

# AQUADAM<sup>®</sup> COFFERDAM INSTALLATION GUIDE

Version 1 – 2024

AquaDam<sup>®</sup> Cofferdams play a critical role by blocking or diverting water from your site, allowing the work area to be dewatered.





# ABOUT LAYFIELD

Over the past 45 years, Layfield has created innovative and sustainable geosynthetic solutions to protect our communities and environment. Since 1978 we have been one of the pioneering geomembrane manufacturers, fabricators, and installers in North America, making time one of the key ingredients to our success!

With a strong company culture rooted in family values, commitment, and high ethical standards, we are building a better tomorrow. We've been around for a while – and we keep getting stronger.

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# BEFORE WE BEGIN

## Safety

There are numerous situations where people are at work with or near water, the installation of an AquaDam® is no different and so are the inherent risks. These risks can include minor scrapes, to serious injury and/or death. Layfield highly recommends that prior to beginning the installation of an AquaDam®, an assessment of the potential risks is made, and appropriate steps are taken to mitigate these risks.

There are a number of hazards that need to be considered when working on or near water and installing an AquaDam®. These include both safety and potential health issues.

They may include, but are not limited to:

- the risk of falling into water and drowning
- contact with contaminated water
- manual handling and lifting hazards
- electrical hazards
- slips, trips and falls
- exposure to chemicals
- the effect of extreme weather
- impact with submerged objects
- floating or submerged debris, including ice
- hypothermia
- sunburn and heat stress

Please take the time to assess your particular situation and think about the risks/hazards that may exist. Look for ways to mitigate those risks prior to beginning any work when installing an AquaDam®. Work should always be performed under the direction of a competent person who has assessed and understands all risks associated with the application.



# LET'S GET STARTED

These are your basic installation requirements to begin with. We recommend you have the following equipment and resources on hand.

- ▶ **Water Source**  
Utilize the locally available, on-site water source to fill the AquaDam®.
- ▶ **Hose Length**  
Enough suction hose to reach water from the pump location, and enough discharge (filling) hose to reach from the pump to AquaDam®.
- ▶ Roll of duct tape, utility knives, and scissors.
- ▶ Four to five workers are required to install the AquaDam's.
- ▶ Two shovels.
- ▶ Two 4" lay flat hoses. Two pumps to adjust flow separately in each hose.
- ▶ Three 4" trash pumps for filling the AquaDam(s) is recommended. 6" diesel pumps with low throttle capacity are acceptable for larger sized AquaDams.
- ▶ A few meter bags for shoring up minor leaks.



