontally along the bottom perimeter of the wall. While rolling the membrane out horizontally fasten it to the lagging using nails and DMX Washers™ (or steel washers).

(Note: Once the membrane has been applied horizontally to the bottom of the wall the remaining will be done with the membrane being installed vertically.)

Step 4: Position the roll of DMX Drain 15X™ above the membrane that was installed horizontally, but this time install it so that the roll will travel up the wall. While positioning the membrane have it drape over the top of the membrane that was installed below.

Step 5: As you roll out the membrane vertically fasten the membrane to the lagging with nails and DMX Washers™ (or steel washers). Figure 3 below is our recommendation for washer placement when installing DMX Drain 15X™ vertically.

Step 6: Once the membrane has been rolled out vertically and properly fastened, position another roll of DMX Drain 15X™ next to the one that was previously installed, but overlap the fastened membrane by at least 3 dimples. Once properly positioned install membrane vertically. Continue to do this until the entire wall has been covered.

Step 7: Once the membrane has been installed bentonite or a self-adhering blindsight membrane must be applied to the back of the drainboard or the optional 6 mil poly backing.

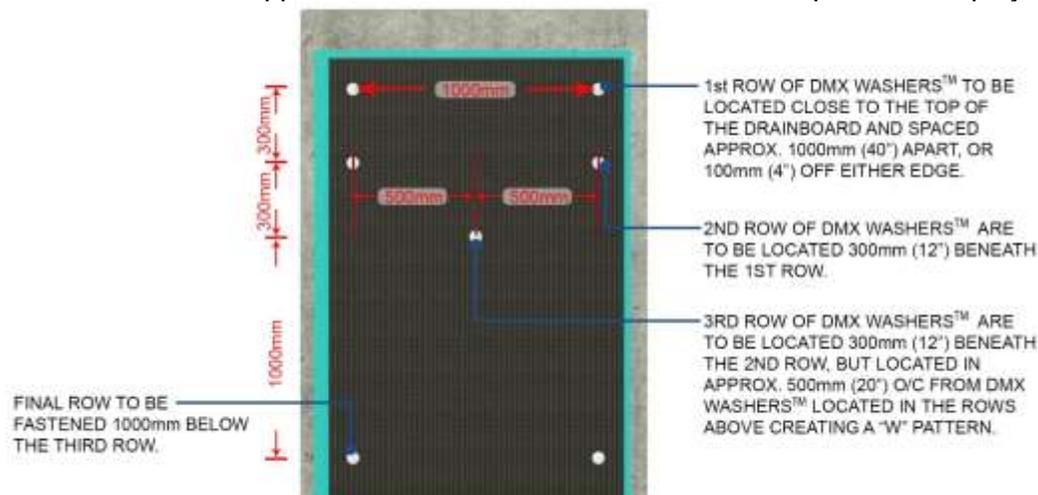


Figure 3 Vertical Washer Placement

3.0 DMX Drain 15X™ on Traditional Foundations

This section applies to DMX Drain 15X™ installation for traditional waterproofed foundations.

