

Aquabox

Aquabox is a modular underground system designed for sustainable stormwater management. The modules are delivered palletized to the project site and assembled in place.

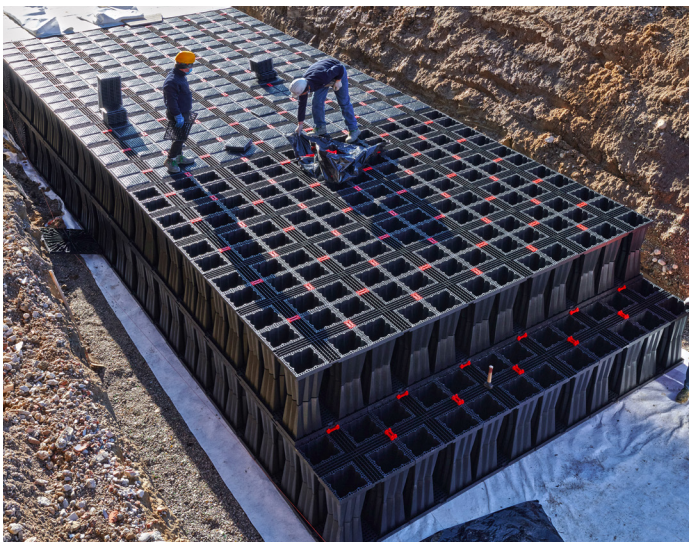
The Aquabox system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. The Aquabox can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.

Features

- Fast and easy installation
- High load resistance
- Open and flexible system that can be used for both detention and retention (infiltration) applications
- 96% void
- 29.5" x 29.5" x 31.5" (750 x 750 x 800 mm) modular modules that is easy to manage
- 15.24ft³ (0.43 m³) per Aquabox module

Benefits

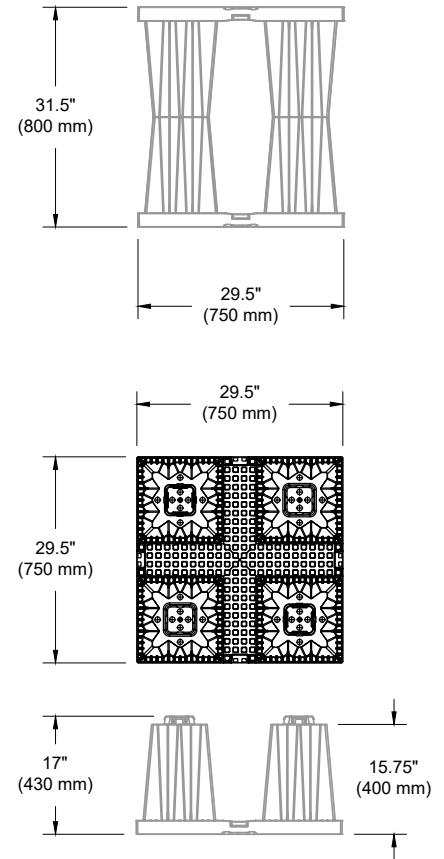
- Internal configuration makes the system easily accessible for inspection, maintenance & cleaning.
- Modules are stackable, allowing 16,000 ft³ (453.1 m³) of installed volume to be transported in a single truckload



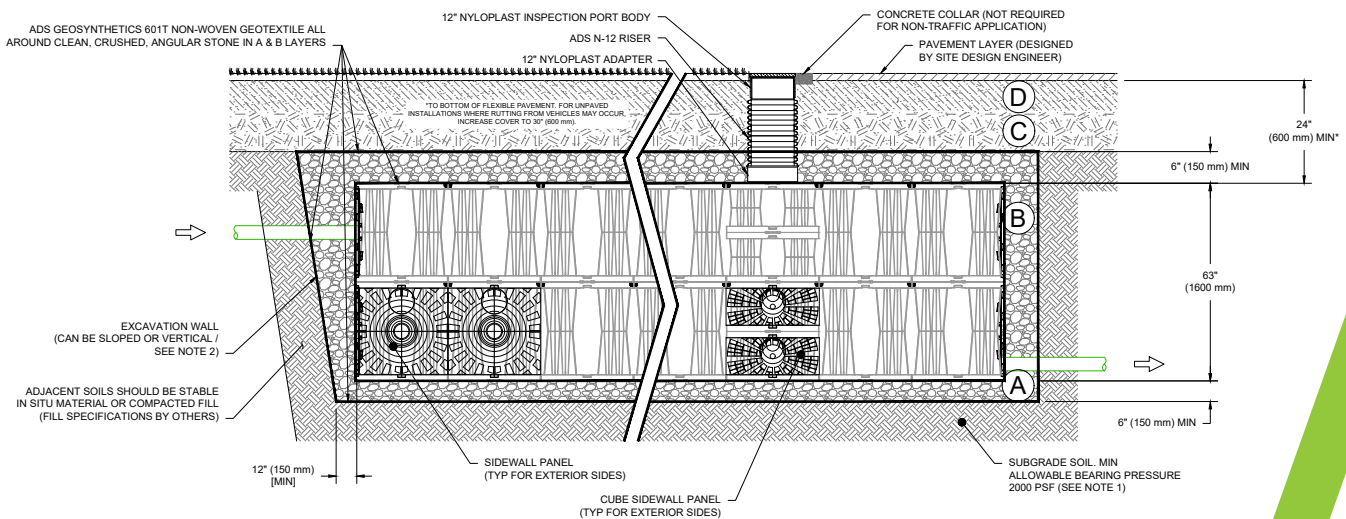
Aquabox Specifications

Aquabox is designed for the passage of heavy vehicles, load class HS20. The basin is equipped with access points for inspection and cleaning of the basin.

| | |
|------------------------------------|--|
| Dimensions | 29.5" x 29.5" x 31.5" (750 x 750 x 800 mm) |
| Weight | 45 lbs (20.4 kg) |
| Material | Recycled polypropylene with glass additive |
| Net volume | 15.24 ft ³ (0.43 m ³) |
| Void ratio | 96% |
| Pallet Size | 385.8" x 60.0" x 101.6" (9800 x 1520 x 2580 mm) |
| Number of pieces per pallet | 80 |



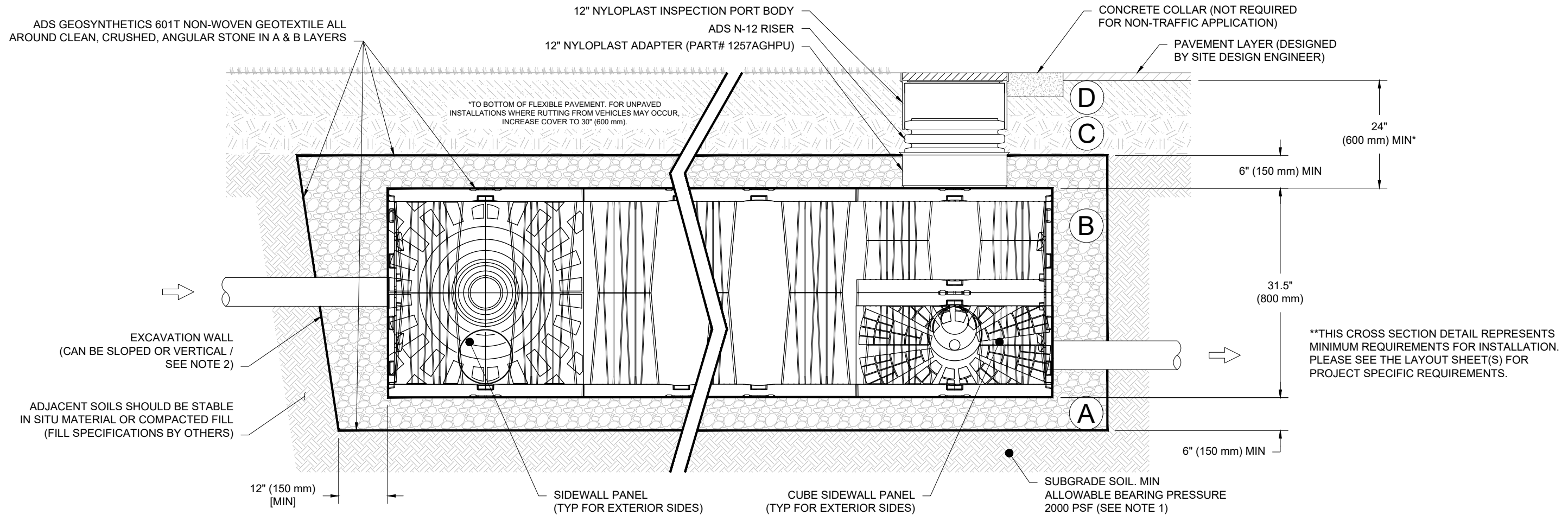
Cross Section



ACCEPTABLE FILL MATERIALS : AQUABOX-1

| MATERIAL LOCATION | | DESCRIPTION | AASHTO MATERIAL CLASSIFICATIONS | COMPACTION / DENSITY REQUIREMENT |
|-------------------|--|--|---|---|
| D | FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER. | ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS. | N/A | PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS. |
| C | INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE AQUABOX MODULES. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER. | GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER. | AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 | BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE AQUABOX MODULES IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN). |
| B | PERIMETER STONE: FILL SURROUNDING THE AQUABOX MODULES FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE. | CLEAN, CRUSHED, ANGULAR STONE | AASHTO M43 ¹ 467, 5, 56, 57 | NO COMPACTION REQUIRED. |
| A | FOUNDATION STONE: FILL BELOW AQUABOX MODULES FROM THE SUBGRADE UP TO THE BOTTOM OF THE AQUABOX MODULE. | CLEAN, CRUSHED, ANGULAR STONE | AASHTO M43 ¹ 467, 5, 56, 57 | PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3} |

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #57 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 57 (AASHTO M43) STONE".
 - ADS AQUABOX COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT ADS FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE PERFORMANCE CHARACTERISTICS OF THE SUBGRADE SOILS WITH CONSIDERATION FOR THE RANGE OF EXPECTED MOISTURE CONDITIONS. SUBGRADE PREPARATION AND/OR IMPROVEMENT SHOULD BE SPECIFIED BY THE DESIGN ENGINEER AS NECESSARY TO MEET THE PERFORMANCE REQUIREMENTS OF THE ADS AQUABOX SYSTEM.
- EXCAVATION WALL SHOULD BE COMPLIANT WITH OSHA SAFETY STANDARDS. DEEPER EXCAVATIONS AND MULTI-LAYER AQUABOX SYSTEMS MAY REQUIRE SLOPED OR BENCHED EXCAVATIONS. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL.

