On-Site Septic Systems

Providing solutions for all on-site septic design and installation needs.
In the U.S. today, most people enjoy the comforts and peace of mind that come from living in a house served by a public sanitary sewer system. However, it is estimated that 25% of the U.S. population live without access to a public sanitary sewer system. They depend upon on-site septic systems for the treatment and disposal of household sewage. Many of these systems consist of a septic tank and a soil absorption area where the effluent is leached into the soil.

A common component of all soil absorption lines and/or fields is a type of conduit that distributes the effluent throughout the soil. The soil has the function of absorbing and treating effluent. If the soil absorption system is designed properly, i.e. there is adequate soil absorption area for the flow of effluent created by the household, then the leach field will function indefinitely with little maintenance.

"ADS is the largest manufacturer of polyethylene pipe in the world. Since 1967, ADS has supplied contractors with 4" high-density polyethylene septic products which are inert and corrosion resistant to normal household effluents. ADS offers several different types of conduits that can be used in soil absorption areas."

Commonly referred-to specifications in designing Septic Leach Fields:

- **ASTM D 5921** – Standard Practice for Subsurface Site Characterization of Test Pits for On-Site Septic Systems.
- **ASTM F 481** – Standard Practice for Installation of Thermoplastic Pipe and Corrugated Pipe in Septic Tank Leach Fields.
There are two basic types of soil absorption systems: Gravel and Gravel-less.

According to the EPA, the gravel in a conventional pipe and gravel system performs three basic functions: 1) its void spaces provide storage capacity for the effluent; 2) it protects the infiltrative surface area of the soil; 3) it supports the excavation. The gravel does not digest, treat or eliminate the effluent.

Problems inherent in the use of gravel in a soil absorption system include compaction of the infiltrative surface during installation; fines, which reduce the effectiveness of the infiltrative surface, and “masking”, where the effluent cannot enter the soil at points where the rock is in contact with it.

The second basic type of soil absorption system is the gravel-less system. This system incorporates larger pipe or other structures in the soil absorption system.

Gravel-less systems include SB2® pipe, Multi-pipe systems, GEO-flow pipe and HDPE leaching chambers. These are the most commonly used conduits in gravel-less systems.
SB2® Pipe for On-Site Wastewater Disposal

During the 1970's, a building boom in Texas made gravel very scarce. Septic installers could not obtain gravel for their systems, and when they did, the quality was below many health department standards. Two professional sanitarians in Texas, John Scroff and John Barnes, developed the SB2 gravel-less pipe to address this need.

The keys to the excellent performance of SB2 pipe are the size of the pipe and the location of the drain holes. The outside diameters of the 8" and 10" SB2 pipe provide the equivalent of 2 and 3 square feet, respectively, of soil absorption area per linear foot. The location of the drain holes, 60˚ off the bottom center line, provides additional sludge storage capacity, which increases retention time.

Locating holes 60˚ off bottom center line creates additional sludge storage space.

Drain Guard® Protective Wrap

Drain Guard® is a spun-bonded nylon wrap that is overlapped and sonically welded. It provides an excellent soil interface for passage of effluent into the soil. The valleys of the corrugations function as additional storage capacity, since the fabric bridges the corrugations and allows for the free movement of the effluent out and around the pipe.

Additional information

1. ADS Product Note 3.111 “SB2® Installation Guide”
2. ADS Product Note 3.102 “ADS Drain Guard and Sock”
5. ASTM F667 “Standard Specification for Large Diameter Corrugated Polyethylene Pipe and Fittings”
GEO-flow® pipe — More efficient than conventional On-Site treatment systems

The ADS GEO-flow system is dramatically more efficient than a conventional on-site wastewater system because its unique patented* design promotes an oxygen-rich environment for increased biomat activity.

Unique Three-Stage System

1. ADS Corrugated HDPE Pipe helps cool the effluent as it passes through, aiding in the separation of foods, oils and greases from wastewater. The pipe provides additional treatment of solids which may escape the septic tank.

2. Symmetrical polypropylene grid creates a substrate for bacterial activity and assists to distribute effluent around the circumference of the pipe.

3. The special geotextile wrapping creates an additional layer for biomat activity, while utilizing capillary action to wick effluent into the surrounding soil.

GEO-flow's lightweight design, and the fact that it's gravel-less, allow it to be delivered to and installed in areas where conventional pipe-and-gravel systems would be difficult to use.

