Infiltrator Water Technologies
Part of ADS

New York

Design and Installation Manual for the Infiltrator ATL™ System in New York



The purpose of this manual is to provide the minimum specifications for design and installation of the ATL System in New York. All local ordinances, requirements, and procedures must be followed. Each revised version of this manual supersedes the previous version.

The configurations presented in this document are common designs and are provided for illustrative purposes. They are not intended to restrict the use of other configurations, which may be utilized provided the design conforms to 10 NYCRR, Department of Health, Chapter II, Part 75, *Appendix 75-A Wastewater Treatment Standards – Individual Household Systems* and other state/local regulations, as applicable.

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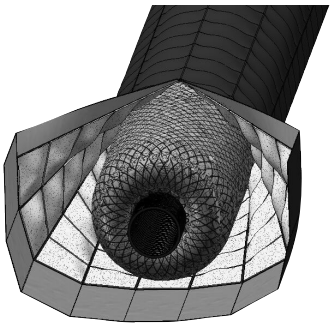
New York

INTRODUCTION

The ATL System

The ATL is a patented, proprietary system consisting of six components. Upon entering the Infiltrator ATL, septic tank effluent progresses through each component as follows:

- 4-inch-diameter perforated pipe
- Large-diameter synthetic aggregate;
- Coarse geotextile;
- Small-diameter synthetic aggregate;
- Fine geotextile; and
- 6-inch depth of specified system sand.



ATL System Testing

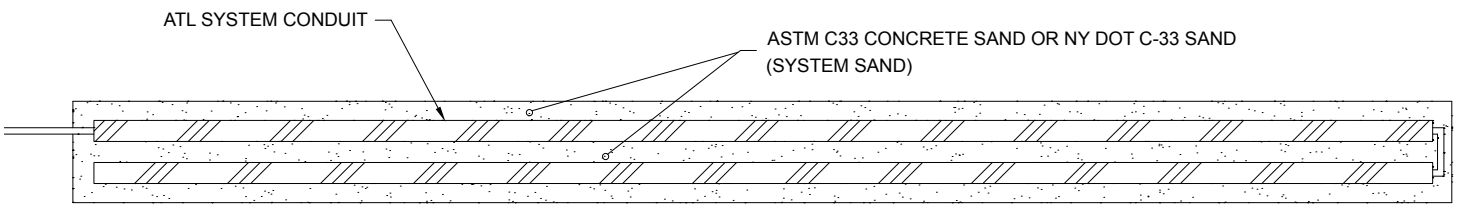
The ATL System has been extensively tested at the Massachusetts Alternative Septic System Test Center (MASSTC) located in Barnstable County, Massachusetts. As a result of testing, the ATL System is certified by NSF International as complying with NSF/ANSI 40 for the production of Class I effluent. Copies of the Final Report on this testing is available from Infiltrator upon request. The NSF/ANSI 40 listing can be found at: http://info.nsf.org/Certified/Wastewater/Listings.asp?Company=C0058147&Standard=040.

When designed and installed in an absorption bed system as detailed in Appendix 75-A.8(g) and in accordance with the specifications in the section titled “BED SYSTEM” (page 7) in this Manual, the ATL System will provide NSF/ANSI 40-compliant effluent.

ATL System Sand Definition

“System sand” is the term used to describe the coarse sand material that surrounds the ATL System conduits. Acceptable material for use as system sand includes:

- material which meets **ASTM C33** concrete sand specifications; or
- material which meets **NY DOT 703-07** concrete sand specifications.
- per Appendix 75A: washed concrete sand



NEW YORK DESIGN INFORMATION

Information Specific to Use of the ATL System in New York

The New York Department of Health has determined that the ATL System is compliant with Appendix 75-A Wastewater Treatment Standards – Individual Household Systems (Appendix 75-A) in a number of applications. Based upon its treatment capability, as well as its geometry and storage capability, the ATL System may be designed and installed in the State of New York in the following applications:

- a gravelless absorption system, in accordance with Appendix 75-A.8(c)(3)(ii);
- a gravelless geotextile sand filter, in accordance with Appendix 75-A.8(c)(3)(iii);
- a shallow absorption trench system, in accordance with Appendix 75-A.8(e);
- an absorption bed system, in accordance with Appendix 75-A.8(g);
- a raised system, in accordance with Appendix 75-A.9(b); and
- a mound system, in accordance with Appendix 75-A.9(c).

This Manual addresses each of these applications individually.

If design, installation, operation, or maintenance specifications are not specifically addressed in this manual, relevant requirements in 10 NYCRR, Department of Health, Chapter II, Part 75; Appendix 75-A, and all state and local requirements shall be applicable.

Siting - Slope Restrictions

Appendix 75-A establishes restrictions on the amount of slope a site may have in order to accommodate an onsite wastewater disposal system. The amount of allowable slope varies, based upon system type;. Table 1 details these restrictions. A Specific Waiver, in accordance with Appendix 75-A.11, may be issued to allow for design and installation of the ATL Systems on sites with slopes that exceed these restrictions.

System Type	Maximum Slope on Site
Trench	15%
Alternative System	15%
Mound	12%
Absorption Bed	8%

Table 1: Maximum allowable slope according to system type

Recommended Daily Design Flow

Subsection A.3 of Appendix 75-A details the minimum daily flows to be used for the design of individual household systems.