STANDARD CROSS SECTION
AQUABOX-1

DATE: 08/20/24 DRAWN: SMW CHECKED: JLM

| DATE | DRWN | CHKD | DESCRIPTION |
|------|------|------|-------------|
| | | | |

Aquabox
Modular Stormwater Management System

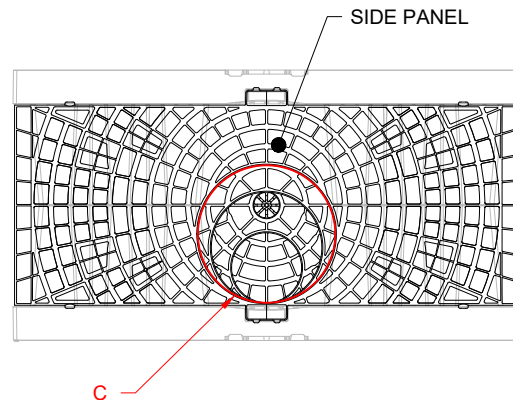
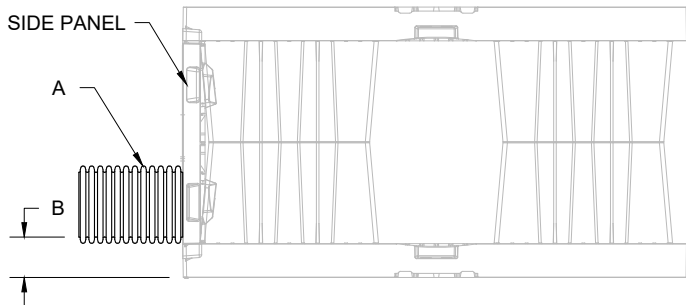
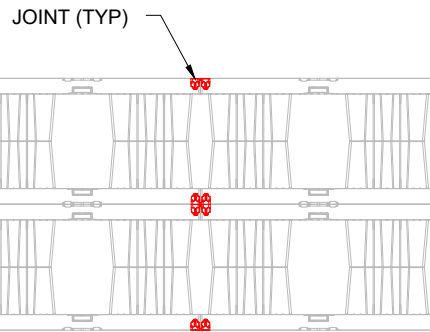
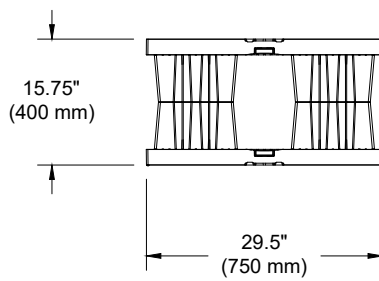
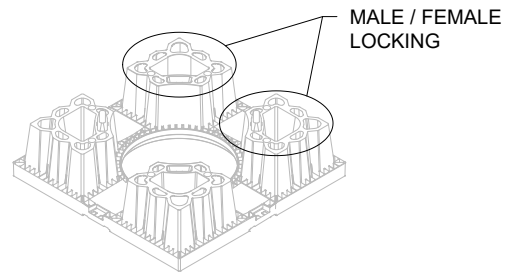
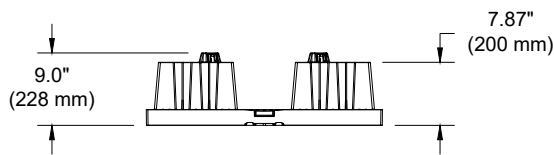
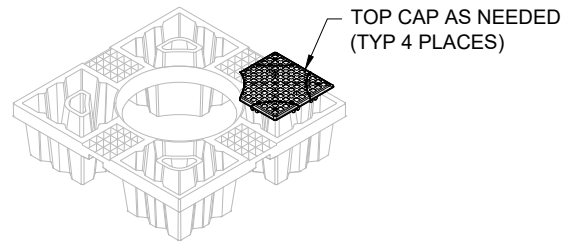
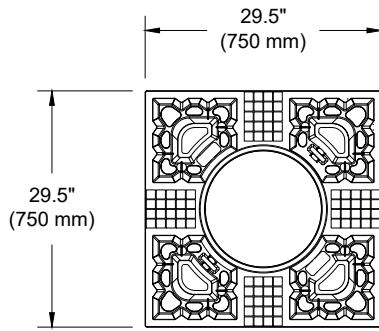
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HILLIARD, OH 43026



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AQUABOX CUBE MODULE TECHNICAL SPECIFICATION

NTS



| STUB CONNECTION | STUB (A) | INVERT (B) | MARKED CUT HOLE (C) |
|-------------------------|-------------|--------------|---------------------|
| 6" ADS N-12 (ECCENTRIC) | 6" (150 mm) | 2.5" (62 mm) | 200 mm |
| | | 6" (150 mm) | |

NOTE: ALL DIMENSIONS ARE NOMINAL

TECHNICAL SPECIFICATIONS
AQUABOX CUBE MODULE

DATE: 08/20/24
DRAWING #: 771-011
DRAWN: SMW
CHECKED: JLM

Aquabox
Modular Stormwater Management System

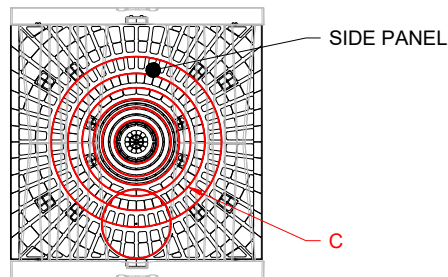
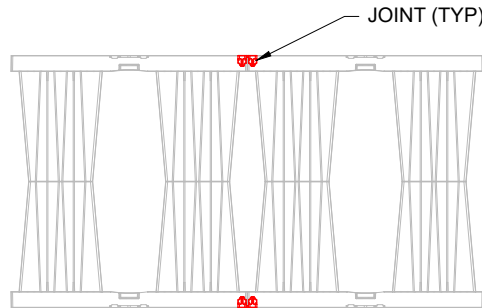
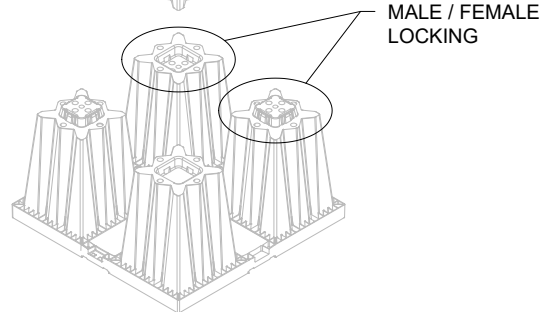
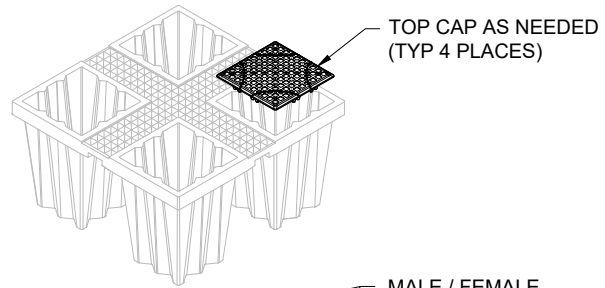
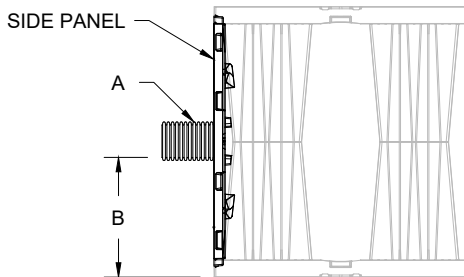
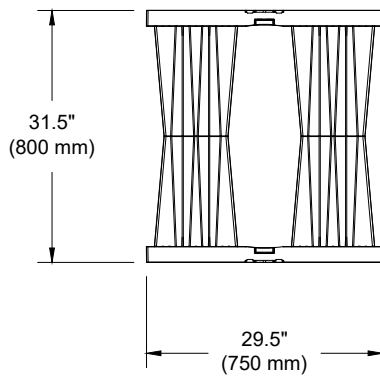
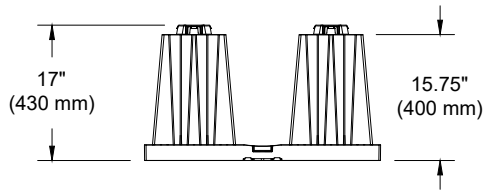
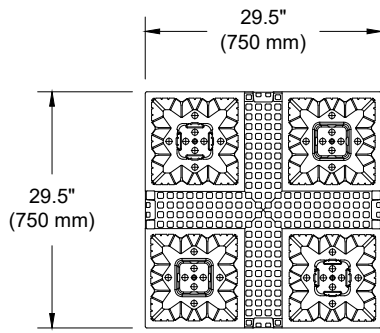
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ADS

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AQUABOX FULL MODULE TECHNICAL SPECIFICATION

NTS



TECHNICAL SPECIFICATIONS
AQUABOX FULL MODULE

DATE: 08/20/24
DRAWING #: 771-011
DRAWN: SMW
CHECKED: JLM

Aquabox
Modular Stormwater Management System

4640 TRUEMAN BLVD
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| STUB CONNECTION | STUB (A) | INVERT (B) | MARKED CUT HOLE (C) |
|--------------------------|--------------|----------------|---------------------|
| 4" ADS N-12 (CONCENTRIC) | 4" (100 mm) | 13.1" (334 mm) | 125 mm |
| 6" ADS N-12 (ECCENTRIC) | 6" (150 mm) | 2.5" (63 mm) | 200 mm |
| | | 20.3 (516 mm) | |
| 6" ADS N-12 (CONCENTRIC) | 6" (150 mm) | 11.9" (300 mm) | 200 mm |
| 8" ADS N-12 | 8" (200 mm) | 11.1" (282 mm) | 250 mm |
| 10" ADS N-12* | 10" (250 mm) | 10.0" (253 mm) | 315 mm |
| 12" ADS N-12* | 12" (300 mm) | 8.8" (223 mm) | 400 mm |
| 15" ADS N-12* | 15" (375 mm) | 7.8" (198 mm) | 400 mm |
| 18" ADS N-12* | 18" (450 mm) | 5.8" (147 mm) | 500 mm |

NOTE: ALL DIMENSIONS ARE NOMINAL
*10" - 18" PIPE ENDS REQUIRE FIELD CUT PER DETAIL

Aquabox Installation Guide

Required Materials and Equipment List

- Acceptable fill materials per Table 1
- Nonwoven geotextile fabrics
- Aquabox modules, Cube modules, sidewall grids, top caps, and joints
- ADS pipe and fittings

Note: Aquabox module pallets are 2.5' x 5' x 8.5' (0.8 x 1.5 x 2.6 m) and weigh approximately 1600 lbs. (730 kg) and the Cube pallets are 2.5' x 5' x 8.5' (0.8 x 1.5 x 2.6 m) and weigh approximately 600 lbs. (300 kg). Unloading modules requires 72" (1.8 m) (min.) forks and/or tie downs (straps, chains, etc).

