

AquaLux™ Filter

Installation Guide: Concrete Vaults

Concrete Vault Installation

This installation guide is a reference for installing the AquaLux Water Quality unit into a precast concrete structure. These directions assume the vault has been cast, and that the top slab has not been set. AquaLux filters are not recommended to be used as erosion control during site construction operations. AquaLux system should remain offline or uninstalled until site stabilization has occurred. Please contact your local ADS representative if you have any questions.

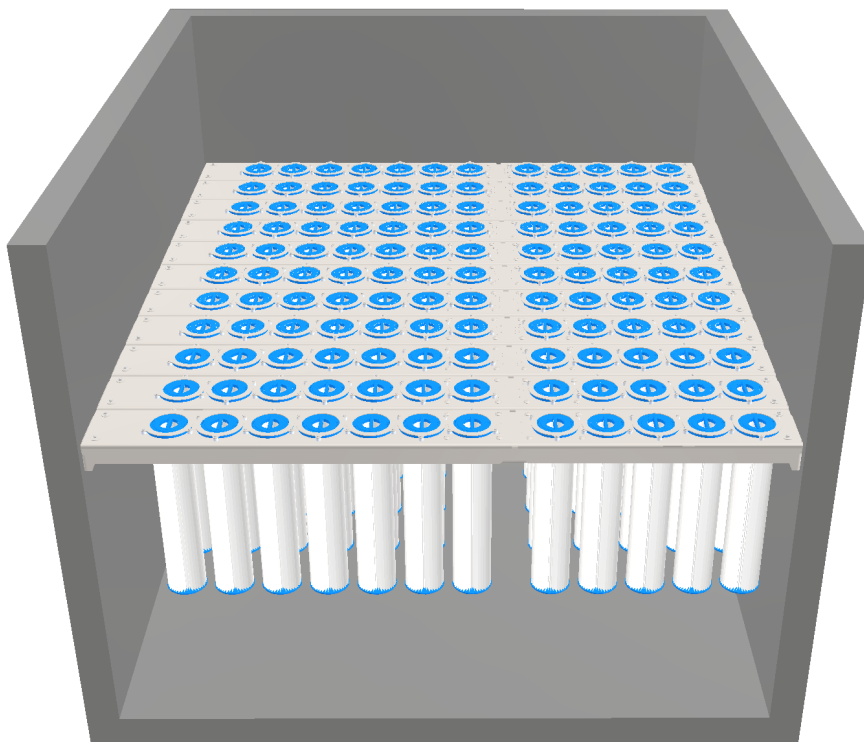
Note: Do not insert the inlet or outlet pipes until after the AquaLux internals have been fully installed. All pipes should sit flush inside the manhole. If pipes must be inserted in advance, the pipes should not protrude into the structure as they can interfere with installation of the AquaLux Internals.

Content

Section 1: Components and Tools

Section 2: Installing the Deck

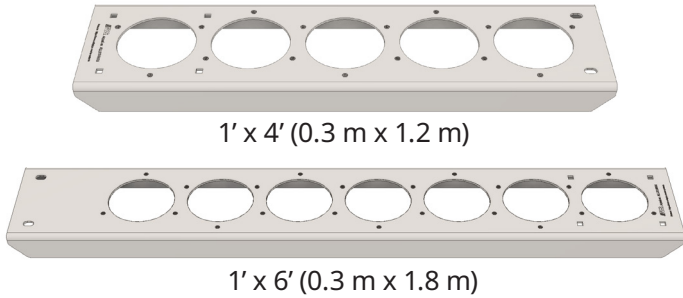
Section 3: Installing Filter Cartridges - For Contractor/Jobsite



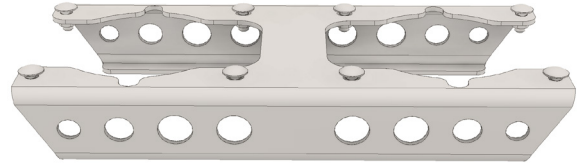
Section 1: Components and Tools

Components Supplied

Panels

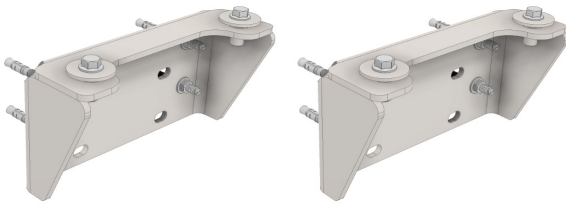


Joint (if supplied, depending on vault dimensions)



with included (8) 1/2" (12.5 mm) carriage bolts, (8) washers, (8) 1/2" (12.5 mm) hex nuts

