

# ***AquaDam Applications***

***(Includes Material Specifications)***



## ***Water Controlling Water***

### **Water-Filled Cofferdams**

LOW-IMPACT, ENVIRONMENTALLY FRIENDLY WATER-FILLED COFFERDAMS  
FOR: WATER DIVERSIONS, DEWATERING, FLOOD CONTROL, REMEDIATION,  
HAZ-MAT CONTAINMENT, AND WATER STORAGE.

Aqua Dam, Inc.® AquaDams® are water-filled structures that can be used as dams or  
cofferdams for: stream diversions, dewatering boat ramps, docks, and pond liner  
repairs.

AquaDams are excellent for flood protection. They are more effective than sandbags and other water  
control devices.

**Aqua Dam, Inc. ®**

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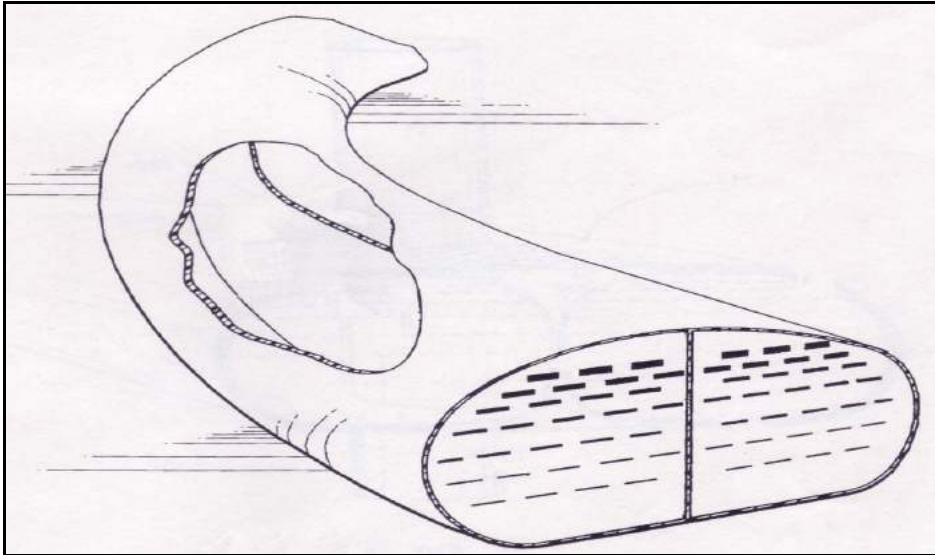
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## ***THE CONCEPT:***

AquaDams® are portable dams filled with on-site water that can be installed to control, contain, or divert the flow of water. AquaDams® consist of two basic components: two watertight inner polyethylene tubes (**which contain the water**), and an outer or "master" sleeve made of a heavy duty geotextile woven polypropylene (**which holds the two inner tubes in contact when filled**). This figure below shows a cut away section illustrating the relationship between the inner and outer tubes of a typical filled AquaDam®.



To fill an AquaDam®, water is pumped into the two inner tubes. The durable woven outer sleeve confines the water-filled inner tubes and prevents them from moving away from each other. The counter friction/hydraulic pressure between the inner tube and the outer tube along with the mass and weight of the water creates pressure and stabilizes the AquaDam® when lateral water pressure is exerted against it. Due to the inherent flexibility of the materials used to confine the water, AquaDams® will conform to most surfaces, providing an excellent seal and keeping water seepage to a minimum.

AquaDams® come in a variety of sizes, ranging from 1 to 16 feet in height when filled. AquaDams® can also be made in nearly any length desired, upon request. Aqua Dam, Inc.® also has several units premade for immediate shipment, ranging from 3-FT to 8-Ft in height. Using coupling collars, two or more AquaDams® can be joined together to form a continuous cofferdam of any length. AquaDams® are joined together by a patented coupling collar connection. Large and small AquaDams® can be used in conjunction with each other, making the possible configurations almost endless. AquaDams® can be used in a straight line, to form an arc, or to encircle an area. AquaDams® can also be connected at angles to each other, as necessitated by the job requirements. AquaDams® are typically assembled in a factory and shipped on a roll ready for use at the job site. However, it is not unusual to assemble larger AquaDams® on site. A typical AquaDam® consists of a "master" sleeve and a pair of inner tubes rolled up on a wooden or metal core. In many instances, the core also plays an important part in the installation, re-rolling for future use, and transportation of AquaDams®.