Important Notes:

- A. This installation guide provides the minimum requirements for proper installation of Aquabox. Nonadherence to this guide may result in damage to modules during installation. Replacement of damaged modules during or after backfilling is costly and very time consuming. It is recommended that all installers are familiar with this guide, and that the contractor inspects the modules for distortion, damage and system integrity as work progresses.
- B. Care should be taken in the handling of Aquabox modules and other components. Avoid dropping, prying or excessive force on the modules during removal from pallet and initial placement.

Requirements for System Installation



Excavate bed and prepare subgrade per engineer's plans. Plans and specifications should include Best Management Practices (BMPs) to deter contamination of open pits during construction.



Place nonwoven geotextile over prepared soils and up excavation walls. Install underdrains if required.

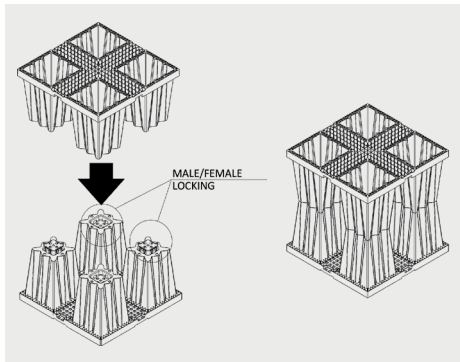


Place clean, crushed, angular stone foundation 6" (150 mm) min. Compact to achieve a flat surface.

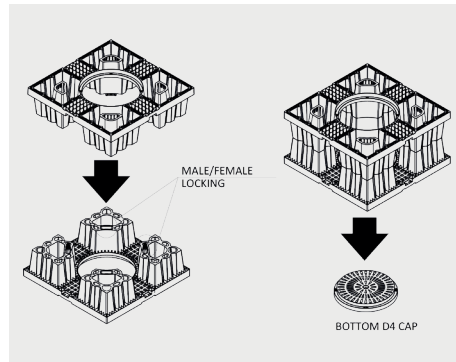


Place a second layer of nonwoven geotextile over the base stone layer and up the excavation walls. This layer of geotextile will wrap the Aquabox module and prevent stone from entering the system

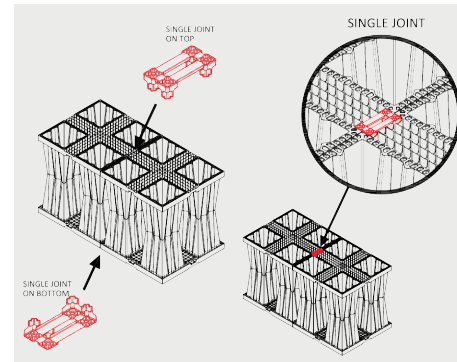
Assembly of Aquabox Modules and Accessories



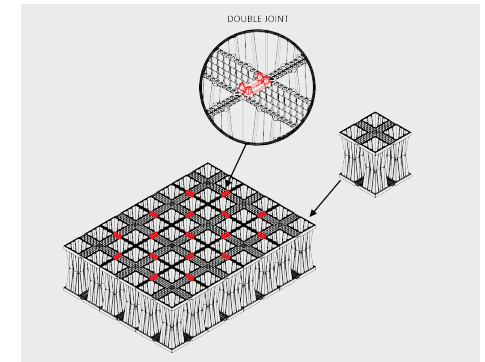
Each Aquabox module consists of two halves. Assemble the modules by laying one half on the ground, placing the other half on top, and applying some pressure to seat the connection. Assembly can be done inside or outside of the excavation.



The Aquabox Cube module is assembled in the same manner as the full unit. Cube modules can be used to create half-height layers or for inspection shafts within the system. Cube modules on the bottom layer of the system must have the D4 cap installed on the bottom face.



Modules are linked using joints. The single joints are used on the top and bottom surface of the assembly. Joints are inserted into the corresponding slots on each module



For multi-layer systems, the double joint is used to link modules in between layers. Note: the single joint is still used on the top and bottom faces in these configurations.

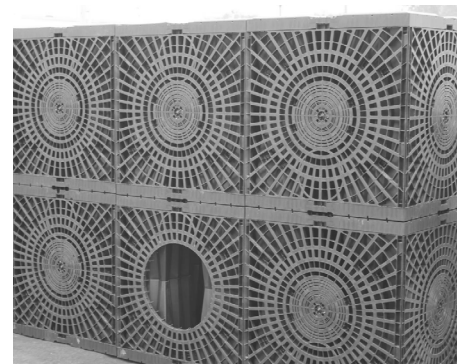
Assembly of the Aquabox System



Begin placing modules at one corner of the system and work across. For ease of access, follow one row behind with installation the upper layers of modules. Place single/double joints and Cube module as required by the system configuration.



Place top caps and single joints on the upper surface of the system as installation progresses. The corner of the top caps must be cut to cover any Cube modules

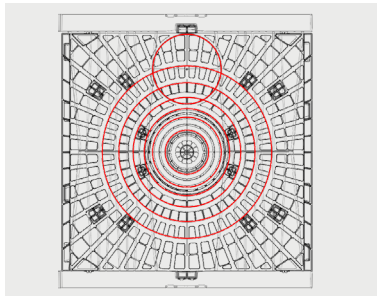


Follow with installation of the Aquabox and Cube side panels. Where inlet/outlet connections are planned, cut the side panel to the appropriate size before installing it on the Aquabox system.

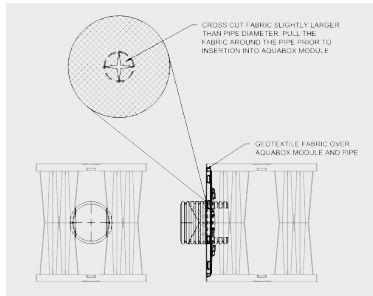


Wrap the completed assembly with the innermost layer of nonwoven geotextile. Cut locations in the geotextile for inspection ports and side connections.

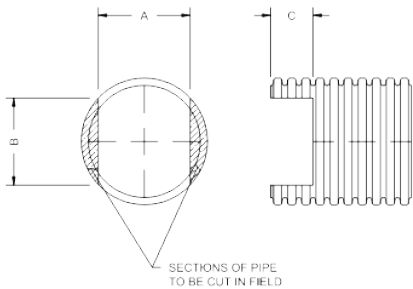
Making Side Connections



Side panels can be cut to allow connections of 4" (100 mm) up to 18" (450 mm) corrugated pipe. Side panels should be cut before being installed on the modules.



At the location of the pipe connection, cross-cut the geotextile to slightly larger than the pipe diameter. Connecting pipes should be inserted at least 6" (150 mm) into the side panel.

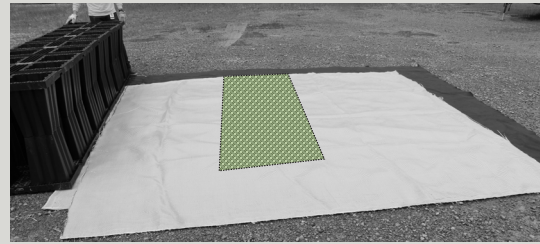


Pipe connection of 10" (250 mm) and larger require field cuts to allow full insertion. Cut the end of the pipe as detailed above.

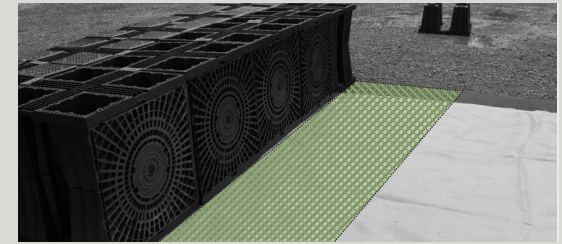
| Pipe Size | A | B | C |
|--------------|----------------|-----------------|----------------|
| 10" (250 mm) | 8.25" (203 mm) | 7.75" (197 mm) | 4 Corrugations |
| 12" (300 mm) | 7.75" (197 mm) | 12.00" (300 mm) | 3 Corrugations |
| 15" (375 mm) | 7.50" (190 mm) | 16.00" (406 mm) | 3 Corrugations |
| 18" (450 mm) | 7.25" (184 mm) | 20.00" (508 mm) | 2 Corrugations |



Installation of Isolator Row



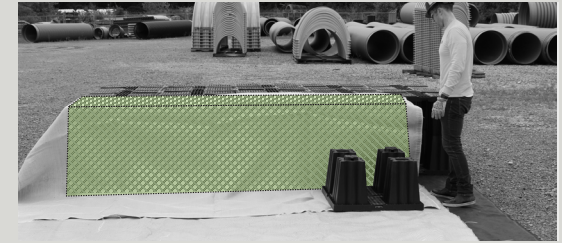
1) Roll out one piece of ADS Plus geotextile below where the Isolator Row will be installed. After installing the modules two rows away from the Isolator Row, roll out a second layer of ADS Plus abutting the modules.



2) Install the next row of modules, placing on top of both layer of ADS Plus geotextile. This row requires side panels be installed on the module sides facing the Isolator Row to the Isolator Row.



3) Fold the upper layer of ADS Plus geotextile back over the previously installed modules. Then install the modules of the Isolator Row. If the Isolator Row will terminate in the middle of the bed, do not install modules beyond the end of the Isolator Row.



4) Once the the Isolator Row modules are installed (including top caps and joints), fold the upper layer of ADS Plus geotextile back over the top of the Isolator Row. Pull the geotextile down the other side of the row, removing slack. Begin installing the next row of modules to hold the geotextile in place.

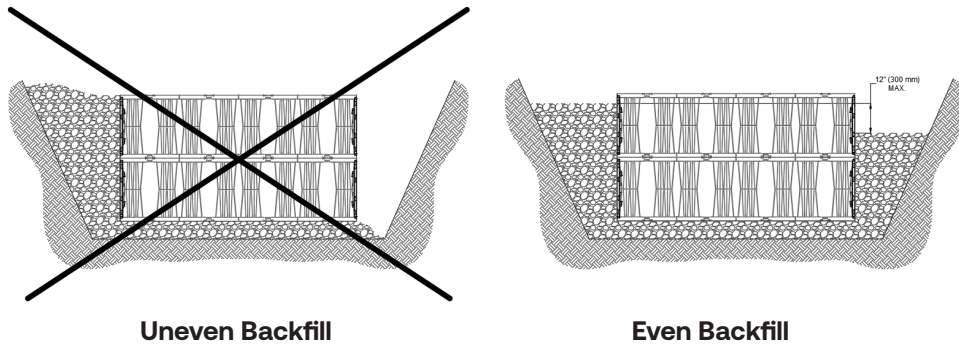


5) As the next row of modules are assembled, install side panels on the module sides facing the Isolator Row. Do not install joints between the Isolator Row modules and this abutting row.