Brackets



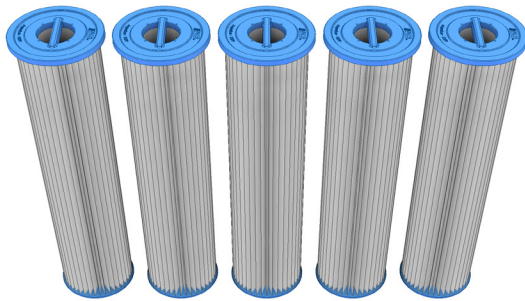
included with (4) 3/8" x 1.25" (9.37 x 12.5 mm) flange bolts, (4) washers, (8) 3/8" - 16 (9.37 mm) wedge anchor kits

Filter Rings (Installed at jobsite)



5-pack or 7-pack, each including (3) 1/4" - 20 (6.25 mm) hex bolts

Filter Cartridges (Installed at jobsite)



Caps (if supplied, depending on design requirements)



Conseal Roll(s)



Tube Sealant (Tube or sausage pack Sealant)



Tools Needed

1. Wrenches and/or ratchet and sockets for the following head sizes:
 - Wedge Anchor head size: $\frac{9}{16}$ " (14.28 mm).
 - Carriage bolt nut size: $\frac{3}{4}$ " (19.05 mm).
 - Bracket top bolt head size: $\frac{9}{16}$ " (14.28 mm).
 - Filter ring bolt head size: $\frac{7}{16}$ " (11.11 mm).
 - Cap bolt head size: $\frac{7}{16}$ " (11.11 mm).
2. Torque wrench(s) capable of the following torque values:
 - 15 - 30 ft-lbs. (20.3 - 40.7 Nm)
 - 50 in-lbs. (5.6 Nm)
3. Level
4. Caulk gun/sausage pack gun

Section 2: Installing the Deck

1. Install Brackets

- a. Mark/snap lines at bracket elevation across the opposing walls that are **NOT** the inlet or outlet walls. See **Figure 1**.

- Bracket Elevation = Invert Out Elevation - $\frac{1}{4}$ " (6.25mm)

*Example: Invert Out = 59" (1,475 mm),
Bracket Elevation = 58 $\frac{3}{4}$ " (1,468.75 mm).*

- b. Mark bracket locations
 - i. Bracket spacing: starting 1" (25 mm) from vault wall, brackets are spaced 2" (50 mm) apart. See **Figure 2**.
 - ii. Hold each bracket in position on the marked elevation line.
 - iii. Check spacing.
 - iv. Mark 4 holes. Start with A position holes. See **Figure 3**.