* Patent #4909665

More flexible than traditional systems

Smaller Footprint and More Flexibility than Traditional Pipe-and-Gravel Systems

Because of its unique design and efficiency, many local Health Departments allow a smaller system footprint for GEO-flow than for conventional systems.* That means lower costs for both the installer and the property owner.

And the flexibility of GEO-flow Pipe allows it to be used in sloping and/or undulating terrain where conventional systems are especially difficult to install.

*Check your local Health Department for requirements in your area.
Multi-Pipe

6-Pipe, 9-Pipe, 11-Pipe, and 13-Pipe Systems

Available in configurations from 6 to 13 pipes, Multi-Pipe units allow for exceptional soil contact without the use of gravel. The patented Multi-Pipe units function as a trickle filter, dispersing effluent into the voids in and around the specially-banded ADS pipe. This pipe is engineered with holes and slots, allowing it to collect and disperse the effluent as it passes over the corrugations in the pipe. ADS Multi-Pipe Systems are available for use in both residential and commercial applications. Contact your local Health Department or County Sanitarian for information on which sizes meet your state & local requirements.

Pipe Placement: The distribution pipe (D) disperses the effluent into the void pipe (V) in and around the specially banded units.

Additional information

1. ASTM F 405 “Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings”
2. Product Note 3.131 “Installation Guidelines for Multi-Pipe”
4. ASTM F 481 “Standard Practice for Installation of Thermoplastic Pipe and Corrugated Pipe in Septic Tank Leach Fields”
BioDiffuser™ Plastic Leaching Chambers

ARC™ 36 BioDiffuser Leachfield Chambers

ARC septic leaching chambers can help you save labor, time on the job, and materials without sacrificing performance. Its sturdy design and lightweight plastic construction combine maximized infiltrative surface area and storage capacity with an improved structural design to handle most any conventional leach field system challenge. This allows for increased effluent dispersal performance and improved structural integrity. The ARC design features:

- An integral 20° articulating joint for contoured applications.
- Universal inlet/outlet end cap.
- Convenient five-foot lengths are light weight and easy handling.
- 34.5" width ready for installation into a 3' wide trench.
- Inspection vent ports on every unit with easy-to-remove knockouts.
- True corrugated chamber design for increased loadbearing.

<table>
<thead>
<tr>
<th>Feature</th>
<th>ARC 36</th>
<th>ARC 36 HC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS Product #</td>
<td>3613BD</td>
<td>3616BD</td>
</tr>
<tr>
<td>Length</td>
<td>63’</td>
<td>63’</td>
</tr>
<tr>
<td>Repeat Length</td>
<td>60’</td>
<td>60’</td>
</tr>
<tr>
<td>Overall Width</td>
<td>34.5”</td>
<td>34.5”</td>
</tr>
<tr>
<td>Sidewall Height</td>
<td>7.13”</td>
<td>10.75”</td>
</tr>
<tr>
<td>Overall Height</td>
<td>13”</td>
<td>16”</td>
</tr>
<tr>
<td>Capacity</td>
<td>8.04 cu ft (60.14 gal)</td>
<td>10.7 cu ft (80.04 gal)</td>
</tr>
<tr>
<td>Weight</td>
<td>16 lbs</td>
<td>17 lbs</td>
</tr>
<tr>
<td>Pallet Qty</td>
<td>60 chambers</td>
<td>60 chambers</td>
</tr>
<tr>
<td>Van (Box Trailer) Quantity</td>
<td>25 pallets</td>
<td>25 pallets</td>
</tr>
<tr>
<td>Flatbed Quantity</td>
<td>22 pallets</td>
<td>22 pallets</td>
</tr>
</tbody>
</table>
Standard and High Capacity Chambers

The BioDiffuser plastic leaching chamber is a gravel-less alternative for on-site septic leachfield systems. The BioDiffuser chambers provide maximum infiltrative surface area while allowing effluent to flow in all directions. This is achieved by combining the traditional, open bottom with a series of louvers along the sides. The louvers are designed to allow effluent to pass into the backfill while preventing the backfill from migrating into the chamber. BioDiffuser chambers are constructed of high density polyethylene which is inert to sewage.

All BioDiffuser chambers can withstand H-10 loads when installed with properly graded and compacted soils. A minimum of 12" of cover is required for H-10 loads. 14" BioDiffuser chambers can handle H-20 loads if installed in certain conditions. Please refer to ADS publication “Product Note 3.121, BioDiffuser Chamber Installation Guidelines,” for details.