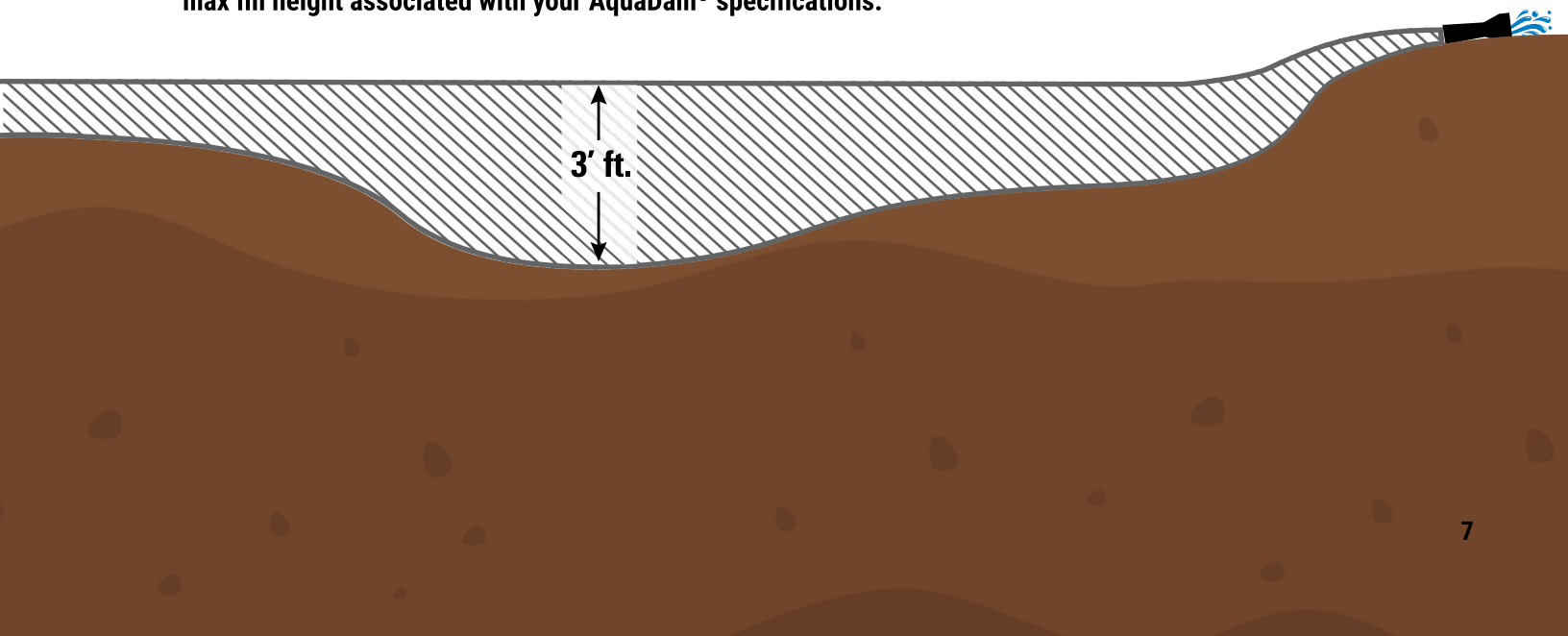
# DETERMINING HEIGHT & ELEVATION

When the AquaDam® is at it's rated height at the lowest point along its path, it is full. **DO NOT** try to overfill. The AquaDam® should always be filled and maintained to their recommended height. See chart below for recommended filling heights.

AquaDam® Height		Inflated Width		Water Depth (Dry Work Site)		Water Depth (Wet Work Site)		Weight (lbs)
Feet	Meter	Feet	Meter	Feet	Meter	Feet	Meter	
3	0.9	7	2.1	2.3	0.7	2.6	0.8	2.5 lbs/ft
4	1.2	10	3.0	3.0	0.9	3.5	1.0	4.25 lbs/ft
6	1.8	20	6.0	4.0	1.2	5.3	1.6	13 lbs/ft
8	2.44	17	5.18	6.0	1.83	7	2.13	13 lbs/ft
10	3.0	21	6.4	7.33	2.23	8.75	2.67	25 lbs/ft

*\*Custom Sizes Are Available*

**Be sure to survey and take into consideration any dips in elevation and try to maintain the max fill height associated with your AquaDam® specifications.**



# TRANSPORTING & SHIPPING TO SITE

The AquaDam® will come out of production wrapped on a solid wood core, with two slings already wrapped around for unloading and moving the AquaDam® around the site. The slings must be used for movement rather than trying to slip the forks in underneath and lift, as that will potentially damage the product. 3' AquaDam® can be transported in the back of pick-up trucks; however, a trailer will be required for larger sizes.

Unpack and remove any wrap or rope that may be securing the AquaDam® with scissors, CAREFULLY. Be sure not to snag or puncture the polyethylene as this would result in leaks. If the structure is to be moved by heavy equipment, secure straps around the structure then connect the straps to the heavy equipment for transportation. Use extreme caution during the transportation and installation of the AquaDam® structure. While the outer geotextile is very tough, dragging the AquaDam® during transportation, or while full or partially full, may cause damage to the geotextile and possibly the inner tube.







# CHOOSING YOUR STARTING POINT

Survey the expected installation path of the AquaDam®. Look for low and high spots. Try to avoid low spots keeping to the level high ground.

The AquaDam® will arrive on-site rolled up like a carpet. Place the roll at the intended elevated starting point. This can be created by using the elevated shoreline or by creating a v-notch with meter bags to create the starting point elevation to the edge of the waterline.