Figure 1

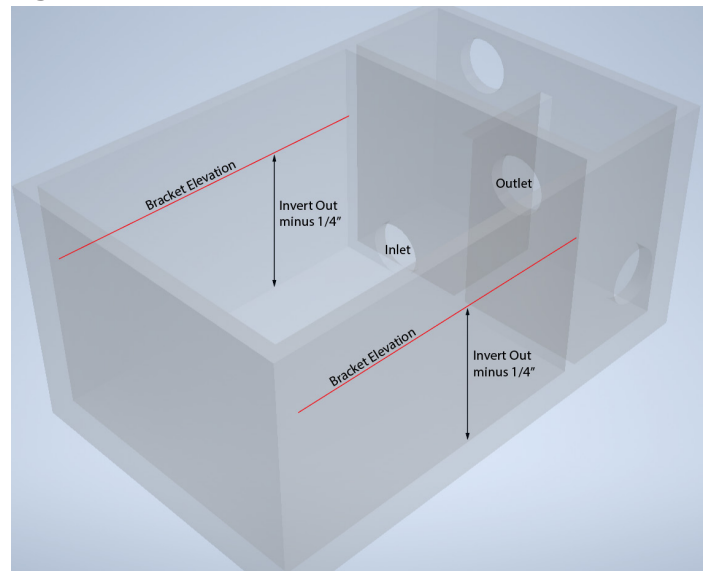


Figure 2

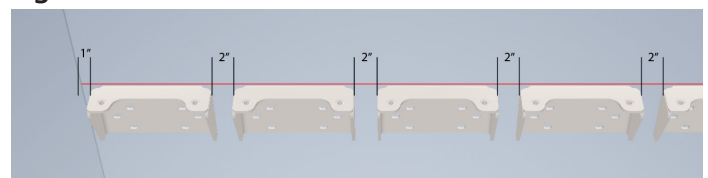
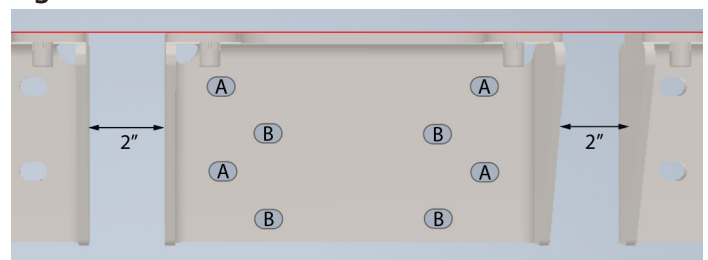
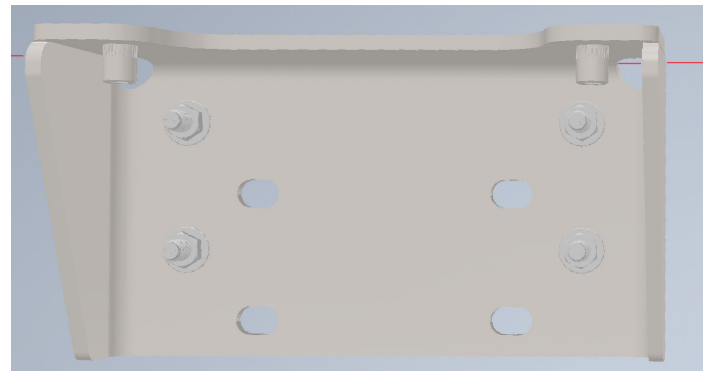


Figure 3



- c. Drill four $\frac{3}{8}$ " (9.37 mm) holes. If rebar is encountered in drilling, move to the B position, mark again and redrill. See **Figure 3** on previous page.
- d. Install four supplied wedge anchors.
 - i. Lightly hammer the anchors in place
 - ii. Use $\frac{9}{16}$ " (14.28 mm) wrench to tighten the locking nuts.
 - iii. Double check spacing 2" (50 mm) $\pm$ $\frac{1}{8}$ " (3.12 mm).
 - iv. Tighten to required torque: 30 ft-lbs (40.7 Nm) to firmly secure bracket to the concrete. See **Figure 4**.
- e. Repeat until all brackets are installed all the way across both walls, opposite each other.

Figure 4



2. Assemble Panels

- a. **4' (1.2 m), 6' (1.8 m) Vault Widths:** No additional assembly needed, skip to Step 3.
- b. **8' (2.4 m), 10' (3.0 m), 12' (3.6 m) Vault widths**
 - i. Assemble to correct width using a joint piece between two panels