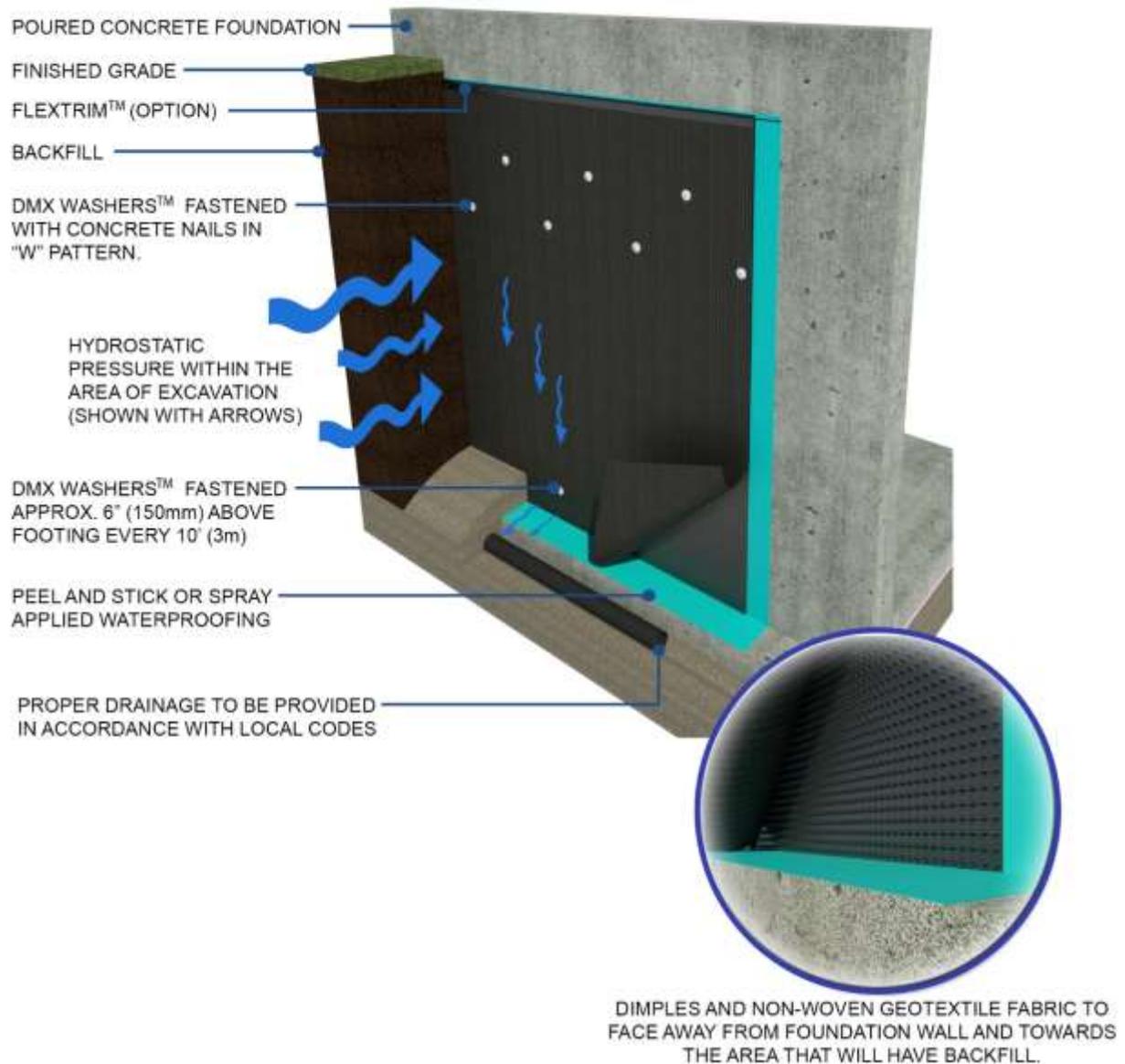


Figure 4 Traditional Foundation Application

3.1 Installing DMX Drain 15X™ Horizontally

1. Snap a chalk line one inch below grade level on the foundation wall.
2. Make sure the fabric side is placed away from the foundation wall facing towards the backfill. Roll out a small amount of DMX Drain 15X™ with the bottom of the roll lining up at the top of the footing. Keep the membrane as tight as possible while unrolling.
3. Secure the membrane to the foundation wall with DMX Washers™ and concrete nails. Please note, steel washers are not recommended as they may damage the membrane.

Install the DMX Washers™, in accordance with Figure 4, or you may install concrete nails and washers as requested by an engineer.

4. Insert a final row of DMX Washers™ approximately 6" (150mm) above the footing while spacing them 10 ft. apart. This final row of washers will prevent the crushed stone from getting under the membrane.

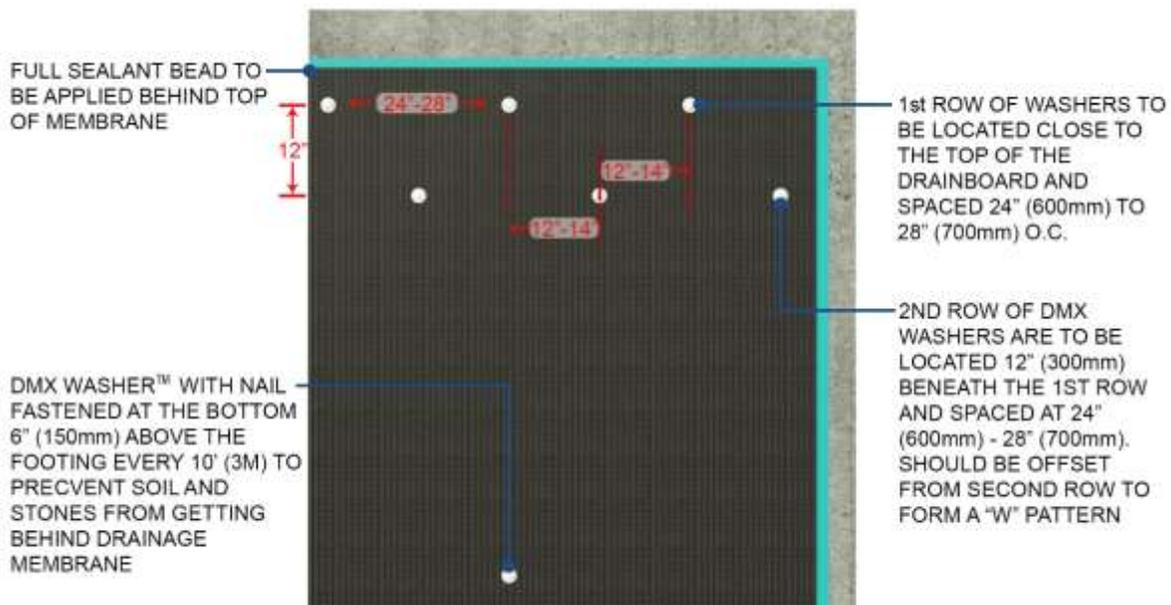


Figure 5 Washer Placement

3.2 Joining Rolls of DMX Drain 15X™

When joining two pieces of DMX Drain 15X™ overlap them by at least 6 inches (150mm). The non-woven geotextile fabric may be peeled back so that the dimples may be meshed. Then fold the non-woven fabric back over the joining drainboard and apply adhesive to adhere the non-woven fabric in place.