Note any slopes that run perpendicular to the installation path of the AquaDam®. These slopes may cause the AquaDam® to roll.

Meter bags may need to be deployed in a wall-like fashion in moving water where flows could be of concern. The meter bags will help shore the AquaDam® in these moving waters. Meter bags can also be deployed as a flow break to help direct water toward diversion pumps.



- ▶ Remove any obstructions from the path of the AquaDam®.
- ▶ Immovable objects should be padded to minimize damage.
- ▶ Cross-slopes should be avoided if possible, but braced against if unavoidable.
- ▶ Be aware of low spots, and stay on high, level ground.

# FILLING THE AQUADAM®

- ▶ Lift the AquaDam® by core/lifting straps to unwrap poly tubing fill ports (2-3 wraps typical). Fill ports to extend backward beyond the geotextile sheathing of the AquaDam®.
- ▶ Install fill hoses into the poly tubing of the AquaDam® that is extended over the elevated starting point.
- ▶ Ensure the hose is installed far enough into the fill tubes to avoid the hose from falling out during filling. Tape the poly tubing tight to the fill hoses to ensure the hoses don't come out of the AquaDam® during the filling process due to the pressure.
- ▶ Add water into both inner tubes at the same time.
- ▶ Push air pockets out so it may be expelled through the fill tubes.
- ▶ Pumps at medium/low throttle are recommended to regulate filling. AquaDam® should maintain gradual forward unspooling as it fills to equalize with surrounding water conditions. Do not allow the dam to fill with water too quickly in a sedentary position.

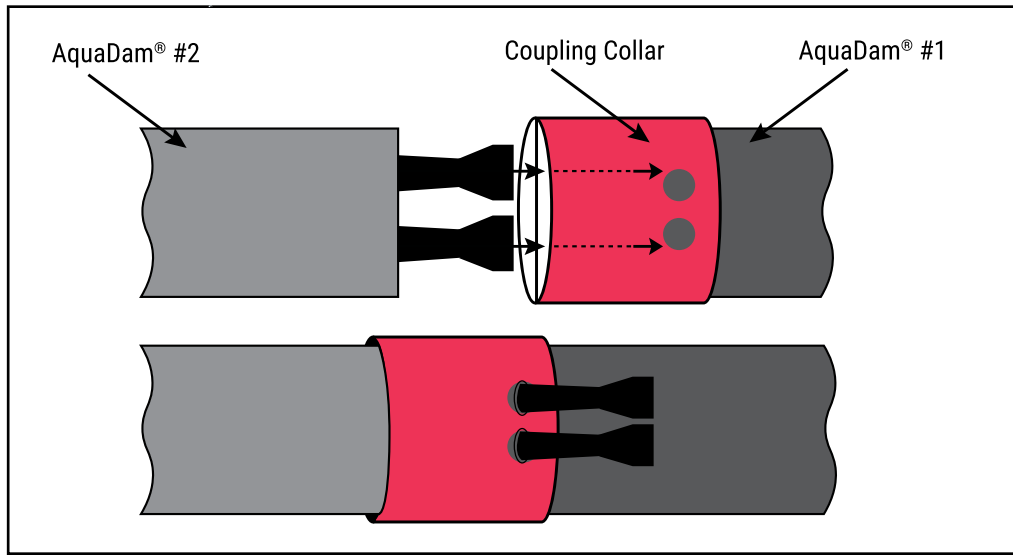
High throttle is typically reserved for the final filling to maximize dam height once the AquaDam® has been secured on the ending shoreline.

- ▶ Once filled, wrap duct tape or tie rope tightly around the fill tubes to restrict the fill tube to a manageable size.
- ▶ Fold taped fill tubes back onto each other and tape together in an upright position.
- ▶ The AquaDam® should be observed for any sideways movement. Wooden boards or other means of shoring should be used to support the AquaDam® against rolling due to cross slopes present on site.