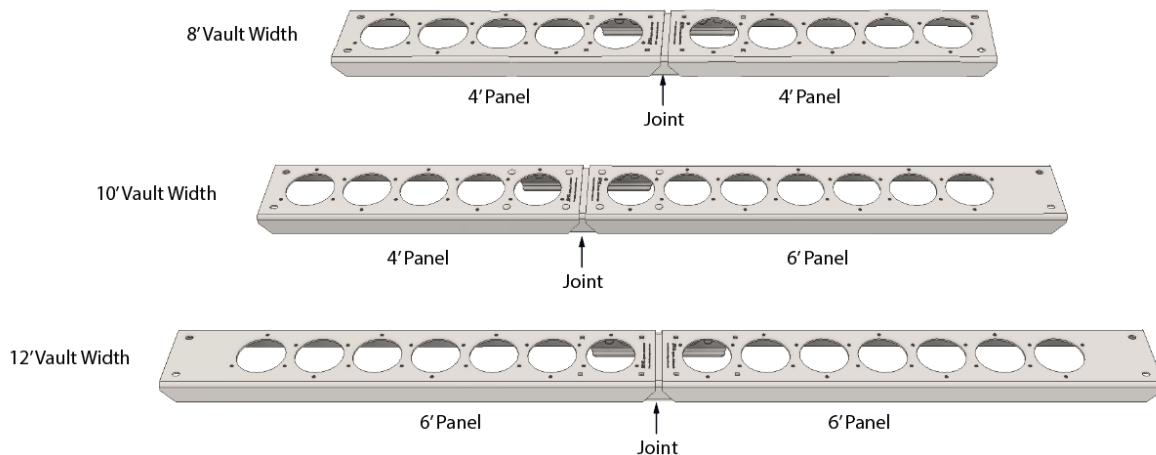


Figure 5

- ii. Lay out parts for one complete panel. Laying parts on edge makes hole alignment easier. See **Figure 5**.
- iii. Apply anti-seize to the 8 carriage bolts included with the joint.
- iv. Insert carriage bolts from panel side through square holes in panel into corresponding joint holes. See **Figure 6**.

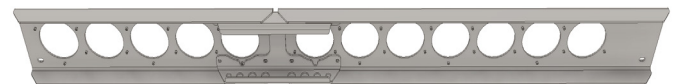
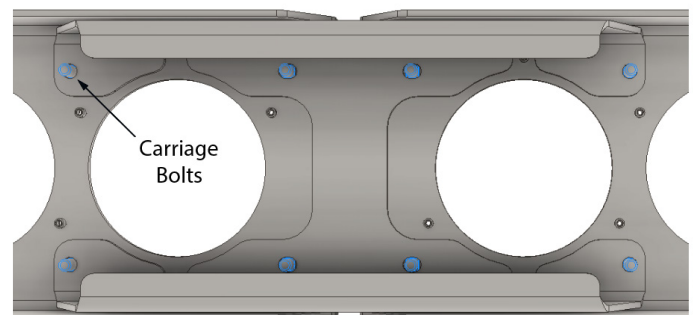


Figure 6



v. Add 1/2" (12.5 mm) flange nuts, finger tighten.
See **Figure 7**.

vi. Check that the assembled panel is square using a long straight edge (level, long square).
See **Figure 8**.

vii. Tighten nuts in a criss cross pattern using a 3/4" (18.75 mm) socket to required torque:
25 ft-lbs. (33.9 Nm).

viii. Flip over assembled panel. See **Figure 9**.

ix. Repeat for all other panel sections

Figure 7

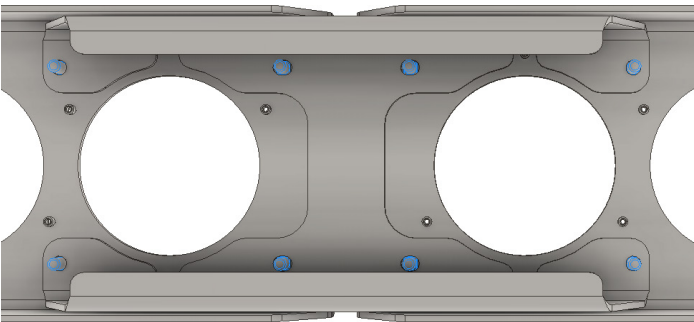


Figure 8

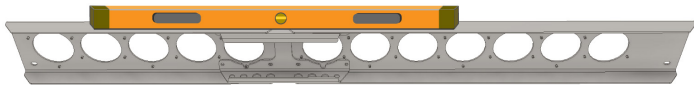
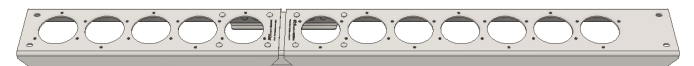


Figure 9



3. Rig Panels and Lift onto brackets inside vault

a. Rig panel for crane or other lifting device.
See **Figure 10**.