Narrow Chambers

The lightweight units, available in 11", 14" and 16" heights, are easy to handle. Their standard 75" (6.25') length and 34" width make installation into a 3' trench quick and easy.

<table>
<thead>
<tr>
<th>Chambers</th>
<th>Narrow Bio 2 15&quot; x 12&quot; x 87&quot; H-10</th>
<th>Narrow Bio 3 22&quot; x 12&quot; x 87&quot; H-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS Product #</td>
<td>1500BD</td>
<td>2200BD</td>
</tr>
<tr>
<td>Length</td>
<td>87&quot;</td>
<td>87&quot;</td>
</tr>
<tr>
<td>Repeat Length</td>
<td>86&quot;</td>
<td>86&quot;</td>
</tr>
<tr>
<td>Overall Width</td>
<td>15&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>Sidewall Height</td>
<td>9.03&quot;</td>
<td>9.03&quot;</td>
</tr>
<tr>
<td>Overall Height</td>
<td>12&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>Capacity, ft³ (gal)</td>
<td>4.99 (37.34)</td>
<td>8.45 (63.17)</td>
</tr>
<tr>
<td>Weight, lbs.</td>
<td>27</td>
<td>37</td>
</tr>
<tr>
<td>Pallet Qty</td>
<td>90 pcs</td>
<td>70 pcs</td>
</tr>
<tr>
<td>Flatbed Qty*</td>
<td>14 pallets</td>
<td>14 pallets</td>
</tr>
</tbody>
</table>

* Endcaps may reduce truckload quantity.
Chamber Accessories

BioDiffuser Angle Chamber

- Accommodates 0° to 22° angles
- Universal left or right turns
- One-foot standard chamber extension
- Available for standard and narrow chambers

Universal End Caps

- One style fits both ends
- Easy to assemble
- No screws required
- Easy knockout holes

Optional Splash Plates

- 6” x 8”
- 150 mil plastic splash plates

Additional information

1. Product Note 3.121 BioDiffuser™ Chamber Installation

BioDiffuser Angle Chambers
(0-22 Degree Oscillating Left-Right Swivel Joint)

<table>
<thead>
<tr>
<th>Chambers</th>
<th>Standard Angle</th>
<th>Bio 2 &amp; 3 Angle</th>
<th>HC Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section</td>
<td>Section</td>
<td>Section</td>
<td></td>
</tr>
<tr>
<td>ADS Product #</td>
<td>1122BD</td>
<td>1522BD</td>
<td>1622 BD</td>
</tr>
<tr>
<td>0°-22° Angle</td>
<td>Left or right</td>
<td>Left or right</td>
<td>Left or right</td>
</tr>
<tr>
<td>Pieces per box</td>
<td>45</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Weight</td>
<td>3.5 lbs. each</td>
<td>2 lbs. each</td>
<td>8 lbs. each</td>
</tr>
</tbody>
</table>
ADS 3000 TripleWall® Pipe

STRONG
ADS TripleWall HDPE pipe WILL NOT CRACK or flatten under typical loads.

DURABLE
HDPE has unmatched corrosion and abrasion resistance.
Superior joint, injection-molded HDPE coupling is spin-welded to the pipe.
• Standard 5/8" leach hole perforations.
• 10' lengths with one spin-welded coupling.
• 3" & 4" Diameters, Perforated or Solid
• 90 pieces per pallet.
ADS TripleWall pipe is used for septic leach fields, perimeter drains and foundation drains.

Additional information
2. ASTM F 481 “Standard Practice for Installation of Thermoplastic Pipe and Corrugated Pipe in Septic Tank Leach Fields”

SEPTIC SOLUTIONS

✓ Conventional
✓ Beam Strength
✓ Equal Distribution
Curtain Drains

High water tables can cause flooding of the soil absorption septic system. Perimeter drains, also called curtain drains, are installed to prevent water seepage into the leach field area.

AdvanEDGE® pipe is panel-shaped, offered in 12" and 18" heights, and in coils up to 400 ft. The primary benefit of its panel design is quick drainage response after introduction of water, making it ideal for time-critical applications as opposed to 4" and gravel trench drains.

AdvanEDGE Pipe Perimeter Drain

The AdvanEDGE pipe’s increased contact area allows faster drainage than conventional pipe.