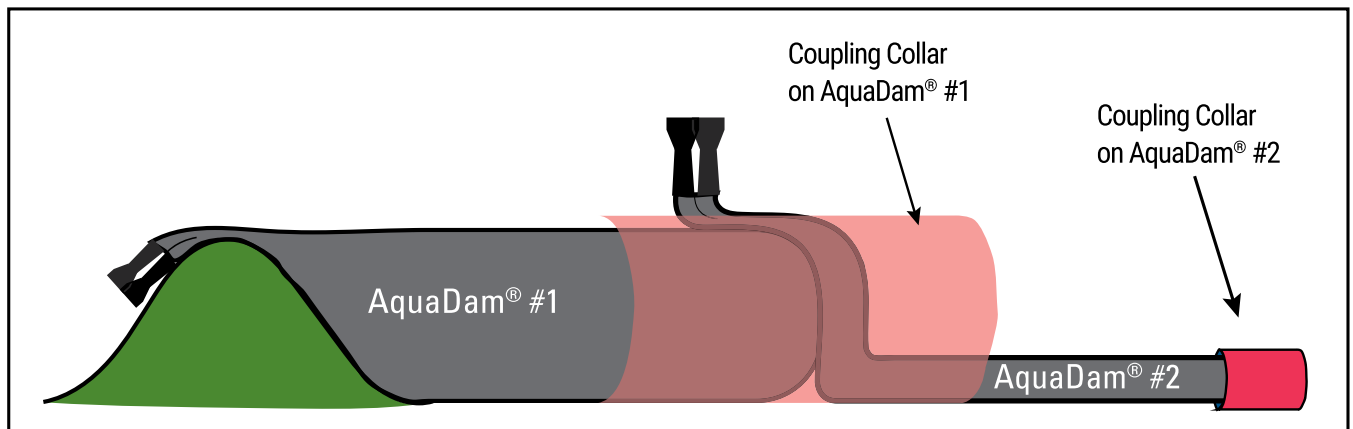


# CONNECTING ONE AQUADAM® TO ANOTHER

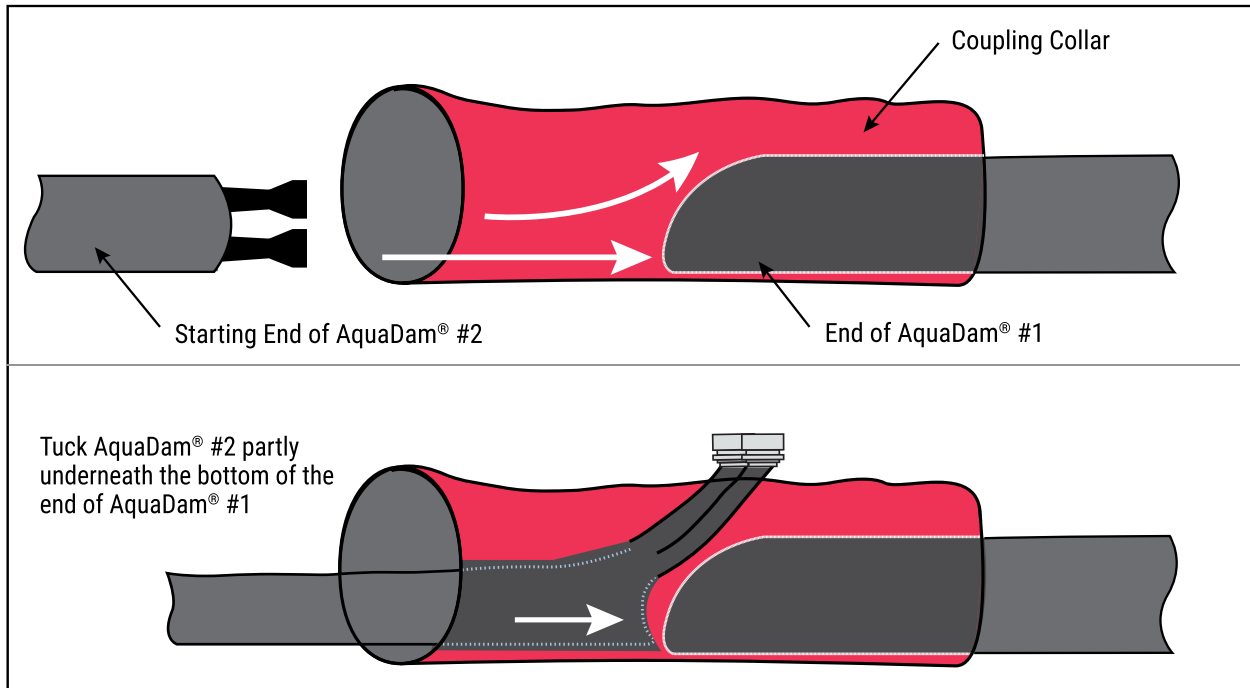
Here's how you connect one AquaDam® to another.