## ***COMMON APPLICATIONS:***

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Cofferdams for dewatering construction sites</li> <li>• Water diversion in rivers and wetlands</li> <li>• Water containment</li> <li>• Flood control</li> <li>• Erosion control through diversion or containment of flowing water</li> <li>• Water storage</li> <li>• Boat ramp dewatering</li> <li>• Pond liner repair dewatering</li> <li>• Bridge pier repair</li> <li>• Pipeline crossings</li> </ul> | <ul style="list-style-type: none"> <li>• Water intake structures for municipalities</li> <li>• Water discharge structures</li> <li>• Fish habitat improvement</li> <li>• Silt containment, sediment collection, or settling ponds</li> <li>• Levees, levee toppings</li> <li>• Hazardous material or chemical spills (containment)</li> <li>• Temporary foot causeway through environmentally sensitive areas</li> <li>• Wetlands management</li> </ul> |
|--|---|

The old ways of earthen fill discharges and expensive sheet piling have been the traditional method of isolating submerged work areas. These methods are environmentally detrimental, time consuming, and expensive because of their reliance on heavy equipment.

Water-filled cofferdams eliminate the fill-discharge risk of construction sites. On-site water is pumped into an AquaDam®, which unrolls the unit due to the water pressure inside it. An AquaDam® can be installed in hours in most applications, without causing damage to the aquatic environment while isolating the work area. Environmentally friendly dewatering of the worksite can be achieved and your work can begin.

When used for perimeter flood control and augmenting levees, for example, AquaDams® are much more effective than sandbags. They can be installed much quicker, at a fraction of the cost, without all the foot traffic associated with labor-intensive sandbagging.

The amount of water that can be stored in a standard 4-FT AquaDam®, with a width of 9-FT and a length of 100-FT (filled to capacity), is about 21,000 gallons. AquaDams® are durable and long lasting. With proper installation and removal, AquaDams® can be stored and used more than once. Should a leak develop, patching tape is available. If necessary, replacement tubes are available for purchase.



## ***FLOOD CONTROL:***



3' high AquaDams® being used for homeowner flood protection in Clear Lake, CA.



3' high AquaDams® used to protect a home from floodwaters in Sun Valley, ID.



***FLOOD CONTROL (CONT.):***



4' high AquaDams® used for flood protection of the Skylark Hotel in Clear Lake, CA.



More 3' and 4' high AquaDams® used for flood protection in Sun Valley, ID.





## ***BOAT RAMP CONSTRUCTION & REPAIR:***



16' high AquaDam® at Little Creek Naval Amphibious Base. Norfolk, VA



6' high AquaDam® in Lake Havasu, CA, along the Colorado River.



***BOAT RAMP CONSTRUCTION & REPAIR (CONT.):***



12' high AquaDam® in Chattanooga, TN, along the Tennessee River.



AquaDams®, used to dewater for boat ramp repair on Lake Erie, OH.



AquaDams® used to dewater for boat ramp construction on Gold Lake, CA.



9' high AquaDam® used for boat ramp construction in Bullhead City, CA.



***BRIDGE / PIER / CANAL / FOOTINGS:***



14' high AquaDam® used to dewater a tidal canal in Fremont, CA.



AquaDams® used to dewater a canal bank on the Salt River Project. Phoenix, AZ.



8' high AquaDam® used to isolate a work area for pier construction in Philadelphia, PA.



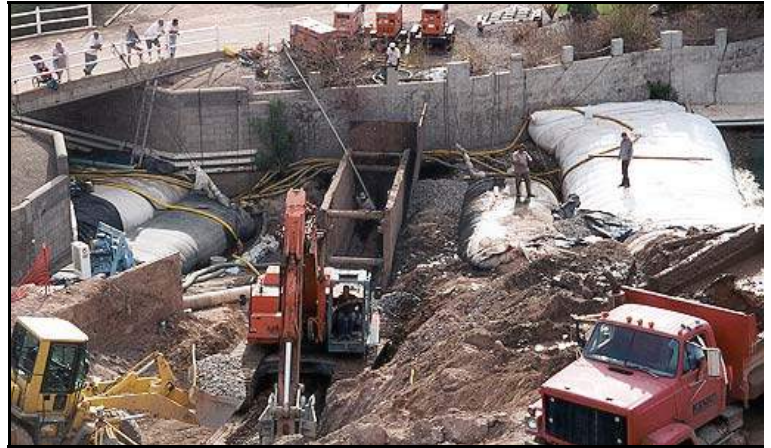
***BRIDGE / PIER / CANAL / FOOTINGS (CONT.):***



Several 6' high AquaDams® used to dewater a bridge pier for retrofitting in Bear Creek. Medford, OR.



8' and 5' high AquaDams®, used to dewater a canal for pump station repair. Antioch, CA.



8' and 4' high AquaDams® used to dewater for "open cut" pipeline repair in Parker, AZ.



10' high AquaDam® used to dewater for bridge pier construction. Sacramento, CA.



## ***PIPELINE CROSSINGS:***



8', 6' and 4' high AquaDams® used to contain sediments during a Williams Transco natural gas pipeline repair project on the Bogue Chitto River. McComb, MS.