For DOH permits the ATL system is approved for use in residential applications up to a maximum daily design flow of 1,000 gallons per day. For commercial and residential systems greater than 1000 gpd the systems are permitted by DEC and this document can be utilized as a design reference guide.

NEW YORK DESIGN INFORMATION

Maximum Length of Individual ATL Conduit Rows

Gravity Systems
Appendix 75-A of NYCRR10 Section 75 establishes a 60-foot length limit on individual disposal field lines, regardless of the media type. A Specific Waiver, in accordance with Appendix 75-A.11, may be issued to design and install the ATL System at individual conduit row lengths greater than 60 feet.

Pressure Distribution and Dosing
Maximum length of lines is 100 feet.

DISTRUBUTION
ATL System can be served as allowed per Appendix 75A.

Horizontal and Vertical Separation Distances
Horizontal separation distances shall be measured from the outside aspect of the system sand.

Vertical separation distances shall be measured from six inches below the ATL conduits.

Cover and Structural Information
See system details for required system sand over the ATL conduit rows. Cover the ATL system with a minimum of four-inches of material that is capable of sustaining plant growth. Maximum cover is not recommended to exceed 4 feet. With 12” of cover the ATL system can sustain H-10 loading.

Minimum ATL Conduit Length
The minimum ATL conduit length is 70 feet per bedroom for all NSF 40-compliant system designs.

Commerical Systems and Systems Outside the Limits of Appendix 75A:
- The Infiltratror ATL System can be specified on systems outside the limits of Appendix 75A. Designers may use this manual as a reference guide for the basis of design.
- Systems are regulated by the New York State Department of Environmental Conservation (NYSDEC) and may be required to be designed by a liscensed engineer.
- The loading rates and sizing for this manual are based upon typical residential strength wastewater. Therefore it is recommended that the engineer modify the design accordingly to address high strength waste if necessary.

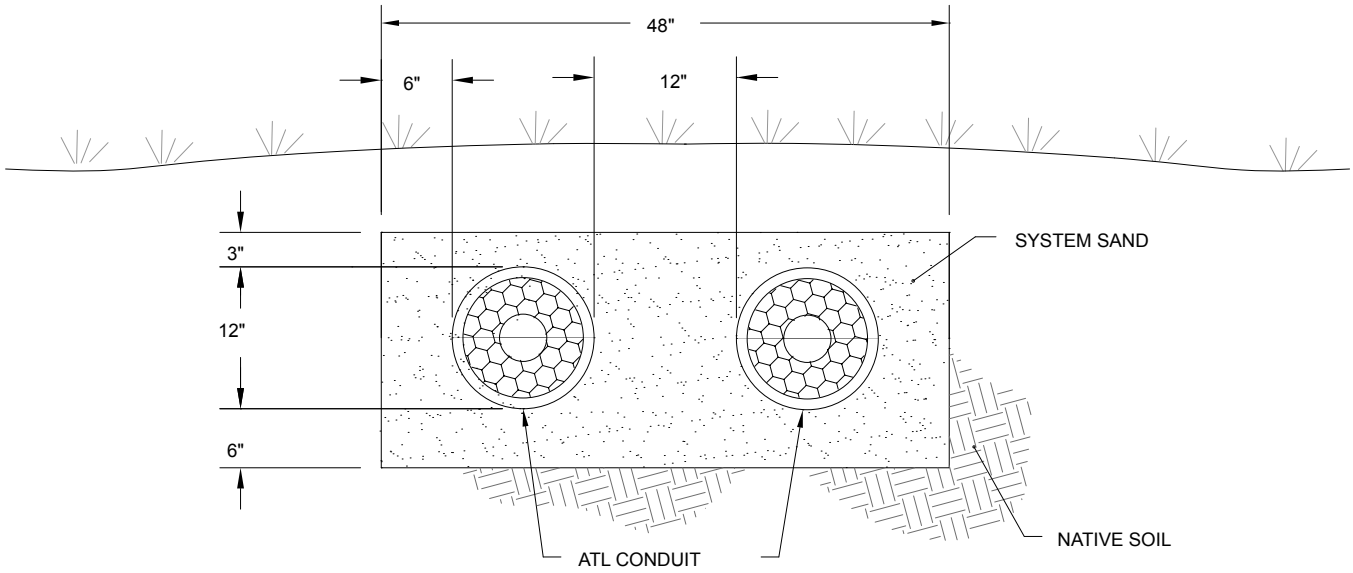
SYSTEM CONFIGURATIONS

Gravelless geotextile sand filter system (GGSF)

The ATL System may be designed and installed in gravelless geotextile sand filter applications in accordance with Appendix 75-A.8(c)(3)(iii). Compliant designs and installation of the ATL System in these applications include two options:

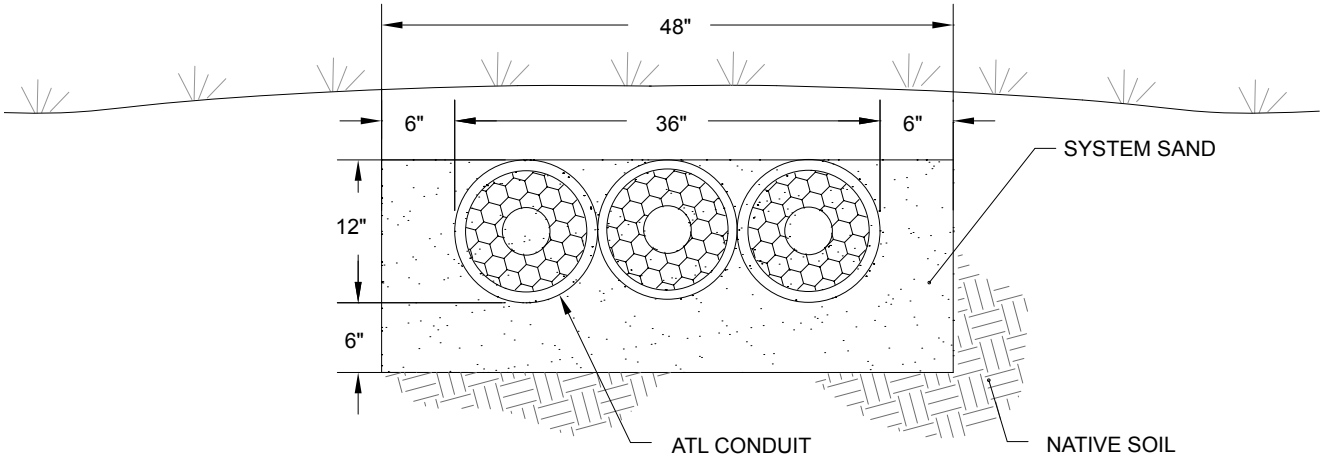
GGSF Option A: Two-Bundle S Cross Section Detail

- use of a 4-foot wide trench, with 6-inches of system sand on the bottom;
- use of two ATL conduit rows, with 6-inches of system sand on each side of the ATL conduit (12-inches of system sand between the two ATL conduit rows);
- 6-inches of system sand on both ends of each ATL conduit row
- 3-inches of sand over the conduits



GGSFS Option B: Three-Bundle System Cross Section Detail

- use of a 4-foot wide trench, with 6-inches of system sand on bottom;
- use of three ATL conduit rows centered in the trench with 6-inches of system sand on each side; and
- 6-inches of system sand on each end of the ATL conduit rows.



Each configuration (A or B) receives a credit of 6 square feet per linear foot of trench.

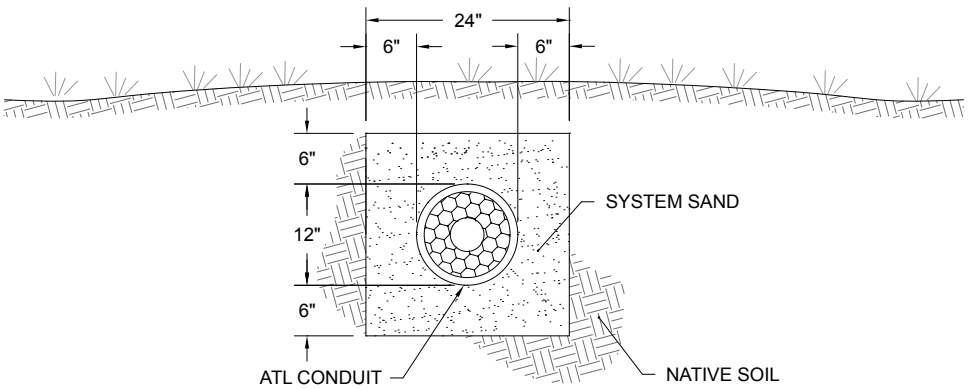
SYSTEM CONFIGURATIONS

Gravelless media-wrapped corrugated pipe sand-lined system

The ATL System may be designed and installed in gravelless media-wrapped corrugated pipe sand-lined system applications in accordance with Appendix 75-A.8(c)(3)(ii). The design and installation of the ATL System in these applications includes the following:

- use of a 24-inch-wide trench, with 6 inches of system sand below, adjacent to, and on top of the ATL conduit; and
- allowance for a 25% reduction in the total absorption trench length as listed in 75A Table 4A or as calculated from 75A Table 4B.

ATL System 24-inch trench section detail.



Shallow absorption trench system and cut and fill system

Note: As an approved gravelless media-wrapped corrugated pipe sand-lined system, the ATL System may be designed and installed in shallow absorption trench system applications in accordance with Appendix 75-A.8(e), and cut and fill system applications in accordance with Appendix 75-A.8(f). In both applications the conditions cited above (24-inch wide trench and 25% absorption trench length reduction) may be applied to the ATL System design. The requirement for the use of aggregate is waived.