6) For Isolator Rows that end within the bed, install the module outside the end of the row with a side panel facing the Isolator Row. Place a piece of ADS 601 geotextile between the Isolator Row and this final module.

Backfill of Modules – Embedment Stone



Backfill around the the system evenly. Backfill heights should not differ by more than 12" (300 mm) around the perimeter. The space between the system and the edge of the excavation should be filled entirely with each lift.



Backfill evenly around the perimeter until embedment stone reaches the top of the modules and a minimum 6" (150 mm) of cover stone is in place. The recommended backfill method is with an excavator from outside the bed.

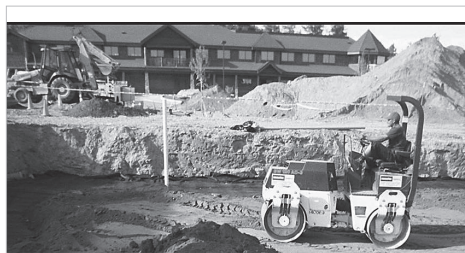
Final Backfill of Modules – Fill Material



1) Only after modules have been backfilled with a minimum 6" (150 mm) of cover stone on top of modules can skid loaders and small LGP dozers be used to final grade cover stone and backfill material in accordance with ground pressure limits in Table 2.



2) Install nonwoven geotextile over stone. Geotextile must overlap 24" (600 mm) where edges meet.



3) Compact at 18" (450 mm) of fill.

Figure 1- Inspection Port Detail

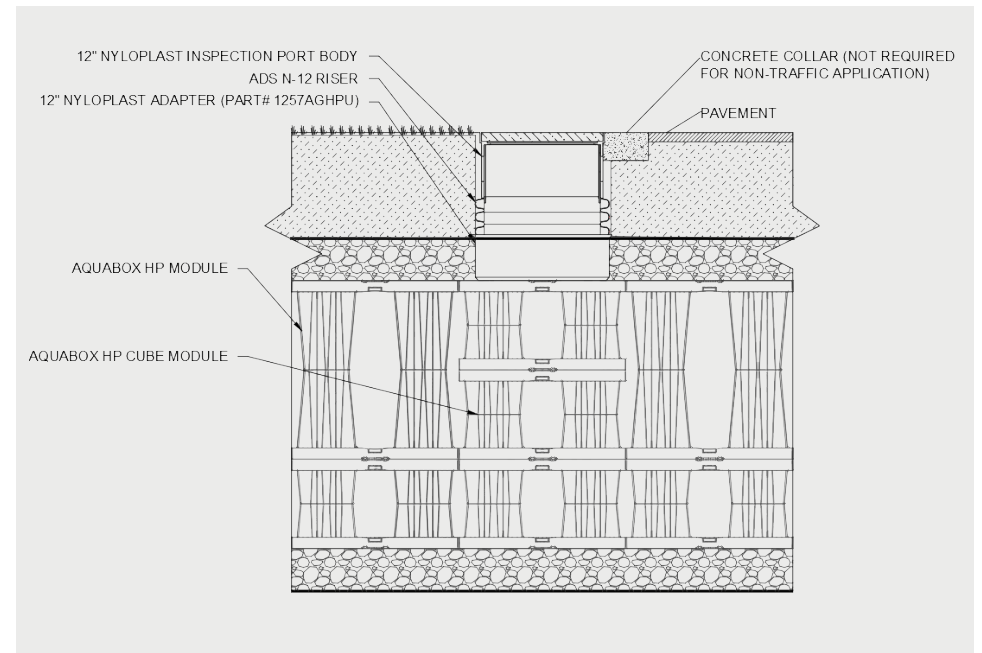
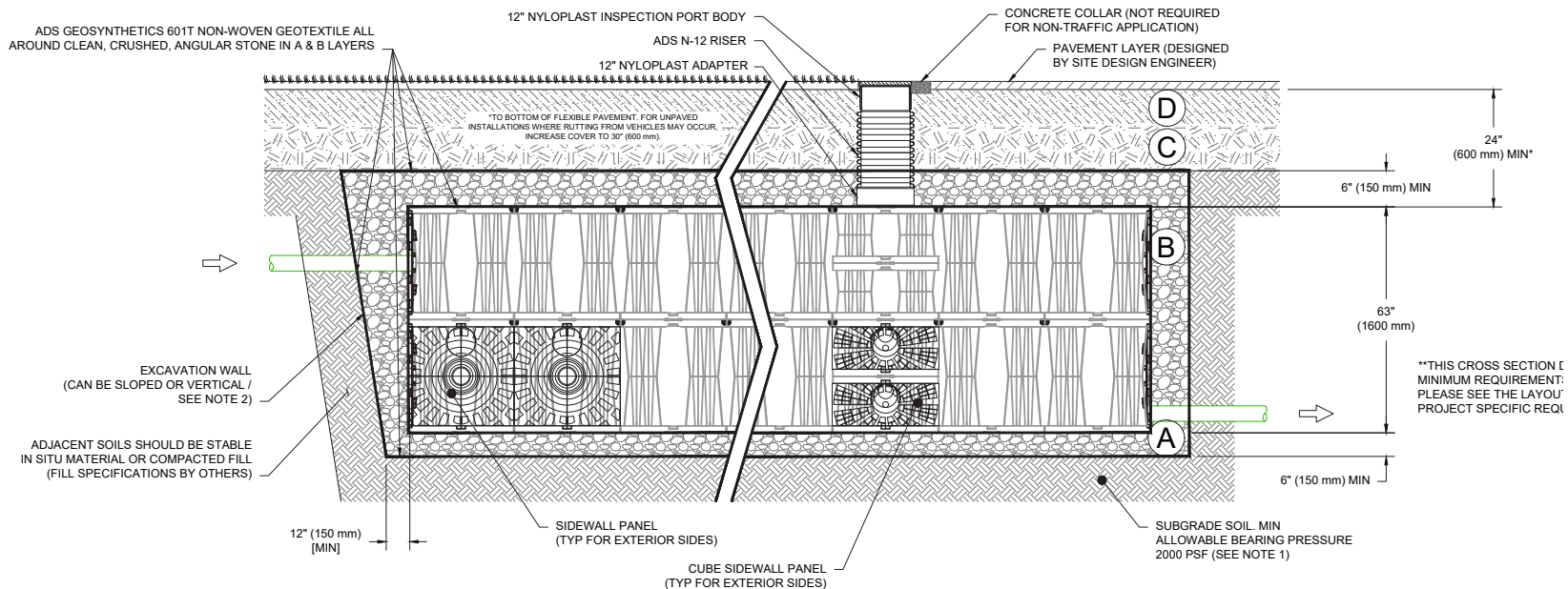


Table 1- Acceptable Fill Materials

| Material Location | Description | AASHTO M43 Designation ¹ | Compaction/Density Requirement |
|--|--|---|---|
| D Final Fill: Fill material for layer 'D' starts from the top of the 'C' layer to the bottom of flexible pavement or unpaved finished grade above. Note that the pavement subbase may be part of the 'D' layer. | Any soil/rock materials, native soils or per engineer's plans. Check plans for pavement subgrade requirements. | N/A | Prepare per site design engineer's plans. Paved installations may have stringent material and preparation requirements. |
| C Initial Fill: Fill Material for layer 'C' starts from the top of the embedment stone ('B' layer) to 24" (600 mm) above the top of the module. Note that pavement subbase may be part of the 'C' layer. | Granular well-graded soil/ aggregate mixtures, <35% fines or processed aggregate. Most pavement subbase materials can be used in lieu of this layer. | AASHTO M145 ¹ A-1, A-2-4, A-3 or AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 | Begin compaction after 12" (300 mm) of material over the Aquabox modules is reached. Compact additional layers in 6" (150 mm) max. lifts to a min. 95% Proctor density for well graded material and 95% relative density for processed aggregate materials. Roller gross vehicle weight not to exceed 12,000 lbs (53 kN). Dynamic force not to exceed 20,000 lbs (89 kN). |
| B Perimeter Stone: Fill surrounding the Aquabox modules from the foundation stone ('A' layer) to the 'C' layer above. | Clean, crushed, angular stone | AASHTO M43 ¹ 467, 5, 56, 57 | No compaction required. |
| A Foundation Stone: Fill below Aquabox modules from the subgrade up to the bottom of the Aquabox module. | Clean, crushed, angular stone | AASHTO M43 ¹ 467, 5, 56, 57 | Plate compact or roll to achieve a flat surface. ^{2,3} |

- Please Note:**
- The listed AASHTO designations are for gradations only. The stone must also be clean, crushed, angular. For example, a specification for #57 stone would state: "clean, crushed, angular no. 57 (AASHTO M43) stone".
 - ADS Aquabox compaction requirements are met for 'A' location materials when placed and compacted in 6" (150 mm) (max) lifts using two full coverages with a vibratory compactor.
 - Where infiltration surfaces may be comprised by compaction, for standard design load conditions, a flat surface may be achieved by raking or dragging without compaction equipment. For special load designs, contact ADS for compaction requirements.
 - Once layer 'C' is placed, any soil/material can be placed in layer 'D' up to the finished grade. Most pavement subbase soils can be used to replace the material requirements of layer 'C' or 'D' at the site design engineer's discretion.

Figure 2 - Fill Material Locations



Notes:

1. 36" (900 mm) of stabilized cover materials over the modules is recommended during the construction phase if general construction activities, such as full dump truck travel and dumping, are to occur over the bed.
2. During paving operations, dump truck axle loads on 24" (600mm) of cover may be necessary. Precautions should be taken to avoid rutting of the road base layer, to ensure that compaction requirements have been met, and that a minimum of 24" (600mm) of cover exists over the modules. Contact ADS for additional guidance on allowable axle loads during paving.
3. Ground pressure for track dozers is the vehicle operating weight divided by total ground contact area for both tracks. Excavators will exert higher ground pressures based on loaded bucket weight and boom extension.
4. Mini-excavators (<8,000lbs/3,628 kg) can be used with at least 6" (150 mm) of stone over the modules and are limited by the maximum ground pressures in Table 2 based on a full bucket at maximum boom extension.
5. ADS does not require compaction of initial fill at 12" (300 mm) of cover. However, requirements by others for 6" (150 mm) lifts may necessitate the use of small compactors at 12" (300 mm) of cover.
6. Storage of materials such as construction materials, equipment, spoils, etc. should not be located over the Aquabox system. The use of equipment over the Aquabox system not covered in Table 2 (ex. soil mixing equipment, cranes, etc) is limited. Please contact ADS for more information.
7. Allowable track loads based on vehicle travel only. Excavators shall not operate on module beds until the total backfill reaches 3 feet (900 mm) over the entire bed.