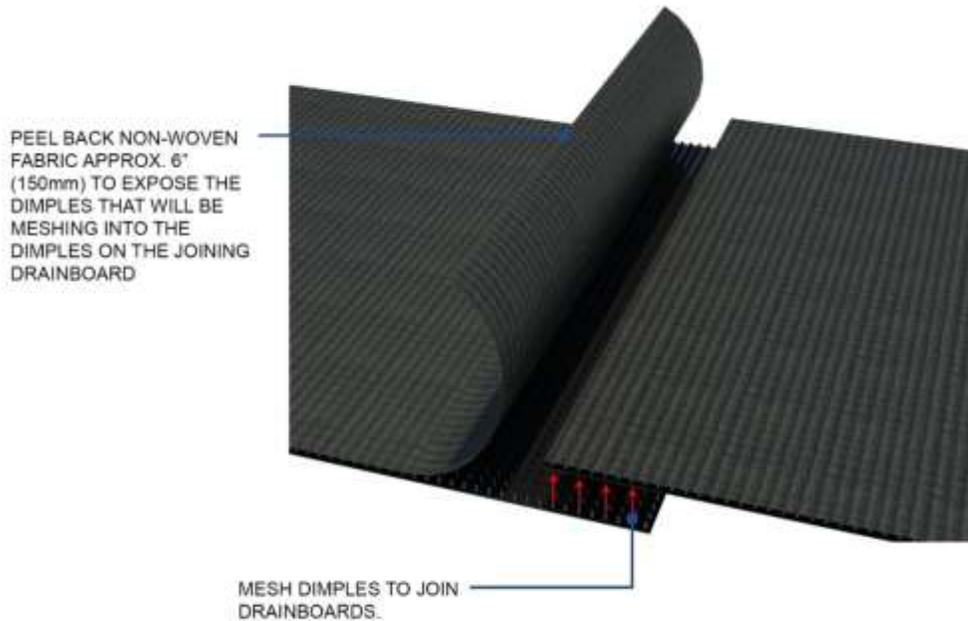


Figure 6 Joining Step 1

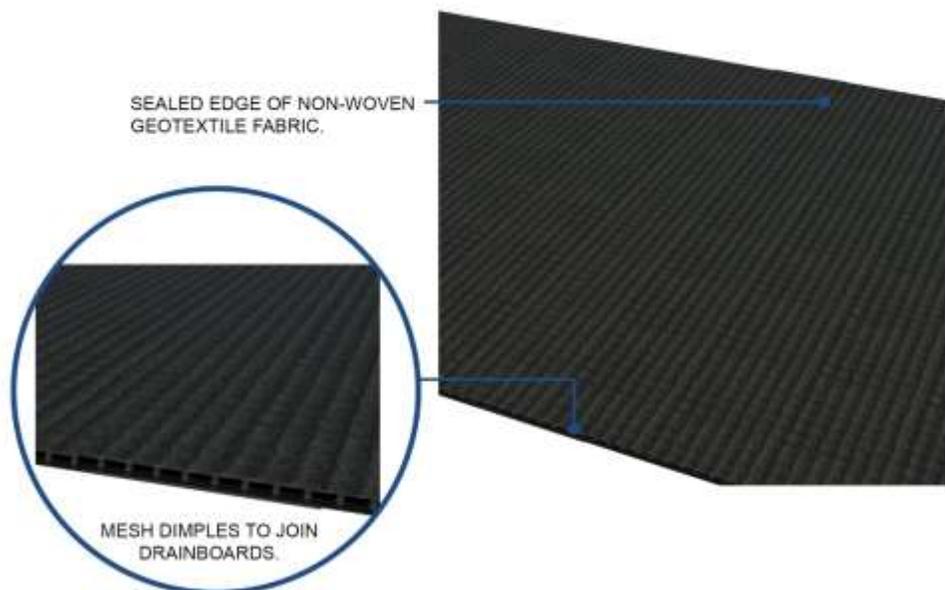


Figure 7 Joining Step 2

3.3 Around Foundation Openings

DMX Drain 15X™ is to be applied around areas that have been cut out of the foundation, for windows or other openings. The membrane is to be cut 6" (150mm) away from the perimeter of the cutout in the foundation. Where the membrane has been cut a bead of sealant is to be applied with DMX FlexTrim™ laid on top and fastened to the foundation using concrete nails. (Refer to Figure 7)