Raised system and Mound system

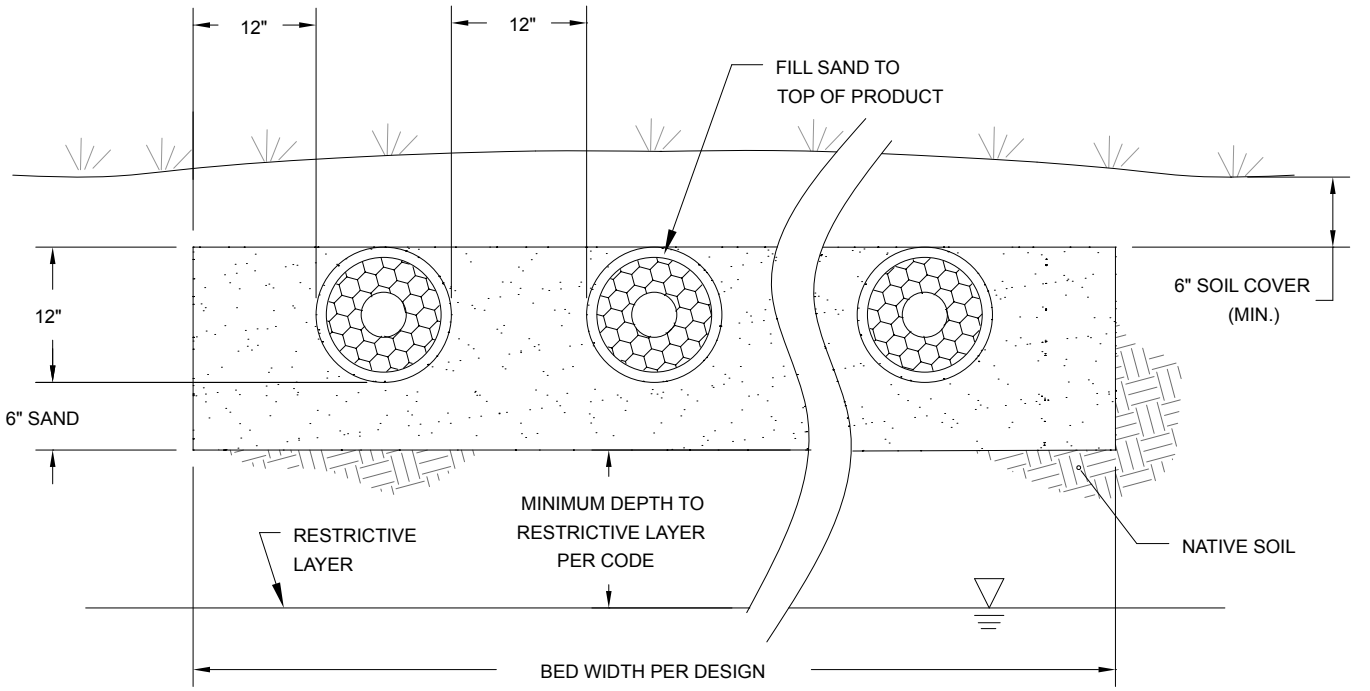
As an approved gravelless media-wrapped corrugated pipe sand-lined system, the ATL System may be designed and installed in raised system applications in accordance with Appendix 75-A.9(b), and mound system applications in accordance with Appendix 75-A.9(c). In these applications the 25% absorption trench length reduction is not applicable to the ATL System design. The requirement for the use of aggregate is waived.

SYSTEM CONFIGURATIONS

Absorption bed system

The ATL System may be designed and installed in absorption bed system applications in accordance with Appendix 75-A.8(g). The design and installation of the ATL System in these applications includes the following:

- use of pressure distribution, dosing or gravity is allowed;
- requirements for the use of aggregate are waived;
- minimum of 70 linear feet of ATL conduit per bedroom;
- New construction sizing is 1-to-1 with conventional pipe and aggregate; and
- Replacement system based upon NSF/ANSI 40 certification, sizing in replacement systems allows for a reduction in basal absorption area required. See Table 7 on page 13.
- The final grade is recommended to be 2% minimum, to provide proper drainage.



GRAVELLESS GEOTEXTILE SAND FILTER SYSTEM DESIGN

- Trench system design is allowed in soils with percolation rates up to 60 mpi.
- Maximum length of trenches is 60 feet. Longer lengths may be allowed with the use of a Specific Waiver, in accordance with Appendix 75-A.11.
- Recommended minimum daily design flow is 300 gallons per day.

Design Process:

1. Determine the daily design flow. (Site percolation rate is required.)
2. Determine the minimum total trench length required.
3. Calculate the number of trenches required.
4. Design the gravelless geotextile sand filter configuration to fit the site.

Step 1: Determine the daily design flow.

Appendix 75-A.3 allows for design flow rates of 110, 130, and 150 gallons per bedroom per day, depending on the fixtures utilized in the residence. Use Appendix 75-A.3 to determine the system's daily design flow.

Step 2: Determine the minimum total trench length required.

Referencing Table 2, determine the minimum trench length required based upon the daily design flow and the percolation rate on the site.

GGSFS Minimum Trench Length Required (ft)								
Daily Design Flow (gpd)	Percolation Rate (mpi)							
	1-5	6-7	8-10	11-15	16-20	21-30	31-45	45-60
220	31	37	41	46	53	61	73	82
260	36	43	48	54	62	72	87	97
300	42	50	56	63	71	83	100	111
330	46	55	61	69	79	92	110	122
390	54	65	72	81	93	108	130	144
440	61	73	82	92	105	122	147	163
450	63	75	83	94	107	125	150	167
520	72	87	97	108	125	144	173	193
550	77	92	102	115	131	153	183	204
600	83	100	111	125	143	167	200	222
650	90	108	120	135	155	181	217	241
660	92	110	122	136	157	183	220	145
750	104	125	139	156	179	208	250	278
770	107	129	143	161	183	214	257	286
780	108	130	144	163	186	217	260	289
900	125	150	167	188	214	250	300	333

Table 2: GGSF minimum trench length required

Step 3: Determine the number of trenches required.

To determine the number of trenches, divide the trench length required by 60, and round up to the nearest whole number. If a Specific Waiver has been issued specifing the number of trenches, then proceed to Step 4.

Step 4: Layout the system configuration to fit the site.

Make any adjustments to the trench lengths as determined in Steps 2 and 3 to (1) maximize the length of the trenches and (2) meet site limitations. If no specific site constraints exist, divide the minimum trench length determined in Step 2 by the number of trenches determined in Step 3.