Panel Size ft (m)	Panel Weight lbs (kg)
1 x 4 (0.3 x 1.2)	45 (20.4)
1 x 6 (0.3 x 1.8)	71 (32.2)
1 x 8 (0.3 x 2.4)	159 (72.1)
1 x 10 (0.3 x 3.0)	185 (83.9)
1 x 12 (0.3 x 3.6)	211 (95.7)

Figure 10

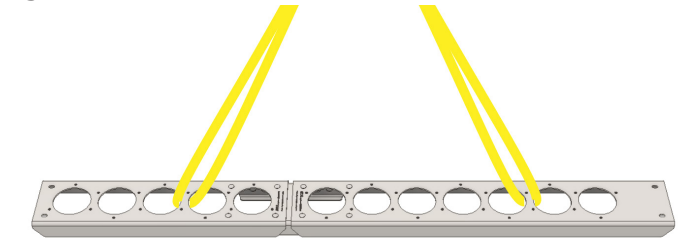
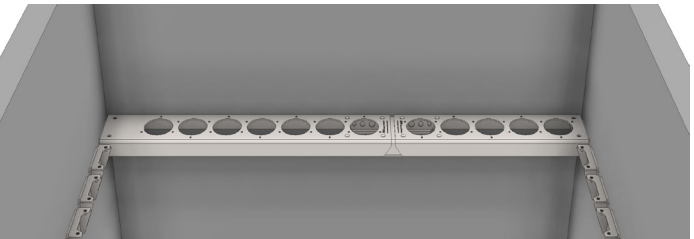
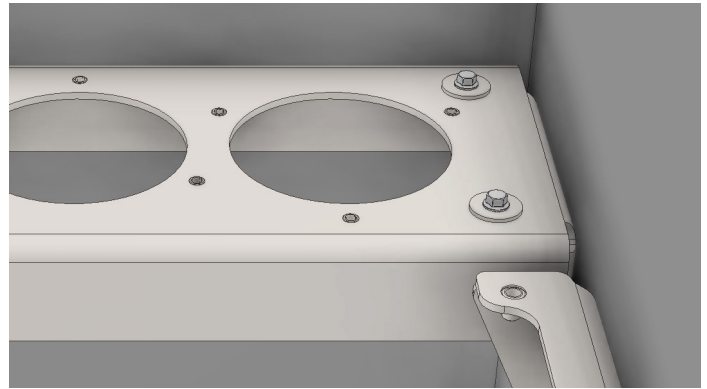


Figure 11



- c. Attach panel to brackets with the bolts and washers supplied with the bracket, finger tighten. See **Figure 12**.

Figure 12



Safety Warning

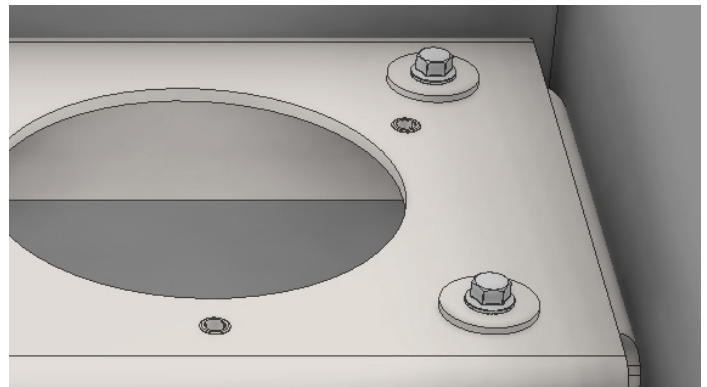
Maximum Deck Load: 500 lbs (226.7 kg), 2 Persons

The activities described in the AquaLux Installation Guide may involve lifting operations, work at heights, confined-space entry, exposure to construction hazards, and work around heavy equipment. In addition, AquaLux deck surfaces may present walking hazards, including large openings and slippery conditions when wet. Working on the deck may require fall protection. Failure to follow appropriate safety procedures may result in property damage, serious injury, or death.

The installer, jobsite contractor, maintenance contractor, and owner are solely responsible for identifying site-specific hazards, providing appropriate training, implementing required safety measures, utilizing appropriate personal protective equipment, and complying with all applicable federal, state, provincial, local, and site-specific safety regulations, codes, and standards.