4' high AquaDam® in Eureka, CA.



AquaDam® blocks canal in Denver, CO.



Natural gas pipeline crossings in Alberta, Canada and Fort St. John, B.C.



### ***PIPELINE CROSSINGS (CONT.):***



4' high AquaDams® were used upstream and downstream of this trench to contain sediments during a Williams Transco gas pipeline installation in Pine Creek. Williamsport, PA.



1.5' high AquaDams® in Oakland, CA.



6' high AquaDams in the Pitt River, CA.  
The river passed through the pipes.



8' and 6' high AquaDams® abut into the sides of a flume near Grand Forks, BC.



## ***STREAM DIVERSIONS:***



5' high AquaDam® used to divert water for installation of an irrigation check dam in Apple Creek, OR.



Mad River. Arcata, CA.



Eagle River. Vail, CO.



Fish habitat construction on the Eel River. Redcrest, CA.



***POND LINER REPAIR:***



6', 4' & 1.5' high AquaDams® near Kingman, AZ.



1,300 linear feet of AquaDams® in an arsenic pond. Northern, WA.



Nevada Cogeneration Associates, Power Plant #1.



***REMEDIATION / HAZARDOUS MATERIALS (HAZ-MAT):***



AquaDam® being used to isolate the Vermilion River from contaminants. Pontiac, IL.



Containing a chemical spill on the Columbia River. The Dalles, OR.



AquaDams® at an oil refinery in Martinez, CA.



7' high AquaDam® used to split a sanitation pond in Yolo County, CA.



## ***WATER STORAGE:***



4' and 5' high AquaDams® used for salt water storage during cleaning and renovation of Shamu, the killer whale's tank at SeaWorld Ohio.



This AquaDam® has been used to convert a flatbed trailer into an instant water tank.



Another picture from SeaWorld Ohio.



6' high AquaDam® used to store low-level radioactive water for Westinghouse in Northern PA.



## ***WETLAND RESTORATION / CONSTRUCTION PROJECTS:***



4' high AquaDams® used to separate the Upper Truckee River from newly created wetlands to prevent erosion into Lake Tahoe. Lake Tahoe Keys, CA.



**Low tide**



**High tide**

4' high AquaDams® isolate a dredge spoil area from tidal flow to protect newly planted aquatic vegetation near Kingman Lake. Anacostia River, District of Columbia.



Years later, vegetation at Kingman Lake.



Wetland construction, Great Salt Lake, UT.



***LAKE RESTORATION / CONSTRUCTION PROJECTS:***



A combination of 8' and 14' high AquaDams® used to isolate and dewater one section of a lake separating two building complexes at the Broadmoor Hotel. Colorado Springs, CO.



Woodlawn Lake. San Antonio, TX.



Kissena Lake. Queens, NY.



Dewatering for amphitheater construction. Foster City, CA.



***RECREATIONAL USE:***



A 6' high AquaDam® installed for recreational use in Ruth Lake, CA.



The end of this AquaDam® was covered with slick plastic to create a giant slip-and-slide.



A 5' high AquaDam® installed in Larabee Creek, CA to contain water for a swimming hole.