GRAVELLESS GEOTEXTILE SAND FILTER SYSTEM DESIGN EXAMPLE

The following sample system design calculations are intended to illustrate the methodology for designing an ATL System in a gravelless geotextile sand filter application (GGSF). The sample system design calculations are provided in the step-by-step format described above.

Sample system specifications:

- 3-bedroom home
- 110 gallons per bedroom
- Level site
- Percolation rate of 22 mpi

Step 1: Determine the daily design flow.

From the specifications above, the daily design flow is 330 gallons per day.

Step 2: Determine the minimum total trench length required.

From the specifications above, the percolation rate on the site is 22 mpi. Referencing Table 2, the minimum total trench length is 92 linear feet.

GGSFS Minimum Total Trench Length Required (ft)								
Daily Design Flow (gpd)	Percolation Rate (mpi)							
	1-5	6-7	8-10	11-15	16-20	21-30	31-45	45-60
220	31	37	41	46	53	61	73	82
260	36	43	48	54	62	72	87	97
300	42	50	56	63	71	83	100	111
330	46	55	61	69	79	92	110	122
390	54	65	72	81	93	108	130	144
440	61	73	82	92	105	122	147	163

Abbreviated Table 2: GGSFS minimum total trench length required

Step 3: Determine the number of trenches required.

Divide the total trench length required by 60, and round up to the nearest whole number. As shown below, with a total trench length of 92, the minimum number of trenches required is 2.

92 ÷ 60 = 1.53
Rounding up to the nearest whole number = 2 trenches required (minimum)

Note: Appendix 75-A limits individual row lengths to 60 feet. Longer lengths may be allowed with the use of a Specific Waiver in accordance with Appendix 75-A.11.

Step 4: Layout the system configuration to fit the site.

Divide the minimum total trench length determined in Step 2 (92 feet) by the number of trenches determined in Step 3 (2).

92 ft ÷ 2 trenches = 46 ft/trench – Use 50 ft/trench
(round up to the nearest 5-foot increment)

Note: ATL conduit is manufactured in 5 and 10-foot lengths.

ABSORPTION BED SYSTEM DESIGN

- Bed system design is allowed in soils with percolation rates up to 30 mpi for new construction, and up to 120 mpi for replacement systems.
- Beds can have pressure distribution, dosing or gravity distribution.
- Maximum length of the bed is 60 feet for gravity distribution and 100 feet for pressure distribution. Longer lengths may be allowed with the use of a Specific Waiver in accordance with Appendix 75-A.11.

Designing the ATL System in a bed system application for new construction is a six-step process.

1. Determine the daily design flow.
2. Determine the minimum total sand bed area required.
3. Calculate the minimum total length of ATL conduit required.
4. Design the bed configuration to fit the site.
5. Calculate width of bed as designed.
6. Calculate sand bed area as designed to determine if minimum total system sand bed area requirement (Step 2) has been met. Extend design bed width if necessary.

Step 1: Determine the daily design flow.

Appendix 75-A.3 allows for design flow rates of 110, 130, and 150 gallons per bedroom per day, depending on the fixtures utilized in the residence. Use Appendix 75-A.3 to determine the system's daily design flow.

The daily design flow can be calculated using the following equation:

Daily Design Flow = (Design Flow per Bedroom) x (Number of Bedrooms)

Step 2: Determine the minimum total system sand bed area required.

If it is a new system then reference Table 3, determine the minimum total system sand bed area required based upon the daily design flow and the percolation rate on the site. If it is a replacement system then reference Table 4.

ABSORPTION BED SYSTEM DESIGN

Minimum Total System Sand Bed Area Required (sf) – New Construction						
Daily Design Flow (gpd)	Percolation Rate (mpi)					
	1-5	6-7	8-10	11-15	16-20	21-30
220	232	275	314	367	400	489
260	289	325	371	433	473	578
300	316	375	429	500	546	667
330	347	413	471	550	600	733
390	411	488	557	650	709	867
440	463	550	629	733	800	978
450	474	563	643	750	818	1,000
520	547	650	743	867	946	1,156
550	579	688	786	917	1,000	1,222
600	632	750	786	1,000	1,091	1,333
650	684	813	929	1,083	1,182	1,467
660	695	825	943	1,100	1,200	1,467
750	790	938	1,071	1,250	1,364	1,667
780	821	975	1,114	1,300	1,419	1,733
900	947	1,125	1,286	1,500	1,637	2,000

Table 3: Minimum total system sand bed area required – new system

Minimum Total System Sand Bed Area Required (sf) – Replacement System											
Daily Design Flow (gpd)	Percolation Rate (mpi)										
	1-5	6-7	8-10	11-15	16-20	21-30	31-45	46-60	61-80	81-100	101-120
220	139	165	188	220	257	293	328	379	440	524	667
260	165	195	222	260	283	347	388	448	520	619	788
300	190	226	256	300	326	400	448	517	600	714	909
330	209	248	282	330	357	440	493	569	660	786	1,000
390	247	293	333	390	424	520	582	672	780	929	1,182
440	278	330	376	440	478	587	657	759	880	1,048	1,333
450	285	338	393	450	489	600	672	776	900	1,071	1,364
520	329	391	444	520	565	693	776	897	1,040	1,238	1,758
550	348	414	470	550	598	733	821	948	1,100	1,310	1,667
600	380	451	513	600	652	800	896	1,034	1,200	1,429	1,818
650	411	489	555	650	707	867	970	1,121	1,300	1,548	1,970
660	418	496	564	660	717	880	985	1,138	1,320	1,571	2,000
750	475	564	641	750	815	1,000	1,119	1,293	1,500	1,786	2,273
780	494	586	667	780	848	1,040	1,164	1,345	1,560	1,857	2,364
900	570	677	769	900	978	1,200	1,343	1,552	1,800	2,143	2,727

Table 4: Minimum total system sand bed area required – replacement system

Step 3: Calculate the minimum total length of ATL conduit required.