- d. Check spacing between plates.
- Plates should have approximately $\frac{1}{8}$ " (3.12 mm) gap between them.
 - The gap should be relatively uniform along the length of the panel.
 - If needed, adjust panel spacing to achieve approximately $\frac{1}{8}$ " (3.12 mm) gap by loosening the bolts to the brackets, sliding panels accordingly.
- e. Tighten bracket bolts with $\frac{9}{16}$ " (14.28 mm) wrench/socket to required torque: 15 ft-lbs. (20.3 Nm). See **Figure 13**.

Figure 13



- f. Repeat until entire deck is set in place.
See **Figure 14**.
- g. Perform final check on gapping for entire deck.
Correct gapping as needed by loosening hold-down bolts and adjusting panel positions. See **Figure 15**.
- i. panel-to-panel gapping: 0.1" (2.5 mm) nominal.
 - ii. panel-to-concrete edge gapping: 0.5-2" (12.5 - 50 mm) range
- h. If any panels are loosened for adjustment, re-tighten bracket bolts with $\frac{9}{16}$ " (14.28 mm) wrench to required torque: 15 ft-lbs. (20.3 Nm). See **Figure 16**.

Figure 14

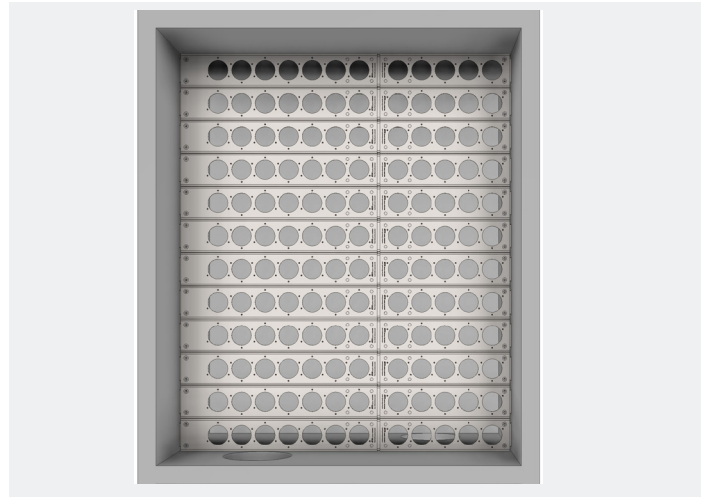


Figure 15

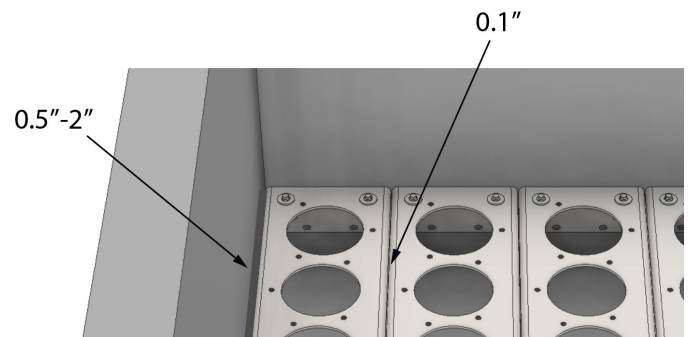
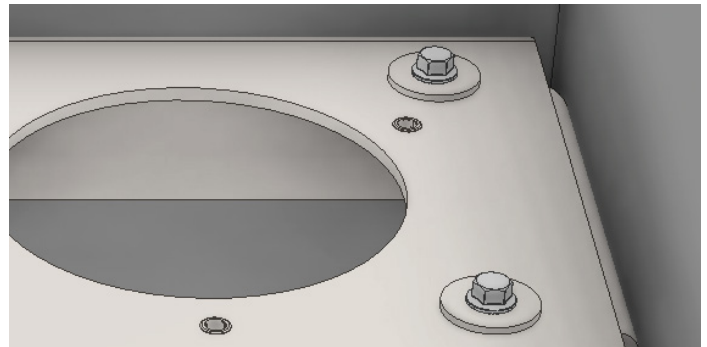