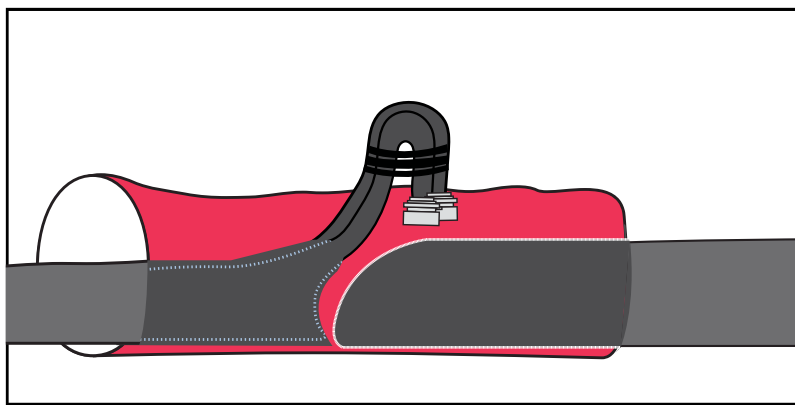
- ▶ Slide end of AquaDam® #2 into the collar of AquaDam® #1.
- ▶ Ensure AquaDam® #2's geotextile skin is extended up to the top of the filled height of AquaDam® #1.
- ▶ Keep flat and even within the collar.
- ▶ Begin filling AquaDam® #2.



- ▶ The open end of the AquaDam® #2 should be totally enclosed by the coupling collar. Pull the end of the outer skin of AquaDam® #2 on top of the outer skin of the water filled AquaDam® #1 within the connection collar.



- ▶ Straighten out any wrinkles or twists in the middle of the collar.
- ▶ Slide layflat hose into poly tubing after inserting through connection collar.
- ▶ When filling is completed, strap/tape the poly tubing in an upright position.



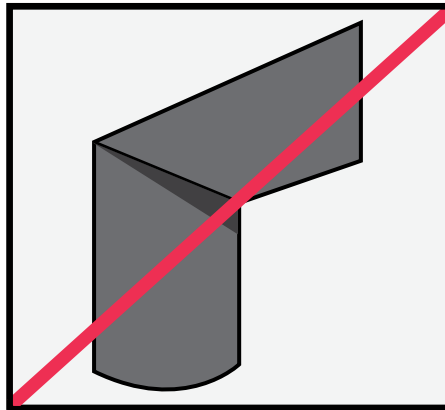
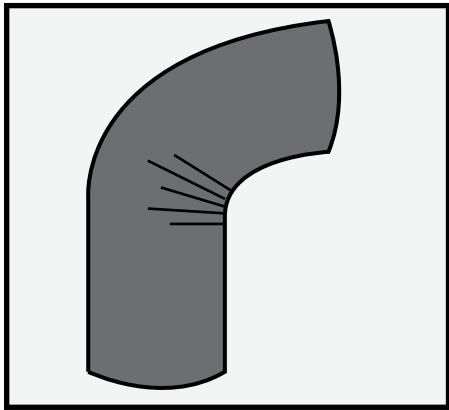
**CONNECTION IS DONE: YOU MAY COMMENCE FILLING THE AQUADAM®**