Call ADS at **800-821-6710** for technical and product information or visit adspipe.com



Table 2 - Maximum Allowable Construction Vehicle Loads⁶

| Material Location | Fill Depth over Chambers in. (mm) | Max Allowable Wheel Loads | | Max Allowable Track Loads ⁶ | | Max Allowable Roller Loads Max Drum Weight or Dynamic Force lbs (kN) |
|-------------------------|-----------------------------------|-----------------------------------|-------------------------------------|--|--|--|
| | | Max Axle Load for Trucks lbs (kN) | Max Wheel Load for Loaders lbs (kN) | Track Width in. (mm) | Max Ground Pressure psf (kPa) | |
| D Final Fill Material | 36" (900) Compacted | 32,000 (142) | 16,000 (71) | 12" (305) | 3880 (186) | 38,000 (169) |
| | | | | 18" (457) | 2640 (126) | |
| | | | | 24" (610) | 2040 (97) | |
| | | | | 30" (762) | 1690 (81) | |
| | | | | 36" (914) | 1470 (70) | |
| C Initial Fill Material | 24" (600) Compacted | 32,000 (142) | 16,000 (71) | 12" (305) | 2690 (128) | 20,000 (89) |
| | | | | 18" (457) | 1880 (90) | |
| | | | | 24" (610) | 1490 (71) | |
| | | | | 30" (762) | 1280 (61) | |
| | | | | 36" (914) | 1150 (55) | |
| | 24" (600) Loose/Dumped | 32,000 (142) | 16,000 (71) | 12" (305) | 2390 (114) | 20,000 (89) Roller gross vehicle weight not to exceed 12,000 lbs. (53 kN) |
| | | | | 18" (457) | 1700 (81) | |
| | | | | 24" (610) | 1370 (65) | |
| | | | | 30" (762) | 1190 (57) | |
| | 18" (450) | 32,000 (142) | 16,000 (71) | 12" (305) | 2110 (101) | 20,000 (89) Roller gross vehicle weight not to exceed 12,000 lbs. (53 kN) |
| | | | | 18" (457) | 1510 (72) | |
| | | | | 24" (610) | 1250 (59) | |
| 30" (762) | | | | 1100 (52) | | |
| 12" (300) | 16,000 (71) | NOT ALLOWED | 12" (305) | 1540 (74) | 20,000 (89) Roller gross vehicle weight not to exceed 12,000 lbs. (53 kN) | |
| | | | 18" (457) | 1190 (57) | | |
| | | | 24" (610) | 1010 (48) | | |
| | | | 30" (762) | 910 (43) | | |
| B Perimeter Stone | 6" (150) | 8,000 (35) | NOT ALLOWED | 12" (305) | 1070 (51) | NOT ALLOWED |
| | | | | 18" (457) | 900 (43) | |
| | | | | 24" (610) | 800 (38) | |
| | | | | 30" (762) | 760 (36) | |
| | | | | 36" (914) | 720 (34) | |

Table 3 - Placement Methods and Descriptions

| Material Location | Placement Methods/ Restrictions | Wheel Load Restrictions | Track Load Restrictions | Roller Load Restrictions |
|-------------------------|---|---|--|--|
| | | See Table 2 for Maximum Construction Loads | | |
| D Final Fill Material | A variety of placement methods may be used. All construction loads must not exceed the maximum limits in Table 2. | 36" (900 mm) minimum cover required for dump trucks to dump over modules. | 36" (900 mm) minimum cover required for excavators to operate on the modules ⁴ | Roller travel only until 36" (900 mm) compacted cover is reached. |
| C Initial Fill Material | Excavator positioned off bed recommended. Small excavator allowed over modules. Small dozer allowed. | Asphalt can be dumped into paver when compacted pavement subbase reaches 24" (600 mm) above top of modules. | Small LGP track dozers & skid loaders allowed to grade cover stone with at least 12" (300 mm) stone under tracks at all times. | Use dynamic force of roller only after compacted fill depth reaches 18" (450 mm) over modules. |
| B Perimeter Stone | No equipment allowed on bare modules. Use excavator or stone conveyor positioned off bed or on foundation stone to evenly fill around all modules to at least 6" (150 mm) above top of the modules. | No wheel loads allowed. Material must be placed outside the limits of the module bed. | Only low-pressure tracked equipment allowed. | No rollers allowed. |
| A Foundation Stone | No Aquabox restrictions. Contractor responsible for any conditions or requirements by others relative to subgrade bearing capacity, dewatering or protection of subgrade. | | | |

Aquabox O&M Manual



Aquabox Isolator[®] Row

Regular inspection and maintenance are essential to ensure a properly functioning stormwater system. The Aquabox Isolator Row is a technique to inexpensively enhance Total Suspended Solids (TSS) removal with easy access for inspection and maintenance.

The Aquabox Isolator Row

The Aquabox Isolator Row is a row of Aquabox modules wrapped in filter fabric and connected to a closely located manhole for easy access. The fabric lined modules provide for sediment settling and filtration as stormwater rises in the Isolator Row and passes through the filter fabric. The open structure of the modules allow stormwater to flow out the bottom and sides of the modules. Sediments are captured in the Aquabox Isolator Row, protecting the storage volume in the rest of the modules from sediment accumulation.

ADS Plus fabric is used to wrap the Aquabox Isolator Row. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting.

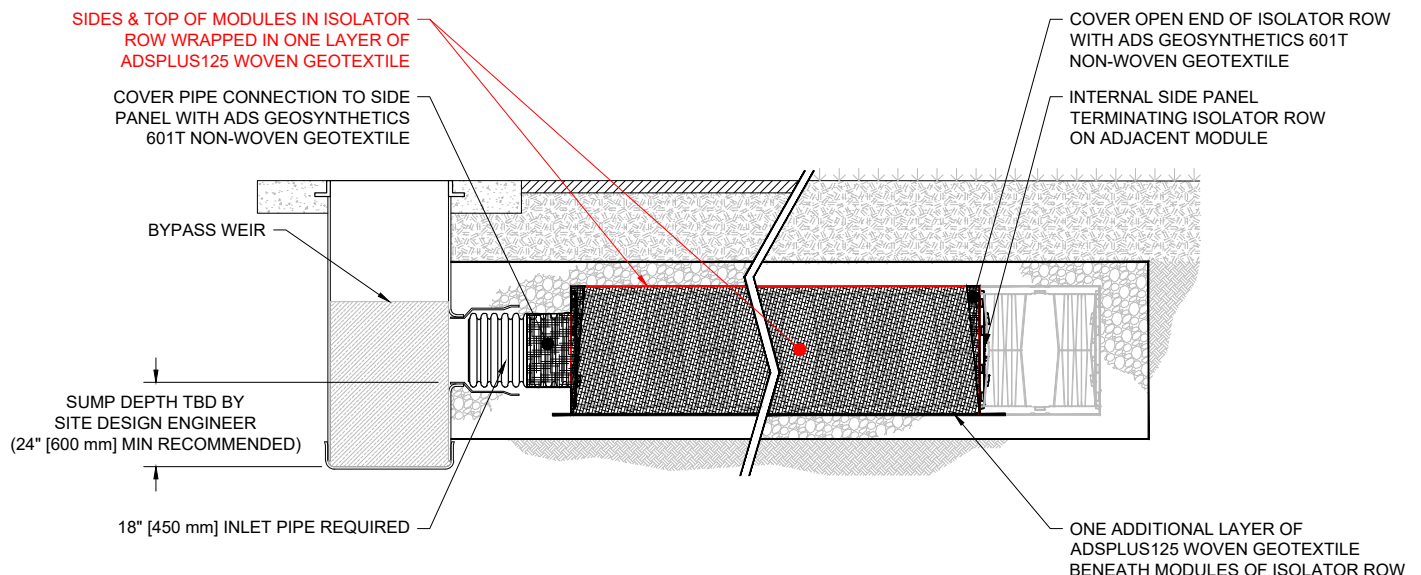
The Aquabox Isolator Row is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Aquabox Isolator Row and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Aquabox Isolator Row bypass through a manifold to the other modules. This is achieved with an elevated bypass manifold or a high-flow weir. After stormwater flows through



the Aquabox Isolator Row and into the rest of the Aquabox system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Aquabox Isolator Row may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, ADS recommends using the Aquabox Isolator Row to minimize maintenance requirements and maintenance costs.

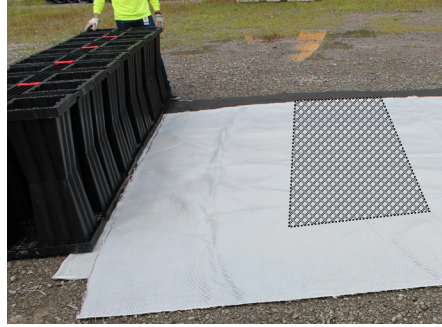
Aquabox Isolator Row Standard Cross-Section



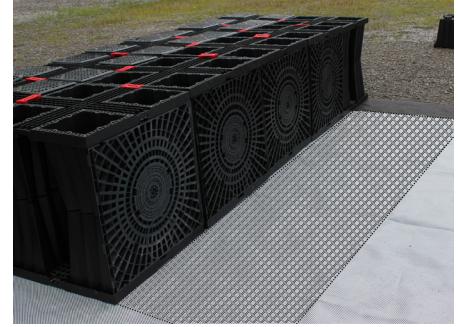
Installing the Aquabox Isolator[®] Row



Step 1: Roll out one piece of ADS Plus geotextile in the approximate area of the Isolator Row. The geotextile will be placed directly on the ADS 601 non-woven.



Step 2: Continue assembling the system until the modules are two rows away from the Isolator Row. Then roll out a second piece of ADS Plus the exact length of the Isolator Row. Place the edge this geotextile against the modules.



Step 3: Install the next row of modules, placing them on top of the ADS Plus geotextile. This row requires side panels to be installed on the module sides facing the Isolator Row.



Step 4: Fold the upper layer of ADS Plus geotextile back over the top of the previously installed modules



Step 5: Install the modules of the Isolator Row, including top caps and joints. Note: only single joints should be used between the Isolator Row modules and no joints should be used between the Isolator Row and adjacent modules.



Step 6: Once the Isolator Row modules are installed, fold the ADS Plus geotextile back over the top of the Isolator Row. Pull the geotextile down the other side of the row, removing slack. Begin installing the next row of modules to hold the geotextile in place.



Step 7: As the next row of modules are assembled, install side panels on the module sides facing the Isolator Row. Note: do not use joints between the Isolator Row modules and this row.



Step 8: For Isolator Rows that end within the bed, install the module outside the end of the row with a side panel facing the Isolator Row. Place a piece of ADS 601 non-woven geotextile between the Isolator Row and this final module.