Referencing Table 5, determine the minimum length of ATL conduit required.

Number of Bedrooms	Minimum Infiltrator ATL Length (ft)
2	140
3	210
4	280
5	350
6	420

Table 5: Minimum length of ATL conduit required

Step 4: Design the bed configuration to fit the site.

Select the appropriate ATL conduit row length and number of rows to meet the minimum total length of ATL conduit requirements (Step 3) and any site constraints. Long and narrow bed configurations are preferred.

To accomplish this, use the following equations:

Number of ATL Conduit Rows = Minimum Total Length of ATL Conduit ÷ 60
Round up to the nearest whole number

Length of ATL Conduit Rows = Minimum Length of ATL Conduit ÷ Number of ATL Conduit Rows
Round up to the nearest whole number

Total Length of ATL Conduit Provided = Number of ATL Conduit Rows x Length of ATL Conduit Rows

Note: *Appendix 75-A limits individual row lengths to 60 feet for gravity distribution and 100 feet for pressure distribution. Longer lengths may be allowed with the use of a Specific Waiver in accordance with Appendix 75-A.11.*

Step 5: Calculate width of bed as designed.

Based upon the number of ATL conduit rows and the length of each conduit row (Step 4), calculate the design bed width by utilizing the following information:

• each ATL conduit is 1-foot wide;
• the system sand between each conduit is a minimum of 1-foot wide; and
• the system sand on the outside aspect of each ATL conduit row with no conduit row adjacent to it will be 1-foot wide.

With this in mind, the minimum width is calculated using the following formula:

Minimum Bed Width = 1 + (2 x Number of ATL rows)

Step 6: Calculate sand bed area as designed to determine if minimum total system sand bed area requirement has been met. Extend design bed width if necessary.

The sand bed area as designed (ATL conduit row length from Step 4 and sand bed width from Step 5) must equal the minimum sand bed area required (Step 2). If it does not, then the design bed width must be extended to meet the minimum bed area requirements.

The design bed area is calculated using the following equation:

Design Bed Area = (Design Conduit Row Length + 2) x (Design Bed Width)

Note: *Length of individual ATL conduit rows as calculated in Step 4 must be extended by 2-feet to account for the 1-foot sand extensions on each end of all ATL conduit rows.*

ABSORPTION BED SYSTEM DESIGN EXAMPLE

Sample Absorption Bed System Design Calculations – New Construction

The following sample system design calculations are intended to illustrate the methodology for designing an ATL System in a bed system application for new construction. The sample system design calculations are provided in the step-by-step format described above.

Sample system specifications:

- 3-bedroom home, new construction
- 110 gallons per bedroom
- Level site
- Percolation rate of 22 mpi

Step 1: Determine the daily design flow.

Appendix 75-A.3 allows for design flow rates of 110, 130, and 150 gallons per bedroom per day, depending on the fixtures utilized in the residence. The specified design flow rate is 110 gallons per day per bedroom, and the number of bedrooms is 3. Therefore, the daily design flow is 330 gpd.

Step 2: Determine the minimum system sand bed area required

Referencing Table 3, the minimum system sand bed area required based upon the daily design flow of 330 gpd and the percolation rate of 22 mpi is 733 square feet.

Minimum System Sand Bed Area Required (sf)						
Daily Design Flow (gpd)	Percolation Rate (mpi)					
	1-5	6-7	8-10	11-15	16-20	21-30
220	232	275	314	367	400	489
260	289	325	371	433	473	578
300	316	375	429	500	546	667
330	~~347~~	~~413~~	~~471~~	~~550~~	~~600~~	733
390	411	488	557	650	709	867

Table 3 (abbreviated): Minimum system sand bed area - new system.

ABSORPTION BED SYSTEM DESIGN EXAMPLE

Step 3: Calculate the minimum length of ATL conduit required

Referencing Table 5 (below), the minimum length of ATL conduit required is 210 linear feet.

Number of Bedrooms	Minimum Infiltrator ATL Length (ft)
2	140
3	210
4	280
5	350
6	420

Table 5: Minimum length of ATL conduit required

Step 4: Design the bed configuration to fit the site

Divide the minimum length of ATL conduit required (210 linear feet) by 60, and round up to the nearest whole number.

Number of ATL Conduit Rows = Minimum Length of ATL Conduit ÷ 60
Number of ATL Conduit Rows = 210 linear feet ÷ 60 feet per row = 3.5 rows
Round up to **4 rows**

Length of ATL Conduit Rows = Minimum Length of ATL Conduit ÷ Number of ATL Conduit Rows
Length of ATL Conduit Rows = 210 linear feet ÷ 4 rows = 52.5 linear feet per row
Round up to **55 feet per row**

Total Length of ATL Conduit Provided = Number of ATL Conduit Rows x Length of ATL Conduit Rows
Total Length of ATL Conduit Provided = 55 linear feet per row x 4 rows **= 220 linear feet of ATL conduit**

Step 5: Calculate width of bed as designed

Calculate the design bed width using the following equation:

Design Bed Width = 1 + (2 x Number of ATL rows)
Design Bed Width = 1 + (2 x 4) = 1 + (8) **= 9 feet**

ABSORPTION BED SYSTEM DESIGN EXAMPLE

Step 6: Calculate sand bed area as designed to determine if minimum total system sand bed area requirement (Step 2) has been met. Extend design bed width if necessary.