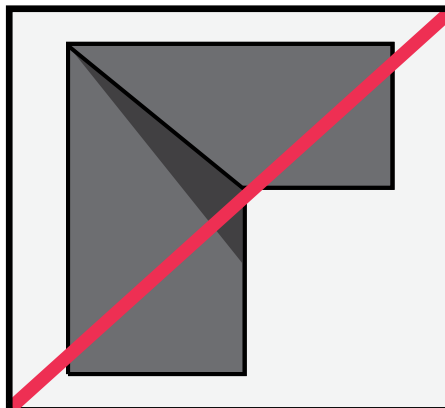
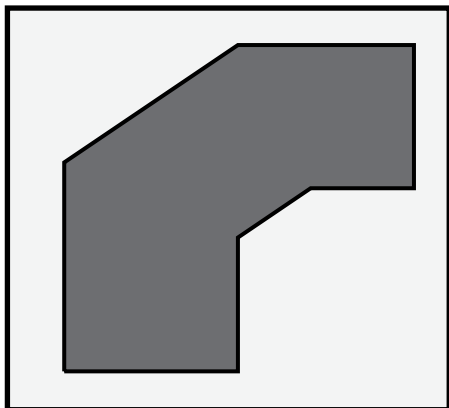
# HANDLING AND TURNING THE AQUADAM®

During the deployment or clean up of the AquaDam®, it's imperative to learn how to properly handle and turn the tubes in order to allow even filling/drainage of the AquaDam®.

- ▶ The AquaDam® can be unrolled and placed in its location prior to filling (applications with negligible flows), or it can be unrolled while filling.
- ▶ When turning the AquaDam®, ensure a wrinkle is pulled back from the inside of the turn.



- ▶ It is most effective to create two 45° degree turns, rather than a 90° turn (where possible) to eliminate large wrinkles.
- ▶ While filling, water flow to the inside tube may need to be reduced relative to the outside tube to help encourage proper turning.



- ▶ Where possible, keep connection points away from sharper turns.
- ▶ When pulling or handling the rolled out/unfilled AquaDam®, ensure you have a hold of the exterior skin layer, as well as the internal tubing.
- ▶ Turn the AquaDam® manually with ground workers for small AquaDams. Larger AquaDams will require accessible equipment support (excavator) to assist with turning the AquaDam® via tie-off ropes.

# MAINTAINING THE INSTALLED AQUADAM®

Your AquaDam® is durable but once the AquaDam® is in place you need to periodically inspect it to make sure it is operating at optimum efficiency.

Each installed section should be monitored once a day for leaks or signs of wear.

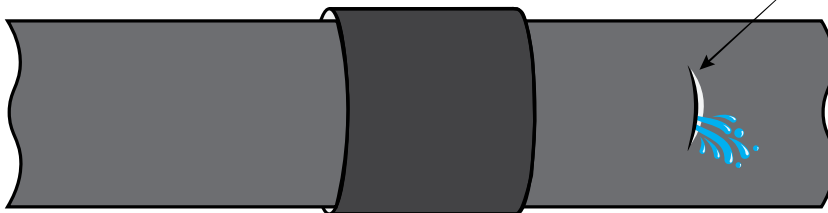
Gutters discharging inside of the AquaDam's protected area need other means to deal with the water.



## Dealing with a small leak

The easiest way to deal with a leak without removing the AquaDam® is to:

- ▶ Patch the leak with AquaDam® repair tape.  
*\*one free repair kit is provided w/the purchase of each dam*
- ▶ Periodically add water to replace any lost through damage.
- ▶ Monitor the area to ensure it does not rupture.



## Water Levels

- ▶ Monitor water levels and place additional bracing behind the AquaDam® in case of increase.
- ▶ If water levels approach the top of the AquaDam®, appropriate measures must be taken to make sure a failure due to over topping does not occur.

# WARRANTY

Layfield warrants to Buyer of the Products manufactured or supplied by Layfield that the Products will be free from defects in material and workmanship under normal and proper usage for a period of one (1) year from the date of shipment of the Products from Layfield. The foregoing warranty will not cover and Layfield makes no warranties with respect to:

- (a) Any Products subject to abuse, misuse, misapplication, neglect, alteration or accident, to improper and incorrect installation or maintenance, or to abnormal conditions of use, temperature, moisture, dirt, or corrosive material; or
- (b) Materials, parts, goods or other components that are manufactured by someone other than Layfield.