# AquaDam® Material Specifications

| Inflated Dimensions              | Controllable Mud/Water Depth* | Specifications of Inner and Outer Tubes  | Volume Per Linear Length**      | Dry Weight Per Linear Length   |
|----------------------------------|-------------------------------|--|---------------------------------|--------------------------------|
| <b>1'Hx2'W</b><br>(0.3m tall)    | <b>9"</b><br>(23cm)           | <b>Inner Tubing:</b> 1 ply, 12mil, Polyethylene. <b>Outer Sleeve:</b> 1 ply, 300lb/in <sup>2</sup> burst strength PP   | <b>12gal/ft</b><br>149L/m       | <b>0.75 lbs/ft</b><br>1.1 kg/m |
| <b>1.5'Hx3'W</b><br>(0.45m tall) | <b>14"</b><br>(36 cm)         | <b>Inner Tubing:</b> 1 ply, 12mil, Polyethylene. <b>Outer Sleeve:</b> 1 ply, 300lb/in <sup>2</sup> burst strength PP   | <b>25gal/ft</b><br>310L/m       | <b>0.95 lbs/ft</b><br>1.4 kg/m |
| <b>2'Hx4'W</b><br>(0.61m high)   | <b>18"</b><br>(46cm)          | <b>Inner Tubing:</b> 1 ply, 12mil, Polyethylene. <b>Outer Sleeve:</b> 1 ply, 300lb/in <sup>2</sup> burst strength PP   | <b>50gal/ft</b><br>621L/m       | <b>1.5 lbs/ft</b><br>2.2 kg/m  |
| <b>2.5'Hx5'W</b><br>(0.76m tall) | <b>24"</b><br>(61 cm)         | <b>Inner Tubing:</b> 1 ply, 12mil, Polyethylene. <b>Outer Sleeve:</b> 1 ply, 300lb/in <sup>2</sup> burst strength PP   | <b>88gal/ft</b><br>1,093L/m     | <b>1.85 lbs/ft</b><br>2.8 kg/m |
| <b>3'Hx7'W</b><br>(0.9m tall)    | <b>30"</b><br>(76 cm)         | <b>Inner Tubing:</b> 1 ply, 12mil, Polyethylene. <b>Outer Sleeve:</b> 1 ply, 300lb/in <sup>2</sup> burst strength PP   | <b>120gal/ft</b><br>1,490L/m    | <b>2.5 lbs/ft</b><br>3.7 kg/m  |
| <b>4'Hx9'W</b><br>(1.2m tall)    | <b>38"</b><br>(97 cm)         | <b>Inner Tubing:</b> 1 ply, 12mil, Polyethylene. <b>Outer Sleeve:</b> 1 ply, 300lb/in <sup>2</sup> burst strength PP   | <b>210gal/ft</b><br>2,608L/m    | <b>4.3 lbs/ft</b><br>6.4 kg/m  |
| <b>5'Hx11'W</b><br>(1.5m tall)   | <b>44"</b><br>(112 cm)        | <b>Inner Tubing:</b> 1 ply, 12mil, Polyethylene. <b>Outer Sleeve:</b> 2 ply, 300lb/in <sup>2</sup> burst strength PP   | <b>320gal/ft</b><br>3,974L/m    | <b>6.4 lbs/ft</b><br>9.5 kg/m  |
| <b>6'Hx13'W</b><br>(1.8m tall)   | <b>54"</b><br>(137 cm)        | <b>Inner Tubing:</b> 1 ply, 12mil, Polyethylene. <b>Outer Sleeve:</b> 2 ply, 300lb/in <sup>2</sup> burst strength PP   | <b>450gal/ft</b><br>5,589L/m    | <b>8.5 lbs/ft</b><br>13 kg/m   |
| <b>8'Hx17'W</b><br>(2.4m tall)   | <b>74"</b><br>(188 cm)        | <b>Inner Tubing:</b> 1 ply, 12mil, Polyethylene. <b>Outer Sleeve:</b> 2 ply, 300lb/in <sup>2</sup> burst strength PP   | <b>700gal/ft</b><br>8,694L/m    | <b>13 lbs/ft</b><br>19 kg/m    |
| <b>10'Hx21'W</b><br>(3m tall)    | <b>88"</b><br>(224 cm)        | <b>Inner Tubing:</b> 2 ply, 8 mil, Polyethylene. <b>Shroud:</b> 1 PP woven shroud around both inner tubes. <b>Outer Sleeve:</b> 4 ply, 300lb/in <sup>2</sup> burst strength PP | <b>1,000gal/ft</b><br>12,419L/m | <b>25 lbs/ft</b><br>37 kg/m    |
| <b>12'Hx25'W</b><br>(3.7m tall)  | <b>100"</b><br>(254 cm)       | <b>Inner Tubing:</b> 2 ply, 8 mil, Polyethylene. <b>Shroud:</b> 1 PP woven shroud around both inner tubes. <b>Outer Sleeve:</b> 5 ply, 300lb/in <sup>2</sup> burst strength PP | <b>1,700gal/ft</b><br>21,113L/m | <b>35 lbs/ft</b><br>52 kg/m    |
| <b>14'Hx29'W</b><br>(4.3m tall)  | <b>110"</b><br>(279 cm)       | <b>Inner Tubing:</b> 3 ply, 5 mil, Polyethylene. <b>Shroud:</b> 2 PP woven shroud around both inner tubes. <b>Outer Sleeve:</b> 7 ply, 300lb/in <sup>2</sup> burst strength PP | <b>2,500gal/ft</b><br>31,048L/m | <b>47 lbs/ft</b><br>70 kg/m    |
| <b>16'Hx33'W</b><br>(4.8m tall)  | <b>126"</b><br>(320 cm)       | <b>Inner Tubing:</b> 3 ply, 5 mil, Polyethylene. <b>Shroud:</b> 2 PP woven shroud around both inner tubes. <b>Outer Sleeve:</b> 7 ply, 300lb/in <sup>2</sup> burst strength PP | <b>3,000gal/ft</b><br>37,258L/m | <b>51 lbs/ft</b><br>76 kg/m    |

\*This number is based on the friction of a rocky bottom. Slick mud, poly pond liners, and other slick surfaces may require the use of a taller primary AquaDam and/or a support dam installed behind the primary AquaDam.

\*\* Volume is based on installation on flat ground. Slopes will reduce internal volume of an AquaDam.

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