Calculate the design bed area using the following equation:

Design Bed Area = (Design Conduit Row Length + 2) x (Design Bed Width)
Design Bed Area = (55 ft + 2) x (9 ft) = 513 ft^2

Since the design bed area (513 ft^2) is smaller than the minimum total system sand bed area required (733 ft^2), the bed width as designed must be widened to provide the minimum sand bed area.

Divide the required sand bed area by the length of the system sand:

733 ft^2 ÷ (55 + 2) ft = 12.9 ft

Subtract the original system sand footprint width from the above adjusted system sand footprint width:

12.9 ft - 9 ft = 3.9 ft

Divide the additional required width by 2 to determine the sand extension to add to each side of the system sand footprint width:

3.9 ft ÷ 2 = 2 ft (round up to 2 ft)

The system sand width must be widened by 3.9 feet, by adding 2 feet of system sand to each side, resulting in a total width of 13 ft.

Calculate the modified design system sand bed area to ensure the minimum sand bed area is met.

Design Bed Area = (Design Conduit Row Length + 2) x (Design Bed Width)
Design Bed Area = (55 ft + 2) x (13 ft) **= 741 ft^2**

INFORMATION FOR SYSTEM OWNERS

Basic rules of onsite sewage treatment system use and care apply to the ATL System. System owners shall operate the system in accordance with the procedures and specifications of all state and local regulations, as well as the following:

System Use and Care

The ATL System is intended for use with residential-strength wastewater within the design daily flow volume. To ensure long-term function of your system:

- Keep daily wastewater flow within design parameters
  - Do not connect the rainwater management system to the ATL System.
  - Direct water from the rainwater management system away from the ATL System.
- Introduce only normal residential wastewater into the system
  - Solvents, paint, pharmaceuticals, aggressive cleaning products, and non-biodegradable items should not enter the ATL system.
  - Solids, such as but not limited to, cigarette butts, diapers, feminine hygiene products, cat litter, wipes and paper towels should not be introduced into the ATL system.
- Maintain leak-free household plumbing fixtures, such as faucets and toilets.
- Do not utilize a garbage grinder.

Operation and Maintenance

The ATL System has no specific operating instructions. Proper use of the system as noted above is the primary operating concern.

Maintenance of the ATL System includes the following:

- If the septic tank has an effluent filter, it should be cleaned by a maintenance provider on an annual basis.
- The septic tank should be pumped on a regular basis and, if concrete, checked for leaks and cracks. The interval for septic tank pumping varies depending upon use. Check with a qualified onsite wastewater system professional or your local health department for the appropriate pumping interval.

For additional concerns about the use, operation, or maintenance of your ATL System, contact the Infiltrator Water Technologies' Technical Department at 1-800-221-4436.

INFORMATION FOR SYSTEM OWNERS

System Start-up
There are no specific requirements for placing the ATL System into service.

Intermittent Use
The ATL System is designed for intermittent use, and requires no special attention if it is to be placed out of use for extended periods of time.

Trouble Shooting
In the event that any of the following indicators arise, contact a licensed onsite wastewater system professional.
- Wastewater back-up into the dwelling
- Persistent septic odor
- Unusually wet area atop and/or around the system
- "Breakout" of effluent along the side of a slope or other landscape feature

Repair
A licensed onsite wastewater system professional shall be contacted when there are indications of malfunction with the ATL System. When visiting the site, the licensed onsite wastewater system professional should, at a minimum, review the following:

- Assess the present condition of the ATL System and the surrounding area (surface drainage, ground cover, etc.)
- Research the history of use, including:
  – water volume use
  – contaminants
- Evaluate the site for groundwater or surface water intrusion, check system sand specification
- Inspect the septic tank, pump tank (if installed), distribution box
- Inspect the ATL System conduit lines
- Check faucet and toilet function

Upon completion of the site visit, the licensed onsite wastewater system professional should contact the local regulator and Infiltrator Water Technologies' Technical Department with the report.

These general installation instructions are for the ATL System in New York. ATL Systems may only be installed according to this manual, Appendix 75-A of NYCRR10 Section 75, and state and local regulations.

If unsure of the installation requirements for a given site, contact your local health department. If unsure of the use of the ATL System, contact Infiltrator Water Technologies. The soil and site evaluation and the design of the onsite system must be reviewed, and a construction permit obtained from the local health department before installation.

Before You Begin

Materials and Equipment Needed

- ☐ ATL System conduits
- ☐ System sand
- ☐ PVC pipe and couplings
- ☐ Backhoe
- ☐ Laser, transit or level
- ☐ Shovel and rake
- ☐ 4-inch inspection port and cap (if required)☐ Endcaps
- ☐ ATL System conduit internal pipe couplers
- ☐ Tape measure

Common practices shall apply to the installation of the ATL System. These include, but are not limited to:

- ☐ avoid soil compaction on the infiltrative surface area, including all areas downslope of a sloped system;
- ☐ use a tracked vehicle for material installation;
- ☐ avoid installation during wet periods; and
- ☐ install the ATL System conduit and system sand on the same day that the system footprint is excavated/exposed.