Step 9: The Isolator Row is now completely installed. The geotextile wrap traps sediment in the Isolator Row modules for easy maintenance. Proceed with the rest of the system install.

Aquabox Isolator Row Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, ADS recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row should be inspected via the connecting pipe from the upstream structure. Mirrors on poles or cameras may be used to avoid a confined space entry. Inspection ports (optional) may be used for easy access to the system from the surface.

When the average depth of sediment exceeds 3" (75 mm) throughout the Isolator Row, clean-out should be performed.

Maintenance

The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out all modules of the storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entry.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Rear facing jets with an effective spread of at least 45° are best. The minimum clear span within the Aquabox modules is 6.5" (162.5 mm)--please ensure cleaning equipment does not exceed this width. ADS recommends a maximum nozzle pressure of 1750 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row lengths up to 150' (46 m) with a structure at one end, or up to 300' (91 m) with a structure at both ends.



PURCHASE ORDER TERMS AND CONDITIONS

1. **Order Documentation and Parties.** These Purchase Order Terms and Conditions (these "Terms and Conditions") are intended to be referenced and incorporated in a Purchase Order between the parties named in the Purchase Order to together comprise the Order which is the agreement between the parties with respect to the purchase and sale of the goods and/or services referenced in these Terms and Conditions. Accordingly, as used in these Terms and Conditions the term "Order" means any Purchase Order which references these Terms and Conditions together with these Terms and Conditions. In the event of any conflict in the Order between the provisions of the Purchase Order and the provisions of these Terms and Conditions, the provisions of the Purchase Order will prevail and apply for the Order. The parties to the Order are the person who is identified in the Purchase Order as the person issuing the Purchase Order ("Buyer") and the other person who is identified in the Purchase Order as the person who is the seller or supplier ("Seller").
 2. **Submission and Acceptance of Order.** Once the Order has been submitted by Buyer, Seller shall be bound by the Order when it returns an acknowledgment or written confirmation of the Purchase Order to Buyer, when it presents Buyer with an invoice related to the Purchase Order or when it ships or delivers to Buyer any of the goods referenced in the Purchase Order ("Goods") and/or performs any of the services referenced in the Purchase Order ("Services"). No terms or conditions which add to, vary from or conflict with, or are otherwise additional to or different from, the terms and conditions of the Order that are proposed by Seller or included in any communication (whether in written, oral or electronic form) by Seller to Buyer in connection with the subject matter of the Order will be or become part of the Order, **and any and all such additional or different terms and conditions, whether or not they materially alter the Order, are hereby objected to and rejected by Buyer**, without any further notice of such objection and rejection. Any such proposed terms or conditions shall be void and the Order shall constitute the complete and exclusive statement of the entire agreement between Buyer and Seller and may be modified only by a written instrument executed by authorized representatives of both Buyer and Seller. If the Order has been issued by Buyer in response to an offer by Seller, and if any terms or conditions in the Order are additional to or different from any terms or conditions of such offer, then the issuance of the Order by Buyer shall constitute an acceptance of such offer subject to the express condition that Seller assent to such additional and different terms and conditions in the Order and acknowledge that the Order constitutes the complete and exclusive statement of the entire agreement between Buyer and Seller with respect to the subject matter of the Order and the subject matter of such offer together; and Seller shall be deemed to have so assented and so acknowledged unless Seller notifies Buyer to the contrary in writing within ten (10) days of receipt of the Order. Such notice requirement shall not be satisfied by Seller presenting Buyer with alternative pre-printed terms and conditions related to the subject matter of the Order, whether via a quotation, acknowledgment, confirmation, invoice or otherwise.
 3. **Performance Date.** Performance by delivery or otherwise of Goods and/or Services must be made on the delivery or other performance date specified in the Order (the "Performance Date") in accordance with the terms thereof specified in the Order. Time is of the essence with respect to performance under the Order. Shipments of Goods or provision of Services in greater or lesser quantity than ordered in the Order may be returned or refused at Seller's expense, unless advance written consent thereof is issued by Buyer. If Seller's performance with respect to Goods and/or Services fails to meet the Performance Date or any or all Goods and/or Services covered by the Order are not shipped or provided, being manufactured or generated at a rate, or commenced in time to meet, or can otherwise be reasonably expected to meet, the required Performance Date, Buyer, at its option, without limiting its other rights or remedies under the Order or at law or equity, may either (a) direct expedited routing/delivery and/or overtime work necessary to meet the Performance Date and charge costs incurred thereby to Seller or (b) cancel or postpone delivery or provision of all or part of the Order without charge and/or, at Buyer's option, obtain alternative goods or services from another supplier and cancel the Order to the extent such alternative goods or services are obtained, in each such case without liability under the Order. Goods which are delivered in advance of the Performance Date are delivered at the risk of Seller and may, at Buyer's option, be returned at Seller's expense for delivery on the Performance Date and/or have payment thereof withheld by Buyer until the date on which payment would be due if the Goods were delivered on the Performance Date. In any event, with respect to Goods which are delivered in advance of the Performance Date, any discount period with respect to such Goods will begin to run from the Performance Date and risk of loss with respect thereto (if FOB final destination under the Order) will not pass to Buyer until the Performance Date.
 4. **Excusable Delays.** Neither Buyer nor Seller shall be liable for a performance failure with respect to the Order arising from causes or events beyond its reasonable control occurring without its fault or negligence. In the event that causes or events beyond Seller's reasonable control and without its fault or negligence, including without limitation labor disputes of any kind, prevent Seller from performing its obligations under the Order: (a) Seller shall immediately give notice thereof, including all relevant information with respect thereto, to Buyer; (b) Buyer may, at its option, while such excusable delay is pending, obtain alternative goods or services from another supplier and/or terminate the Order, in each case without liability under the Order; (c) if Seller provides Buyer a rebate or discount for purchases of such Goods or Services subject to the Order based on volume, any volumes of alternative goods or services purchased by Buyer pursuant to the foregoing clause (b) shall be counted with regard thereto; and (d) if Seller is unable for any reason to supply Buyer's total demands for Goods or Services under the Order, then, at Buyer's option, Seller must furnish or provide its available supply of such Goods or Services to Buyer on a percentage basis that is no less favorable than is provided to any other purchaser or Seller-affiliated internal user of such Goods or Services of Seller.
 5. **Buyer Rights.** Buyer reserves the right to make changes with respect to any or all of the following: (a) specifications, samples, instructions, data, drawings or other descriptions set forth or incorporated in the Order as to Goods to be manufactured or Services to be provided for Buyer; (b) methods of shipment, packaging, boxing, crating, packing, handling, storage, marking, routing, transportation or installation; and (c) place and time of delivery or other performance. If any such change causes an increase or decrease in the cost of, or the time required for, Seller's performance, an equitable adjustment mutually agreed by Buyer and Seller will be made in the Order's price or delivery performance schedule, or both. Any claim by Seller related to any adjustment to the Order under this Paragraph 5 of these Terms and Conditions is waived unless objected to in writing by Seller to Buyer within ten (10) days from receipt by Seller of a Purchase Order Change Notice issued by Buyer regarding the change to the Order. Changes to the Order are not binding on Buyer unless evidenced by a Purchase Order Change Notice issued by and signed by an authorized representative of Buyer.
 6. **Price.** The prices stated on the Order apply to all shipments of Goods made or Services rendered under the Order. Buyer shall have no obligation to honor invoices for Goods or Services at any increased prices unless any such increase shall have been confirmed in a written instrument executed by an authorized representative of Buyer and delivered by Buyer to Seller. If the price of any Goods or Services is not stated in the Order, the price for such Goods or Services will be the price last quoted by Seller to Buyer for such Goods or Services, or the prevailing market rate at the time of the Order, whichever is lower. No charges of any kind not stated on the Order will be allowed unless specifically agreed to in a written instrument executed by an authorized representative of Buyer and delivered by Buyer to Seller. All payments of Buyer under the Order are made conditional upon acceptance by Buyer of the Goods or Services and shall be subject to adjustment in accordance with Buyer's rights and remedies under the Order and at law or in equity for failure of Seller to meet the requirements of the Order.
 7. **Competitive Pricing.** Notwithstanding any provision of the Order to the contrary, if Buyer is offered the same or similar goods and/or services of equal quality and like quantity to Goods and/or Services being furnished under the Order at a price lower than that in effect under the Order, upon satisfactory proof thereof and with fifteen (15) days prior written notice to Seller, Seller shall either (a) meet such lower price(s) or (b) release Buyer to purchase such same or similar goods and/or services from parties offering them at such lower price(s) for the period during which Seller does not meet such lower price(s). If Seller provides Buyer a rebate or discount for purchases of such Goods or Services subject to the Order based on volume, any volumes of alternative goods or services purchased by Buyer pursuant to the foregoing clause (b) shall be counted with regard thereto.
 8. **Title and Warranties.** Seller will convey good title, free and clear of any liens or other adverse claims, to all Goods and/or Services provided under the Order, and warrants that all such Goods and Services: (a) will be furnished in strict accordance with the provisions of the Order; (b) will conform to any specifications, samples, instructions, data, drawings or other descriptions incorporated in the Order or otherwise furnished by Buyer; (c) will conform to industry standards and all applicable federal, state and local laws, regulations, rulings, orders and other legal requirements; (d) will be merchantable and free from any defect in design, material or workmanship; and (e) will be fit and sufficient for the purposes intended. Seller additionally warrants that no federal, state or local law, regulation, ruling, order or other legal requirement has been violated in the manufacture, transportation, installation, delivery or sale of the Goods or the performance of the Services covered by the Order. Buyer's approval of any specifications, samples, instructions, data, drawings or other descriptions prepared or provided by Seller will not relieve Seller of the foregoing obligations or its other obligations under the Order. In addition to any other rights or remedies Buyer may have, Buyer may utilize the remedies set forth in Paragraph 9 of these Terms and Conditions for defective, deficient or otherwise nonconforming Goods or Services with respect to Goods and/or Services not conforming to any of the foregoing warranties, whether or not such Goods and/or Services shall have been previously accepted by Buyer or any prior payments shall have been made by Buyer with respect thereto. Seller agrees that the foregoing warranties shall survive delivery, acceptance, inspection, test and use of, and payment for, the Goods and/or Services provided under the Order and shall inure to the benefit of Buyer and its customers.
 9. **Inspection.** During manufacture or performance, and/or within thirty (30) days after delivery of Goods and/or Services (notwithstanding any payment therefor during such thirty (30) day period, which payment shall not be deemed acceptance thereof), Buyer may inspect any Goods, related raw materials, work in process, Services or the results of the performance of Services which have been or will be manufactured, worked upon, produced, provided, performed or sold with respect to the Order. If, in Buyer's judgment, any of the Goods or Services are defective, deficient or otherwise not in conformity with the requirements of the Order, Buyer, in addition to its other rights and remedies, may: (a) reject the same for full credit; (b) retain the same and remedy any defects, deficiencies or nonconformities at Seller's expense; or (c) require prompt correction, replacement or reperformance of the same by Seller or Buyer's designee at Seller's expense with any such corrected, replaced or reperfomed Goods and/or Services being subject to the same warranties as provided in Paragraph 8 of these Terms and Conditions. Any Goods rejected by Buyer shall be at Seller's risk and expense and shall not thereafter be tendered to Buyer by Seller for acceptance without Buyer's advance written consent. Items rejected shall be removed promptly by Seller at its expense and at its risk. Any shipment, packaging, boxing, crating, packing, handling, storage, marking, routing, removal and transportation costs, charges and expenses incident to Buyer's exercise of its rights or remedies under the Order will be charged to Seller's account. Neither anything in the Order nor any exercise of Buyer's inspection rights shall release Seller from the obligation to make full and adequate testing and inspection of Goods and Services sold to Buyer under the Order. In addition to the rights and remedies set forth in these Terms and Conditions, Buyer retains all rights and remedies available to it at law or in equity. Final acceptance shall not be conclusive with respect to latent defects, fraud or gross mistakes or with respect to Buyer's rights and remedies under Paragraph 8 of these Terms and Conditions.
 10. **Services.** If the Order calls for Services to be performed by Seller, all Services performed and all materials used in connection therewith shall be at the risk and expense of and shall be replaced by Seller in the event of any damage or destruction thereof prior to delivery to and acceptance by Buyer. If the Order calls for Services to be performed by Seller upon any premises owned or controlled by Buyer and/or Buyer's customers, Seller will keep the premises and its work product free and clear of all mechanics' liens and will furnish Buyer with all certificates and waivers necessary to keep the premises and its work product free and clear of all mechanics' liens as provided by law. Whenever any property belonging to Buyer or Buyer's customers is in the possession of Seller or Seller's suppliers, Seller shall be deemed an insurer thereof and shall be responsible for its safe return to Buyer. Seller will indemnify, defend and hold harmless Buyer and its affiliated companies and their respective customers, directors, officers, managers, employees and agents (collectively, "Buyer Indemnified Parties") against and from all such claims, demands, damages, claims, judgments, liabilities, losses, costs of settlement, attorney's fees, expenses and other costs and damages ("Adverse Consequences") made or brought under the workers' compensation laws of the state in which any such Services are performed under the Order or under any applicable federal compensation laws and will if requested furnish to Buyer a certificate showing that Seller is in compliance with the workers' compensation laws of such state and with any applicable federal compensation laws. Seller will also indemnify, defend and hold harmless Buyer and/or Buyer Indemnified Parties against and from all Adverse Consequences for any damage to property or injury to or death of persons caused by Seller or its affiliated companies or their respective directors, officers, managers, employees, subcontractors and agents in the performance of the Order.
 11. **Insurance.** Seller shall procure at its own cost and keep in force the following insurance, satisfactory to Buyer as to form and limits of liability, with a company rated "A-VII" or better by A.M. Best, until completion and final payment hereunder:
 - (a) If the Order calls for Services to be performed by Seller upon any premises owned or controlled by Buyer and/or Buyer's customers:
 - (i) Workers' Compensation insurance, as required by the workers' compensation laws of the state in which the Services are being performed, with a minimum insurance of \$500,000 per person.
 - (ii) Employer's Liability insurance, with minimum insurance of \$500,000 per occurrence.
 - (iii) General Liability and Property Damage insurance, including contractual liability insurance as required to cover liabilities, with minimum insurance requirements of:
 - (a) Bodily Injury Per Person of \$1,000,000;
 - (b) Bodily Injury Per Occurrence of \$2,000,000; and
 - (c) Property Damage Per Occurrence of \$1,000,000.
 - (b) Automobile Liability insurance, with minimum insurance requirements of:
 - (i) Bodily Injury Per Person of \$1,000,000;
 - (ii) Bodily Injury Per Occurrence of \$2,000,000; and
 - (iii) Property Damage Per Occurrence of \$1,000,000.
 - (c) Excess Liability insurance above said Employer's Liability, General Liability and Automobile Liability insurance with a combined single limit for Bodily Injury and Property Damage of not less than \$4,000,000 per occurrence, unless a larger amount is specified elsewhere in the Order.
 - (d) Where work is performed on a Buyer automobile or trailer or any other Buyer property on Seller's premises, Garage Keeper Liability insurance with minimum coverage of \$50,000 per occurrence.
 - (e) In all other cases, General Liability and Property Damage insurance, including contractual liability insurance as required to cover liabilities, and Excess Liability insurance, which together provide minimum coverage of \$1,000,000 per occurrence, unless a larger amount is specified elsewhere in the Order.
- Upon Buyer's written request, Seller shall cause Buyer to be included as an additional insured and include a waiver of subrogation in favor of Buyer under any or all of the applicable policies above. Insurance under the applicable policies above shall be primary to any other insurance, self-insurance or self-retention of Buyer. Buyer's affiliated companies or any other person or entity (without regard to any "other insurance" clauses). Prior to the commencement of any work hereunder, evidence of such insurance, in policy or certificate form, shall be delivered to the representative of Buyer identified in the Purchase Order. Where any part of the Order is performed by a subcontractor of Seller (which subcontracting shall be effected in accordance with Paragraph 22 of these Terms and Conditions), evidence of the foregoing insurance on behalf of such subcontractor similarly shall be provided by Seller to the representative of Buyer identified in the Purchase Order. Seller shall notify the representative of Buyer identified in the Purchase Order in writing in advance of any changes made or proposed with respect to the policies related to the foregoing insurance requirements.
12. **Cancellation.** In addition to any other provisions contained in these Terms and Conditions for the cancellation or termination of the Order, Buyer may cancel the Order, for any reason or no reason (notwithstanding the existence with respect to Seller of any of the causes or events specified in Paragraph 3 of these Terms and Conditions), in whole or in part, by written notice to Seller on the condition that Buyer pay to Seller the actual net cost Seller incurred in good faith in connection with the Order prior to Seller's receipt of the cancellation notice; provided, however, that in no event shall Buyer be liable for Seller's commitments or production arrangements in excess of the amount, or in advance of the time, necessary to satisfy the Order on the Performance Date.
13. **Packing.** No charges for shipment, packaging, boxing, crating, packing, handling, storage, marking, routing or transportation will be chargeable to Buyer without the specific advance written consent of Buyer. Seller will pack Goods in accordance with Buyer's instructions and include a copy of the packing slip with each shipment or each bill of lading indicating, as applicable, the part number and quantity of pieces shipped for each part. Seller will reimburse Buyer for all Adverse Consequences incurred as a result of improper shipment, packaging, boxing, crating, packing, handling, storage, marking, routing or transportation.
14. **Labeling.** Seller shall cause Buyer's purchase order number for the Order (the "PO Number") to appear conspicuously on each package, box or other type of container for Goods. In the event such PO Number does not appear conspicuously on each such package, box or other type of container, Buyer at its option may return at Seller's expense the Goods delivered in each such improperly marked or unmarked package, box or other type of container.
15. **Documents.** When Goods are invoiced by Seller but shipped by another person or entity, the invoice for such Goods must bear the name of the shipper and the location from which the shipment originated. ALL SHIPMENTS MUST CONTAIN PACKING LISTS SHOWING: PO NUMBER; DESCRIPTION OF GOODS; QUANTITY; AND PART NUMBER. Buyer's determination of the quantity of any Goods shipped without a packing list shall be final.
16. **Routing.** Seller will route shipments as specified, and if not specified shipments are to be routed via the most economical method that will result in such shipments meeting the Performance Date.
17. **Risk of Loss.** Unless the Order expressly provides otherwise, delivery will be FOB final destination, and title to and risk of loss of Goods remains with Seller until delivery to a specified unloading facility at the final destination.