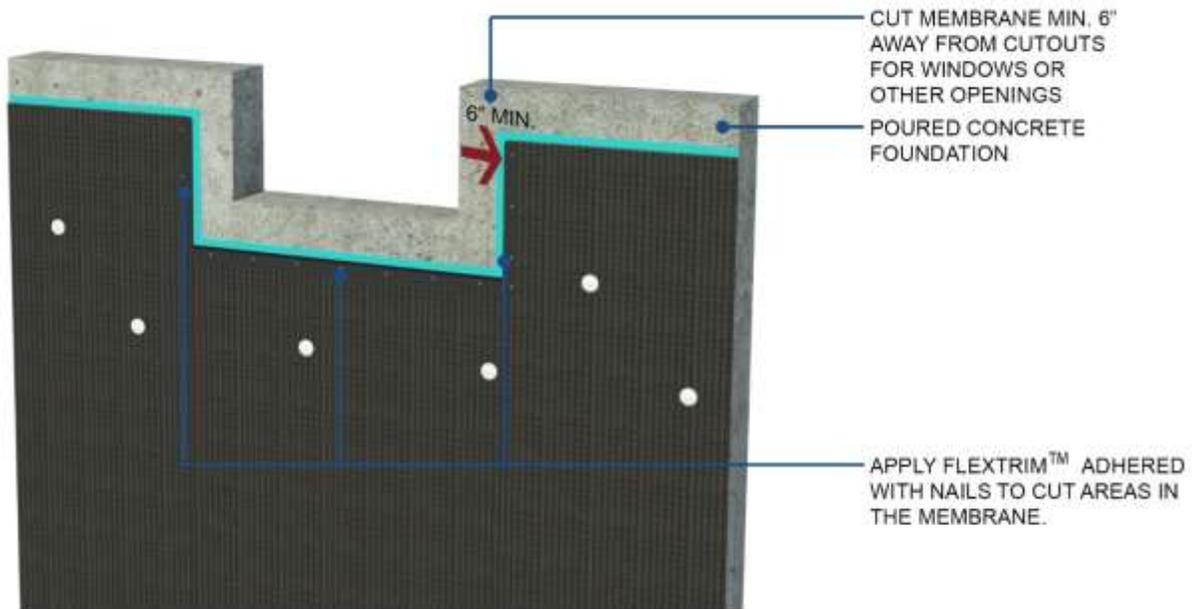


Figure 8 Around Openings in Foundation

3.4 Change in Grade

When there is a change in grade height or sloped areas along the foundation the membrane will be required to be cut to ensure that the DMX Drain 15X™ will be under the final grade level once the project is complete. The membrane should be cut parallel to the slope in grade level, while being under the final grade level by 1" (25mm). In these situations, the DMX FlexTrim™ or a steel termination bar is to be applied to the cut areas and fastened with concrete nails.

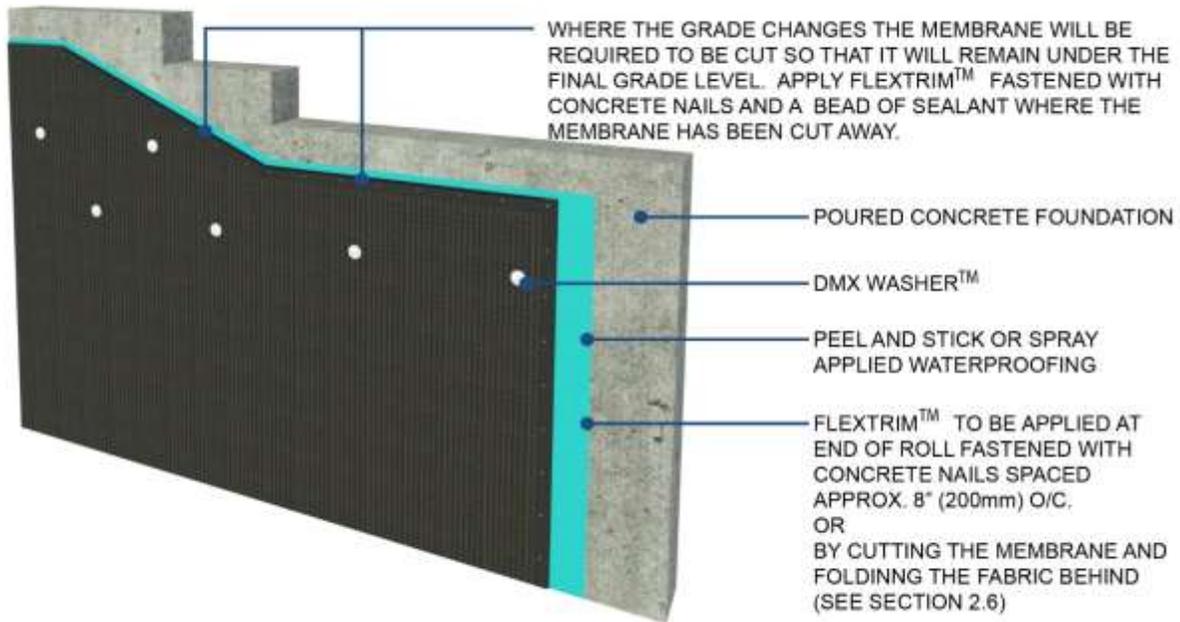


Figure 9 Change In Grade

3.5 Sealing End of Roll with FlexTrim™

When coming to the end of the roll, seal the end by using sealant and DMX FlexTrim™. Make sure DMX Washers™ have been used and installed correctly along the flat tab. Then caulk a bead of sealant along the end of the membrane where the roll ends. Once the bead of sealant has been applied fasten the DMX FlexTrim™ along the edge of the membrane and over the sealant to ensure the edge is sealed. DMX FlexTrim™ is to be fastened to the foundation wall with concrete nails spaced at approximately 8" on center by using a nail gun or hammer. (Refer to Figure 9)