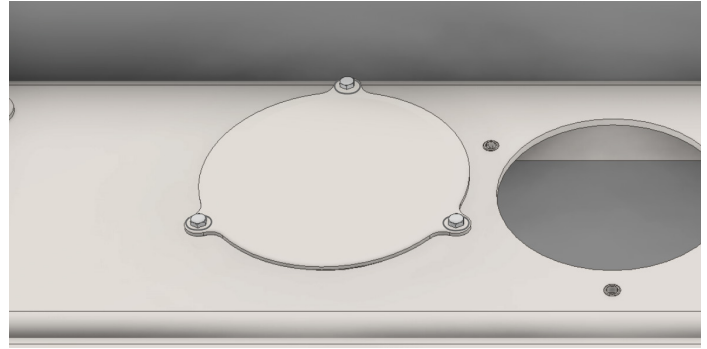
Figure 16



4. Install Caps, if applicable

- If the job drawing includes an installed cap count of zero, skip to Step 5.
- Cover hole(s) with supplied caps and attach with included bolts and washers. See **Figure 17**.
- Prioritize covering hole(s) under the vault steps. Otherwise, the choice of holes to cover is the installer's.
- Tighten cap bolts with $\frac{7}{16}$ " (11.11 mm) wrench to required torque: 50 in-lbs. (5.6 Nm).

Figure 17



5. Filter Cartridges and Filter Rings are not installed at Precast

- The Filter Cartridges and Filter Rings are installed at the jobsite at the conclusion of construction by the jobsite contractor.
- Transport these items to the jobsite along with the finished vault.

6. Seal the Deck

- Panel-to-Panel Sealing
 - Use supplied sealant
 - Apply $\frac{1}{4}$ " (6.25 mm) bead of sealant at each interface
 - Panel-to-Panel Gap: along length of panels. See **Figure 19**.
 - Joint Gap: within the joint gap. See **Figure 19**.

Figure 18

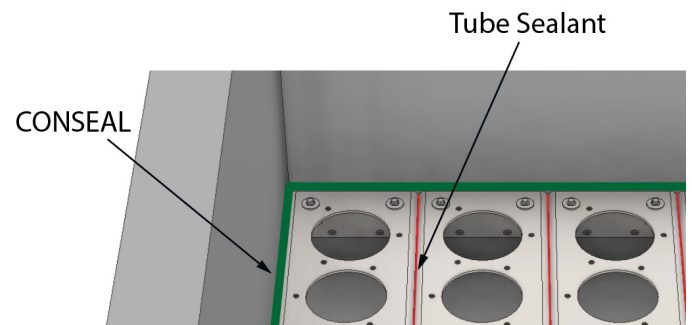
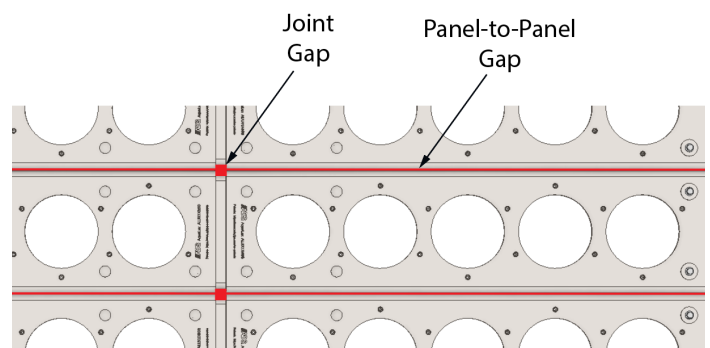


Figure 19



- Square Holes: If vault width is 4' (1.2 m) or 6' (2.4 m) and no joint piece is used, each panel will have 2 square holes that will also need sealant applied. See **Figure 20**.

iii. Dry time: refer to product instructions, 30-minute dry time to touch; longer for full cure.

b. Deck to Concrete Sealing

i. Apply Conseal to seal all gaps between panels and concrete along all four sides of the deck See **Figure 21**.

ii. For gaps beyond 1" (25 mm), overlap 2 segments of Conseal.