18. **Taxes.** Seller's prices shall be exclusive of all federal, state or local sales, use or excise taxes levied upon, or measured by, the sale, the sales price, or use of goods or materials required in the performance of the Order. Seller shall list separately on its invoice any such taxes lawfully applicable to any Goods or Services and payable by Buyer with respect to which Buyer does not furnish to Seller lawful evidence of exemption.
19. **Extras; Substitutions.** No substitution of materials or accessories for Goods shall be made without Buyer's advance written consent. No charges for extras shall be made unless such extras have been ordered in writing by Buyer and the price agreed upon by Buyer and Seller.
20. **Set-Off.** Buyer shall be entitled at all times to set-off any amount owing at any time from Seller to Buyer or any of its affiliated companies against any amount payable at any time by Buyer in connection with the Order.
21. **Nonwaiver.** Any waiver or failure of Buyer to require strict compliance with the provisions of the Order in any respect is not deemed a waiver of Buyer's rights to otherwise insist upon strict compliance with the provisions of the Order or future orders.
22. **Nonassignable.** The Order and monies due under the Order may not be assigned in whole or in part without the advance written consent of Buyer, and any purported assignment without such advance written consent shall be void. Seller shall not subcontract or in any other manner delegate to any other party the performance of any work or the supplying of any Goods or Services under the Order without the advance written consent of Buyer.
23. **Headings.** The headings in these Terms and Conditions are for reference only and shall not in any way affect the meaning or interpretation of the Order.
24. **Rights.** Buyer retains all rights and remedies available to it at law or in equity, in addition to those set forth in these Terms and Conditions.
25. **Default.** In the event Seller (a) is insolvent, (b) makes a general assignment for the benefit of creditors, (c) admits in writing its inability to pay debts as they mature, (d) has a trustee or receiver appointed by any court for it or any substantial part of Seller's assets, (e) has a proceeding instituted under any provision of the Bankruptcy Code or any state insolvency law by or against it which is acquiesced in, or is not dismissed within thirty (30) days, or results in an order for relief under the Bankruptcy Code or any adjudication of insolvency, (f) fails, or appears to be unable, to perform any of its obligations in accordance with the terms of the Order, including meeting the Performance Date, or (g) directly or indirectly undergoes any change in control or other extraordinary transaction without the advance written consent of Buyer, then Buyer may cancel the Order in whole or in part without liability and/or pursue any further rights or remedies available under the Order or at law or in equity. No waiver by Buyer of a breach by Seller of any provision of the Order shall constitute a waiver of any other breach of such provision. All of Buyer's rights and remedies under the Order shall be cumulative and not exclusive.
26. **Indemnification.** Seller shall indemnify, defend and hold harmless Buyer and Buyer Indemnified Parties against and from any and all Adverse Consequences arising out of, or in any way related to: (a) the Order or performance under the Order; (b) any actual or alleged defect in Goods or Services purchased under the Order; (c) the breach of any obligation or warranty under the Order; (d) any actual or alleged infringements of any trademark, patent, trade secret, mask work, copyright or other proprietary right of any third party, or any unfair competition right, related to Goods or Services purchased under the Order; (e) any act or omission of Seller or its affiliated companies or their respective directors, officers, managers, employees, subcontractors or agents; (f) the delivery, condition, use or operation of Goods or Services purchased under the Order, whether such Goods are in the same mode as when delivered under the Order or whether they have been used in the manufacture of, and become part of, equipment, machinery or goods sold by Buyer to third parties; and/or (g) production downtime due to Seller's failure to correctly fulfill the Order on time or failure to route Goods pursuant to the Order. Seller further agrees to, and will assume on behalf of Buyer, upon its demand (without regard to the real or apparent merits of said action), the defense of any court, agency or arbitration action which may be brought against Buyer potentially involving Adverse Consequences which would be subject to indemnification, defense and hold harmless obligations of Seller under the Order. Seller shall be obligated to fulfill its indemnification, defense and hold harmless obligations under the Order regardless of whether any Adverse Consequences result from the sole, concurrent or partial negligence of Buyer.
27. **LIMITATIONS OF BUYER'S LIABILITY; STATUTE OF LIMITATIONS.** IN NO EVENT SHALL BUYER BE LIABLE FOR ANTICIPATED PROFITS OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES WITH RESPECT TO ANY BREACH BY BUYER OR ACTION ON THE PART OF BUYER RELATING TO THE ORDER, BUYER'S LIABILITY ON ANY CLAIM OF ANY KIND FOR ANY LOSS OR DAMAGE ARISING OUT OF, CONNECTED WITH OR RESULTING FROM THE ORDER, OR FROM THE PERFORMANCE OF THE ORDER, ACTIONS TAKEN IN CONNECTION WITH THE ORDER OR BREACH OF THE ORDER, SHALL IN NO CIRCUMSTANCE EXCEED THE PRICE ALLOCABLE TO SUCH GOODS OR SERVICES OR UNIT THEREOF WHICH GIVE RISE TO THE CLAIM. BUYER SHALL NOT IN ANY CIRCUMSTANCE BE LIABLE FOR PENALTIES OR PUNITIVE, EXEMPLARY OR OTHER SIMILAR DAMAGES OF ANY TYPE OR DESCRIPTION, ANY ACTION RESULTING FROM ANY BREACH BY BUYER OR ACT OR OMISSION ON THE PART OF BUYER RELATING TO THE ORDER MUST BE COMMENCED WITHIN ONE (1) YEAR AFTER THE CAUSE OF ACTION HAS ACCRUED.
28. **Independent Contractor.** Regardless and independent of any administrative, judicial or other governmental determination to the contrary, no persons employed by Seller or Seller's contractors or suppliers in connection with manufacture, production, performance or delivery of Goods or Services under the Order shall be held or construed to be Buyer's employees under any federal, state or local law, regulation, ruling, order or other legal requirement (including those dealing with income or social security tax withholding, unemployment or workers' compensation, or any other law dealing with the obligations of an employer to its employees), and Seller shall indemnify, defend and hold harmless Buyer and Buyer Indemnified Parties against and from all taxes, contributions, assessments or other costs or Adverse Consequences imposed by or relating to any such law, regulation, ruling, order or other legal requirement.
29. **Legal Compliance.** In the performance of the Order, Seller shall comply with all applicable federal, state and local laws, regulations, rulings, orders and other legal requirements, and, without limiting the foregoing, shall hold all permits and licenses required for the performance of the Order. As part of Seller's obligations under the foregoing sentence, Seller shall abide by the requirements of 41 CFR 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment qualified individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability.
30. **State Law.** The Order is governed by and shall be construed and enforced in accordance with the laws of the State of Ohio, including the terms of the Uniform Commercial Code as adopted and in effect in the State of Ohio, without regard to conflict of law principles. All actions commenced pursuant to the Order shall be brought in a court of competent jurisdiction residing in the State of Ohio.
31. **Disclosure.** Seller will not advertise, publish or otherwise disclose that Buyer has offered or agreed to purchase Goods or Services from Seller without Buyer's advance written consent. Seller will not, without Buyer's advance written consent, disclose any nonpublic information, including without limitation plans, specifications, samples, instructions, data, drawings, descriptions, confidential information, know-how, discoveries or production methods, furnished (whether in written, oral or electronic form) to Seller by Buyer, or on Buyer's behalf, other than as necessary to personnel of Seller directly involved in filing the Order or to the supplier of goods, materials or services required to complete/fill the Order. Seller shall take appropriate steps to cause any such personnel or other persons to whom such information is or has been disclosed to comply with the same confidentiality obligations as are applicable to Seller under the Order and agrees to enforce the terms of the Order as to such personnel and other persons and to be responsible to Buyer for any failure of such personnel or other persons to abide by the terms of the Order.
32. **Patent and Copyright Indemnification.** Seller represents and warrants that neither Goods or Services furnished under the Order, nor the sale or use of such Goods or Services or the results of the performance of such Services (alone or in combination with the specifications, requirements or intended uses of Buyer), infringe or will infringe upon or violate any trademarks, patents, trade secrets, mask works, copyrights or other proprietary rights of third parties, or any unfair competition right. Seller agrees to indemnify, defend and hold harmless Buyer and Buyer Indemnified Parties against and from any and all Adverse Consequences due or arising from any such infringement or violation or alleged infringement or violation. In addition, in the event the use of any Goods or Services furnished under the Order, or the results of the performance of any such Services, is enjoined due to any such infringement or violation or alleged infringement or violation, Buyer may, at its option, pursue any remedy or remedies available under the Order or at law or in equity, including without limitation requiring Seller to either procure for Buyer the right to continue using such Goods, Services or results of the performance of such Services, modify them so they become non-infringing or remove them and refund the total purchase price thereof.
33. **Patent License.** Seller, as part consideration for the Order and without further cost to Buyer, hereby grants to Buyer an irrevocable, non-exclusive, royalty-free right and license to use, sell, cause to be manufactured and manufacture products embodying any and all inventions and discoveries made, conceived or actually reduced to practice in connection with Seller's performance of the Order, and Seller hereby grants to Buyer a license to repair, rebuild or relocate and have repaired, rebuilt or relocated Goods or the results of the performance of Services purchased by Buyer under the Order. Seller further grants according to the terms of the Order a royalty-free right and license to use any software with Goods or the results of the performance of Services specified in the Order, or Goods or results of the performance of Services themselves if such Goods or results of the performance of Services are software.
34. **Unenforceability.** In the event that any provision in the Order is deemed by a court of competent jurisdiction in a controversy arising under the Order to be unenforceable under either state or federal law, then that provision shall be adjusted to the minimum extent required to be enforceable under such state or federal law.