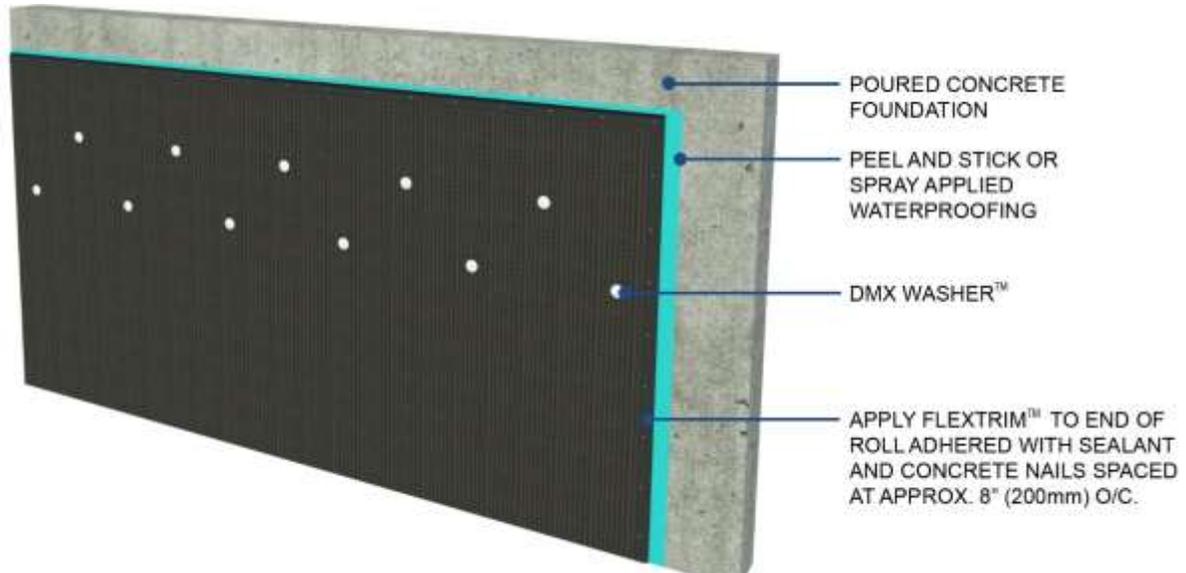


Figure 10 Sealing End of Roll with Flextrim

3.6 Sealing End of Roll Without FlexTrim™

Follow these steps when sealing the end of the roll of DMX Drain 15X™ without DMX FlexTrim™:

Step 1: Peel back non-woven geotextile fabric approximately 3" (75mm).

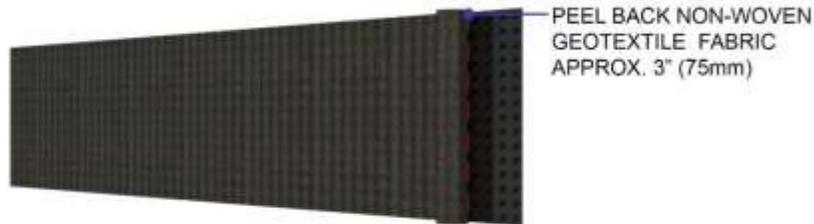


Figure 11 Sealing End of Roll without FlexTrim Step 1

Step 2: Cut only the polypropylene drainboard, leaving an excess of non-woven geotextile fabric to be folded over.



Figure 12 Sealing End of Roll without FlexTrim Step 2

Step 3: Wrap the excess non-woven geotextile fabric around the drainboard and use adhesive to adhere to the back of the drainboard.

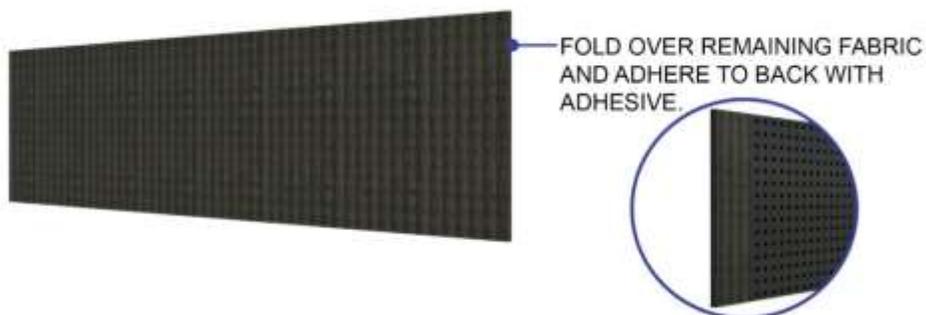


Figure 13 Sealing End of Roll without FlexTrim Step 3

4.0 DMX Drain 15X™ in Other Assembly Details

This section applies to the different ways that DMX Drain 15X™ may be used. This section includes details for:

- Shallow Planters
- Underground Structures and Tunnels
- Retaining Walls
- End Outlet Drain Connector
- Side Outlet Drain Connector

The following details are our recommendation but may not be an actual reflection of what is occurring on site as engineer recommendations may differ depending on the site's conditions.

Shallow Planters – Planters that will not exceed the membranes compressive strength capacity may use DMX Drain 15X™ to help provide proper drainage and protection for the planters' concrete structure.

Underground Structures and Tunnels – DMX Drain 15X™ can be used within the envelope's assembly of underground structures and tunnels to provide the proper drainage that will be required to meet local bi-laws and codes. (Example: Mining or Transit Tunnels)

Retaining Walls – Retaining walls can endure increased earth stresses from undrained backfill, which could damage the structures integrity. DMX Drain 15X™ can be used within the assembly of a retaining wall to help provide proper backfill drainage required.

4.1 Shallow Planters

DMX Drain 15X™ may be used for shallow planters that will require a drainage layer to protect the integrity of the planters' structure. Before installing DMX Drain 15X™ in the planter, the planter must have a waterproofing application applied to its interior.

Once waterproofing has been applied roll out roll of DMX Drain 15X™ horizontally along the bottom of the planter with the fabric side facing where the soil will be.

After the membrane has been applied horizontally you can start to lay the membrane along the vertical surfaces of the planter with the membrane draping over the membrane along the bottom. Make sure the membrane is being installed along the vertical surfaces of the planter with the fabric side facing inward towards the soil to ensure proper installation.

Seal vertical membrane edges by folding the fabric around the membrane and adhering it to the back of the drain board.

If there is a drain located within the planter be sure to slope the drainboard by at least 2% towards the drainage hole. When you encounter a drain hole, cut the membrane tightly around the hole so that the drain fitting fits tightly. Seal under the drain cap to the fabric of the drainboard the drain system is penetrating, this will help prevent any soil from intruding into the drain core.