Figure 20

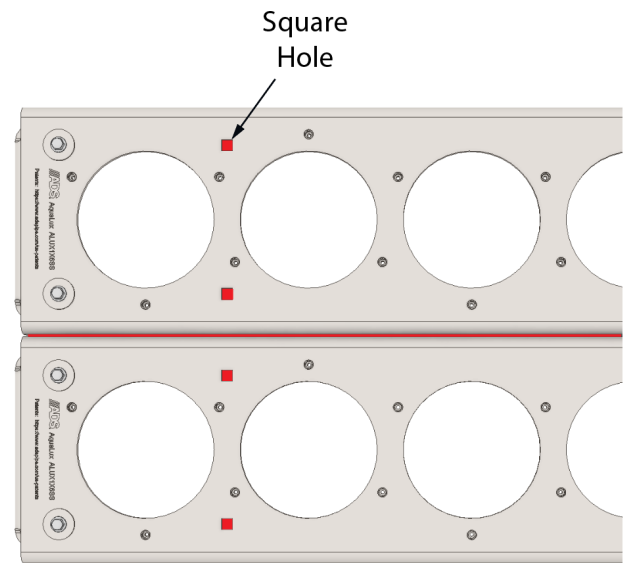
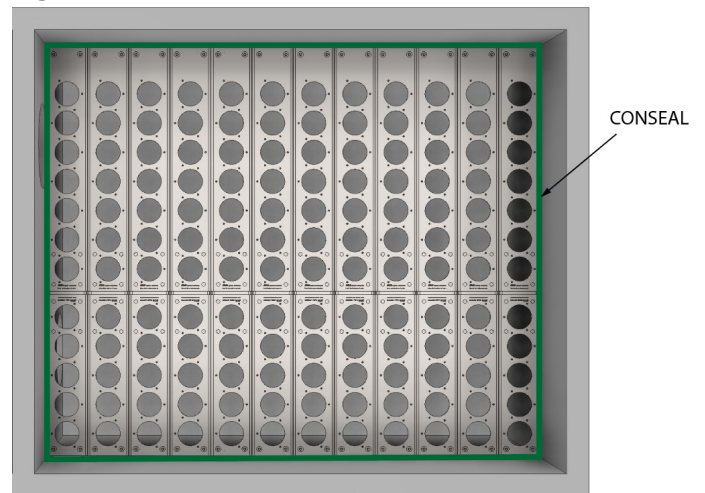


Figure 21



Section 3: Installing Filter Cartridges - For Contractor/Jobsite

AquaLux filters are not recommended to be used as erosion control during site construction operations. The AquaLux system should remain offline or uninstalled until site stabilization has occurred. Please contact your local ADS representative if you have any questions.

1. Filter Cartridges and Filter Rings

- a. The filter cartridges and filter rings should not be installed until the following conditions are met.
 - i. The vault, including top slab and all connecting piping, is installed.
 - ii. The drainage system has been cleaned and flushed of any construction debris, at project completion.

Safety Warning

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- b. Open filter cartridge from packaging and drop into deck opening. See **Figure 22**.
- c. Fit filter ring over filter and start the three bolts by hand. See **Figure 23**.
- d. Tighten bolts using $\frac{7}{16}$ " (11.11 mm) wrench to required torque: 50 in-lbs. (5.6 Nm).
- e. Repeat until all filter cartridges and rings are installed.

Figure 22

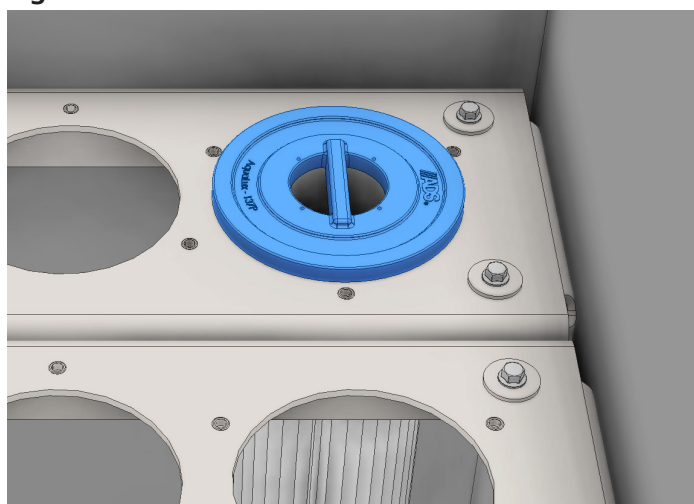


Figure 23