Water Table Drainage In Septic Systems

SEPTIC SOLUTIONS

Anticipated High Water Tables

Sloped Sites

Additional information

1. Product Note 3.110 “Specification for AdvanEDGE Pipe”
2. ASTM F 481 “Standard Practice for Installation of Thermoplastic Pipe and Corrugated Pipe in Septic Tank Leach Fields”
ADS Fittings, Parts and Accessories

**Split Coupling**
- 3" – 311
- 4" – 411
- 5" – 511
- 6" – 611

**Snap Tee**
- 3" – 321
- 4" – 421
- 5" – 525
- 6" – 626

**Blind Tee**
- 3" – 341
- 4" – 441
- 5" – 541
- 6" – 641

**Multiple Tee**
- 604 – 6" to 3, 4, 5 or 6"
- 844 – 8" to 4, 5, 6 or 8"
- 1044 – 10" to 6, 8 or 10"

**Multiple Cross Tee**
- 654 – 6" to 4, 5 or 6"

**Tap Tee**
- 3" – 350
- 4" – 450
- 4" LONGSTAPLE

**Downspout Adapter**
- 3" – 364 (3.25 x 2.5)
- 4" – 464 (3.25 x 2.5)
- 4" – 466 (2.25 x 3.5) RAINGO
- 6" – 664 (4 x 6 x 6)

**Septic Tee No. 494**
- 4" straight end
- fits ADS adapter 463
- for ADS Plastic Pipe

**Septic Tee No. 495**
- 45° Wye
- Adapts to cast iron
- Adapts to clay

**Septic Tee No. 496**
- Adapts to cast iron
- for ADS Plastic Pipe

**Septic Vented Elbow No. 497**
- 12" – 1267
- 15" – 1567
- 18" – 1867
- 24" – 2467

**Septic Tank Adapter**
- 4" – 463

**Offset Adaptor (SB2)**
- 839 – 8" without gasket
- 940 – Gasket
- 1039 – 10" without gasket
- 1040 – 10" with gasket

**45° Wye**
- 3" – 322
- 6" – 622
- 8" – 822
- 5" – 522

**Distribution Boxes**
- 1369 – Regular
- 1370 – Hillside

**Snap Coupling**
- 3" – 312
- 6" – 612
- 8" – 812
- 10" – 1012

**Internal Coupler**
- 3" – 315
- 4" – 415
- 5" – 515
- 6" – 615
- 8" – 815
- 10" – 1015

**90° Elbow**
- 3" – 390
- 4" – 490

**Clay Adapter**
- 3" – 363
- 4" – 463
- 5" – 563
- 6" – 663
- 8" – 863

**4" Sewer and Drain Adapter**
- 4" – 467

**AdvanEDGE Pipe**
- Available in 12" and 18" heights

**Non-Perforated Pipe**
- 3" – 351
- 4" – 451
- 5" – 551
- 6" – 651
- 8" – 851
- 10" – 1051
- 12" – 1251
- 15" – 1551
- 18" – 1851
- 24" – 2451

**Septic System**

**Leach Field Pipe**
- (1/2" to 3/4" dia. hole)
- 4" – 402 – 100' Coil or 250' Coil
- 4" – 405 – White 250' Coil
- Filter wrapped. 1/2" holes.
- 8" and 10" diam. 20' lengths.

**SB2 Gravel-less Leach Bed Pipe**
- 3" – 390
- 4" – 490

**Geo Flow**
- 0481-AA
- 0482-AA

**ADS TripleWall Septic Drain Pipe**
- 352 – 3" x 10", perforated
- 355 – 3" x 10", solid
- 462 – 4" x 10", perforated
- 465 – 4" x 10", solid

**Septic Fabric**
- 2600 or 2700 Series

**Multi-Pipe**
- MPS-6
- MPS-11
- MPS-13

**ARC Chamber**
- 3613BD
- 3616BD

**Standard Chamber**
- 1100 BD 34" wide x 11" high
- 1400 BD 34" wide x 14" high - HC
- 1600 BD 34" wide x 16" high - HC

**Narrow Chamber**
- 2200 BD 22" wide x 12" high
- 1500 BD 15" wide x 12" high

**BioDiffuser Angle Section**
- 1102BD
- 1502BD
- 1602BD
- 1501BD, 2201BD
- 1101 BD, 1401BD, 1601BD

**Chamber Ends Caps**
- 3613BD
- 3616BD

**Speed Leveler**
- 0010SL

**ADS Customer Service Locations**

ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD. HILLIARD, OH 43026
800-821-6710  www.ads-pipe.com

ADS “Terms and Conditions of Sale” are available on the ADS website, www.ads-pipe.com