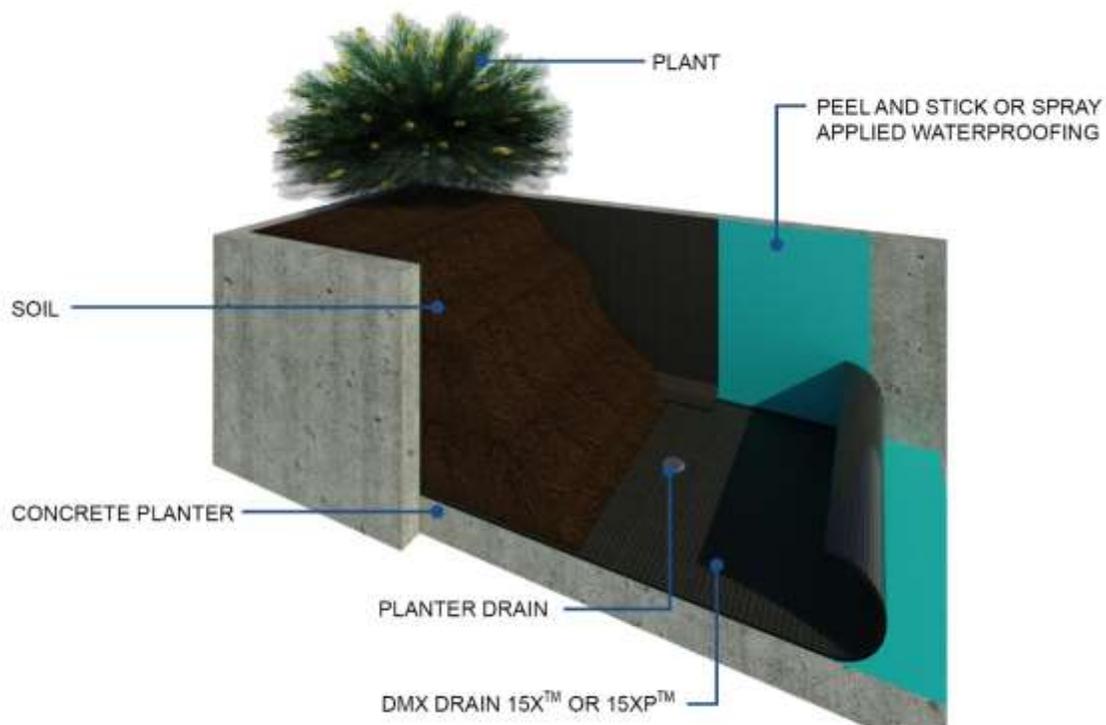


Figure 14 Shallow Planters Detail

4.2 Underground Structures and Tunnels

The following details represent how DMX Drain 15X™ is to be applied to underground structures and tunnels.