Drainage



Filtration



Separation

ADS 1601T NONWOVEN GEOTEXTILE SPECIFICATION

Scope

This specification describes ADS 1601T (16.0 oz) nonwoven geotextile.

Filter Fabric Requirements

ADS 1601T (16.0 oz) is a needle-punched nonwoven geotextile made of 100% polypropylene staple fibers, which are formed into a random network for dimensional stability. ADS 1601T (16.0 oz) resists ultraviolet deterioration, rotting, biological degradations, naturally encountered basics and acids. Polypropylene is stable within a pH range of 2 to 13. ADS 1601T (16.0 oz) conforms to the physical property values listed below:

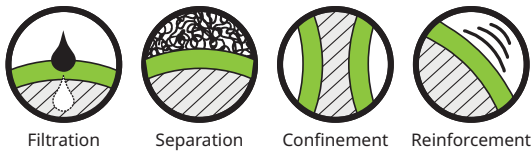
Filter Fabric Properties

| Property | Test Method | Unit | M.A.R.V. (Minimum Average Roll Value) |
|-------------------------|-------------|---|--|
| Grab Tensile | ASTM D4632 | lbs (kN) | 380 (1.69) |
| Grab Elongation | ASTM D4632 | % | 50 |
| Trapezoid Tear Strength | ASTM D4533 | lbs (kN) | 140 (0.623) |
| CBR Puncture Resistance | ASTM D6241 | lbs (kN) | 1025 (4.561) |
| Permittivity* | ASTM D4491 | sec ⁻¹ | 0.7 |
| Water Flow* | ASTM D4491 | gpm/ft ² (l/min/m ²) | 50 (2035) |
| AOS* | ASTM D4751 | US Sieve (mm) | 100 (0.150) |
| UV Resistance | ASTM D4355 | %/hrs | 70 (500) |

Packaging

| | |
|-----------------------------------|---------------------|
| Roll Dimensions (W x L) - ft. (m) | 15 x 150 (4.8 x 45) |
| Roll Square Yards (Square Meters) | 250 (209) |
| Estimated Roll Weight - lbs (kg) | 250 (113) |

* At the time of manufacturing. Handling may change these properties.



ADS PLUS-US WOVEN GEOTEXTILE SPECIFICATION

For use with StormTech® Isolator® Row Plus

Scope

This specification describes ADS Plus woven geotextile.

ADS Plus woven geotextile fabrics are woven polypropylene materials offering optimum performance when used in stabilization applications. Produced from first quality raw materials, they provide the perfect balance of strength and separation in styles capable of functioning exceptionally well in a wide range of performance requirements.

Filter Fabric Properties

| Property ¹ | Test Method | Unit | M.A.R.V. (Minimum Average Roll Value) ² |
|---------------------------|-------------|--|---|
| Weight | ASTM D5261 | oz/yd ² (g/m ²) | 8.0 (271.25) |
| Grab Tensile Strength | ASTM D4632 | lbs (kN) | 325 (1.45) |
| Grab Elongation | ASTM D4632 | % | 15 |
| Trapezoidal Tear Strength | ASTM D4533 | lbs (kN) | 125 (0.89) |
| CBR Puncture Resistance | ASTM D6241 | lbs (kN) | 1,124 (5.0) |

1. The property values listed above are subject to change without notice.

2. Minimum Average Roll Values (MARV) is calculated as the average minus two standard deviations. Statistically, it yields approximately 97.5% degree of confidence that any samples taken from quality assurance testing will meet or exceed the values described above.

Dimensions

ADS Plus shall be delivered to the jobsite in roll form with each roll individually identified and nominally measuring 12.5' (3.8 m) width x 360' (110 m) length for Plus125 and 6.25' (1.9 m) width x 360' (110 m) length for Plus625.

Build America, Buy America (BABA)

ADS Plus-US complies with the requirements in the Build America, Buy America (BABA) Act.