The foregoing warranty is exclusive and in lieu of all other warranties, whether expressed or implied, or otherwise arising by operation of law, trade, usage or course of dealing, including without limitation, the implied warranties of merchantability and fitness for particular purpose.

**Notice of Breach:** Buyer agrees to provide Layfield with written notice of any breach of the above warranty within thirty (30) days after Buyer discovers, or should have discovered, the alleged breach. Time is of the essence herein and Buyer's failure to provide written notice to Layfield within the required time of any alleged breach of the foregoing warranty will release and discharge Layfield from any obligation or liability for the breach of warranty.

Layfield reserves the right to examine the Products after receipt of written notice from the Buyer of a claim under this warranty. On request, Layfield, or a representative or agent chosen by Layfield, will be provided access by the Buyer to the Products for examination within thirty (30) days immediately following receipt of written notice from the Buyer of the alleged breach. The Buyer will make all efforts to facilitate such examination by Layfield on a timely basis.

If required by Layfield, the Products alleged to be defective will be returned to Layfield, at its sole discretion and expense, for examination. No goods are to be returned to Layfield without its prior written authorization.

**Limitations on Remedies:** In the event of a material breach of the above warranty and provided that Buyer gave written notice of the alleged breach within the time required, Layfield will, in its sole discretion, refund Buyer the purchase price of the defective Products purchased by the Buyer or repair or replace the defective Products. The remedies set forth herein shall be the sole and exclusive remedies available to Buyer so that Layfield's payment of the purchase price of the defective Products to the Buyer or repair or replacement of the defective Products is a fulfillment of all of Layfield's obligations. Layfield shall not be liable for special, incidental, or consequential damages for, resulting from, or in connection with, any breach of warranty or for any loss, injury, or damage of any kind to property or person resulting from the use of the Products by the Buyer. Under no circumstances shall Layfield be liable for damages beyond the purchase price of the defective Products purchased by the Buyer, whether in contract, in tort, or under any warranty or other use. Without limiting the generality of the foregoing, Layfield shall not be responsible for water damage caused by or related to a failure of the Products, or for mold, mildew, fungi, or air quality problems related thereto.



# DISCLAIMER AND IMPORTANT NOTES

1. **Indemnity:** The Buyer agrees to indemnify, save harmless, and defend the Seller and the Seller's directors, officers, and employees from and against all claims by any third party (being an individual, partnership, joint venture, firm, trust, body corporate, government, authority of any other legal entity other than the Seller or the Buyer) in respect of or in any way relating to the Products, Services or the installation of the Products including, without limitation any claims relating to any breach of contract, negligence or other tort or breach of statutory or other duty by the Seller. The Buyer agrees that the Seller's directors, officers, and employees are intended to be their party beneficiaries of this clause.

2. **Design:** The Buyer is responsible for ensuring that the design into which the Product will be used is properly engineered and that the Product properties are adequate for the installation. Should the Product be used in an application where property or public safety could be endangered, the Buyer warrants that the design of the Product has been engineered by a competent engineer with experience in the design of the Product. Unless specifically agreed to in writing, the Seller shall not be responsible for the results of any technical advice provided free of charge in connection with the Product's design, installation, or use. The Seller makes no warranty against patent infringement.

3. **Disclaimer:** The information presented herein, while not guaranteed, is, to the best of our knowledge, true and accurate. While every effort has been made to provide accurate and reliable information, it is up to the user of this Product to verify all information, including designs it might be based upon, with an independent source. Application of this data must be made on the basis of responsible professional judgment. Except when agreed to in working conditions of use, no warranty expressed or implied is made regarding the performance or fitness of use of any product since the manner of use and handling is beyond our control.







For more information on AquaDam® water management products,  
please contact your local Layfield representative

[www.Aquadam.ca](http://www.Aquadam.ca) ▶ Canada 1.855.530.4226 ▶ USA 1.855.894.7436