4.2.1 Underground Structure:

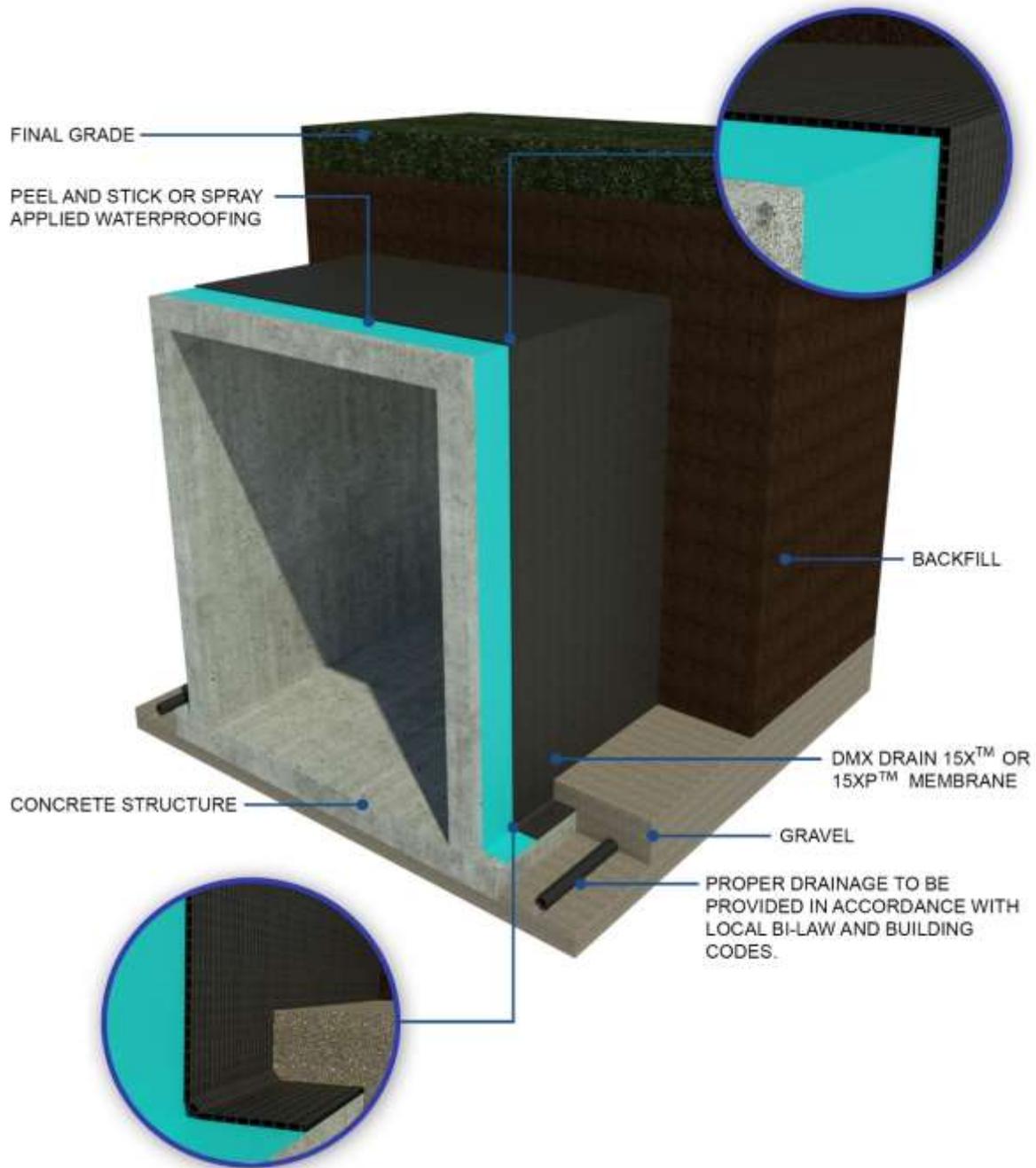


Figure 15 Underground Structure Detail

4.2.2 Underground Tunnel Open Waterproofing System:

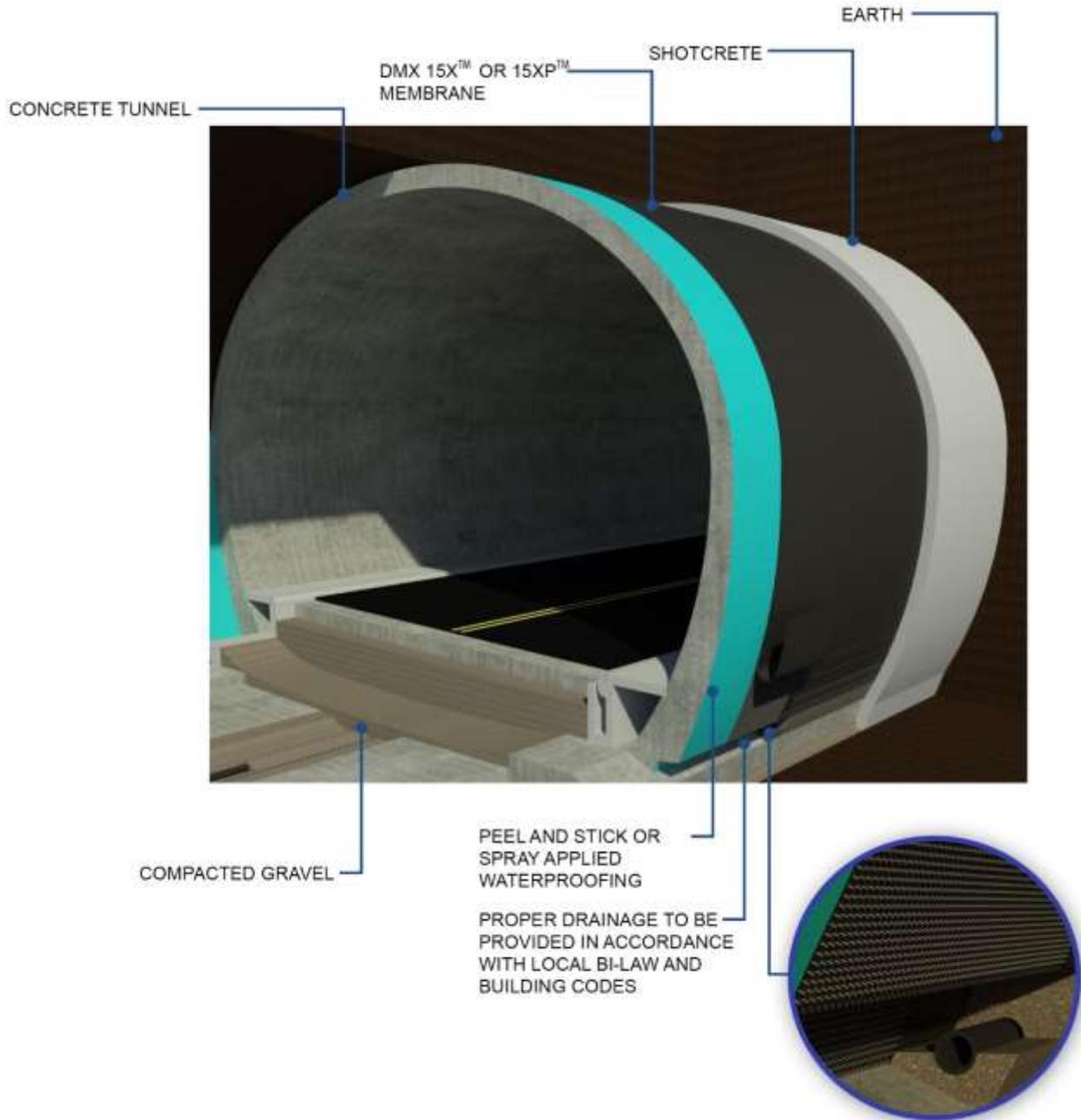


Figure 16 Underground Tunnel Open Waterproofing System Detail

4.3 Retaining Walls

The DMX Drain 15X™ should be used within the retaining wall system to provide relieve of earth stresses caused from undrained backfill and protect its integrity.

DMX Drain 15X™ may be installed on the retaining wall horizontally or vertically.

When installing around weeping holes the polypropylene drainboard is to be cut closely to the perimeter of the hole, but do not cut the fabric that will be facing the backfill.