Excavating and Preparing the Site

NOTE: The ATL System should not be installed during periods when the native soil saturated, as this causes machinery to smear the soil.

1. Stake out the locations of tank(s), pipes, conduit rows, and corners of the system to be tilled/excavated, per design. Set the elevations as shown on the approved plan. [Note: The proper elevation of solid PVC header line going to each ATL conduit row should be determined to ensure compliance with the required system bottom depth as shown on the approved permit. This height may vary dependent on system height and configuration used.]
2. Install sedimentation and erosion control measures.
   NOTE: The installation of temporary drainage swales/berms (surface diversions) may be necessary to protect the site during rainfall events.
3. Excavate the trenches or bed area or till the ground, per design.
4. Rake the trench or bed bottom and sides (when applicable) if smearing has occurred during excavation. Remove large stones and protruding roots.
   NOTE: *Smearing does not occur in sandy soils, so raking is not necessary. In fine textured soils (silts and clays), avoid walking on the excavation bottom to prevent compaction and loss of soil structure*.
5. Verify that each trench, or the bed area, is at the proper elevation, and slope from side-to-side and from end-to-end using a level, transit, or laser.

Installing the System

1. Install the initial layer of 6” system sand per design. System sand should be leveled and stabilized prior to placement of the ATL conduit. **Installer** should retain records verifying that system sand meets ASTM C33 or NYDOT C-33 sand specifications.
2. Remove plastic stretch wrap from ATL conduits.
3. Place ATL conduits on the surface of the system sand with the white stripe/seam in the 12 o’clock position, arranged in the configuration shown on the system design. Using the provided 4-inch-diameter internal pipe couplings, connect the ATL conduits end-to-end to create rows of the required length.
4. ATL conduit shall be installed level. A laser level or transit is recommended to ensure proper grade.
5. ATL conduit rows shall be:
   - installed on a level plane with one another;
   - be installed parallel to any contours;
6. Install distribution piping per plan.
7. Install an endcap on the end of each ATL conduit row that is not connected with piping.
8. Once the ATL conduit is placed on the surface of the system sand and distribution piping is connected to the conduits per design, additional system sand shall be ladled between and to the top of each of the ATL conduit rows depending on trench or bed configuration. System sand shall also be installed on each side and at each end of

the backfilled ATL conduit rows, per the design. This additional system sand shall be stabilized.

Installing Monitoring Port(s)

If observation or monitoring ports are specified in the system design; install per plan detail. If no detail then:

1. Cut a 4-inch PVC pipe to the desired length, ensuring the pipe will extend a minimum of 4 inches above final grade.
2. Drill a minimum of ten ¼" to ½" holes within ½ to 4 inches of the bottom of the pipe, and wrap the bottom end of the pipe in filter fabric.
3. Install the monitoring pipe at the appropriate location, based on site conditions, and ensure the bottom of the pipe is at the bottom of the system sand footprint (at the system sand/native soil interface).
4. Install a removable, water-tight, secure cover cap.

Covering the System

NOTE: *Before backfilling, the system shall be inspected and approved by a representative of the local health department in compliance with state and local ordinances and procedures. Prepare accurate as-built plans.*

1. Material placed around the system sand and atop the ATL conduit may be additional system sand or material which meets the requirements of Appendix 75-A of NYCRR10 Section 75. However, the final 4 inches placed atop or adjacent to the ATL System shall be comprised of material that will sustain plant growth.
2. Backfill the trench or bed by pushing material over the ATL System. **It is best to mound several extra inches of soil over the finish grade to allow for settling.** This also ensures that runoff is diverted away from the system. If driving over the system than maintain a minimum of 12 inches of consolidated cover over the ATL conduits before driving over the system. Please reference Infiltrator Water Technologies' Cover Policy.
   NOTE: *Do not drive over the system while backfilling in sand.*
3. After the system is covered, the site should be seeded or sodded to prevent erosion. The maximum depth of cover over the ATL system is 4 feet
   NOTE: : *If the system is for new home construction, it is important to leave marking stakes along the boundary of the system. This will notify contractors of the system location so they will not cross it with equipment or vehicles*

WARRANTY

INFILTRATOR WATER TechnologiesS, LLC (“Infiltrator”)
ATL SYSTEM STANDARD LIMITED WARRANTY

(a) The structural integrity of the ATL System conduits manufactured by Infiltrator (collectively referred to as “Units”), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator’s installation instructions, is warranted to the original purchaser (“Holder”) against defective materials and workmanship for one year from the date upon which a septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required for the septic system by applicable law, the one (1) year warranty period will begin upon the date that installation of the septic system commences. In order to exercise its warranty rights, Holder must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for those Units determined by Infiltrator to be defective and covered by this Limited Warranty. Infiltrator’s liability specifically excludes the cost of removal and/or installation of the Units.

(b) THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

(c) This Limited Warranty shall be void if any part of the ATL System components is manufactured by anyone other than Infiltrator. The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper siting or improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty.

Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Infiltrator’s installation instructions.

(d) No representative of Infiltrator has the authority to change this Limited Warranty in any manner whatsoever, or to extend this Limited Warranty. No warranty applies to any party other than the original Holder.

The above represents the standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator’s corporate headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.

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U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Water Technologiess. Infiltrator is a registered trademark in France. Infiltrator Water Technologiess is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Water Technologiess.
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Contact Infiltrator's Technical Services Department for assistance at 1-800-221-4436