After the cut has been made adhere a galvanized or aluminum plate that extends 3 dimples in each direction around the cut hole. This will provide support for the fabric so it won't be damaged from any backfill.

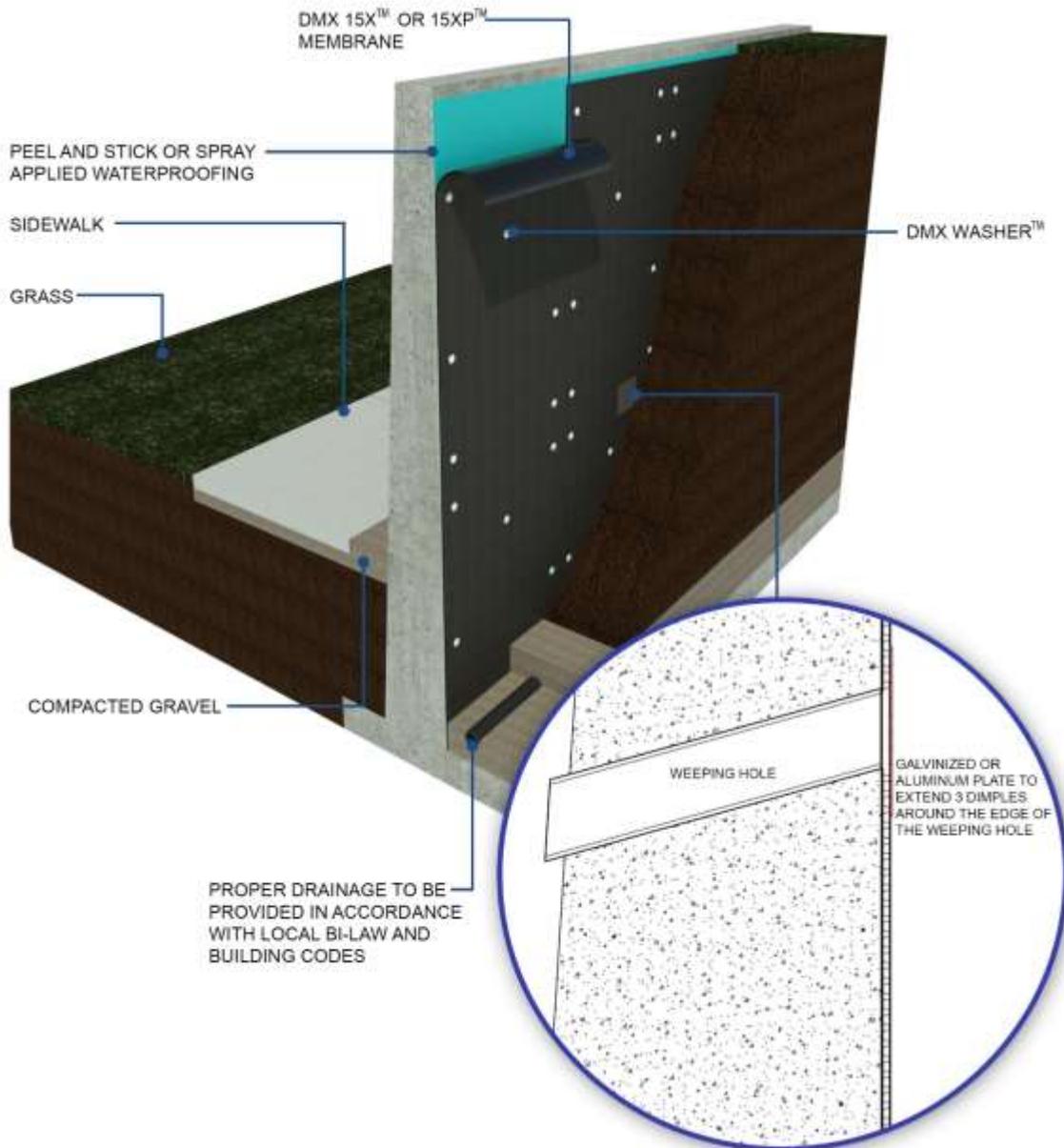


Figure 17 Retaining Wall Detail

5.0 General

This section applies to general procedures that should be undertaken before, during and after the membrane has been installed.

5.1 Clean up & Inspection

When the job has been completed, inspect the foundation and ensure all materials were installed properly. If there are any excess materials or tools left around the foundation remove them before backfilling.

5.2 Repairs

If DMX Drain 15X™ gets damaged or torn, use an extra piece of membrane that is at least 12 inches (300mm) larger than the tear. Mesh the dimples and apply a full bead of sealant around the perimeter of where the extra piece of membrane will be placed. Then fasten the patch in place with DMX FlexTrim™ and concrete nails.

5.3 Backfilling

During backfilling follow the steps below along with local code practices.

Step 1: Cover the drainage system required by Code with approved granular material using good engineering and construction practices.

Step 2: Carefully backfill the balance of excavated area, by following proper construction practices. **(DO NOT DAMAGE DMX 15X MEMBRANE)**

Step 3: Make sure the finished grade is just slightly above the top of DMX Drain 15X™, but not greater than 6".

5.4 Health and Safety

When installing DMX Drain 15X™ we recommend that the following safety equipment be worn during the installation process:

- ❖ Hard Hat
- ❖ Safety Boots
- ❖ Gloves
- ❖ Safety Glasses

5.5 Limitations

We suggest for productive installations that DMX Drain 15X™ should not be installed in temperatures below 14°F (-10°C).

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