TW™-Series Septic Tanks
General Installation Instructions

INFILTRATOR® septic tanks

Before You Begin

Infiltrator Systems' TW-Series Septic Tanks must be installed according to state and/or local regulations, which supercede the manufacturer's installation instructions. If unsure of the installation requirements for a particular site, contact the local health department or permitting authority.

Inspect the tank for damage before installation. While illustrations depict the TW-900™ model tank, these instructions also apply to the TW-300™,TW-375™, TW-500™, TW-1050™, TW-1250™, and TW-1500™.

Materials and Equipment Needed

- ☐ TW-Series Tank
- ☐ Manhole lids (included)
- ☐ 6 bolts per lid (included)
- ☐ Rubber gaskets (included)
- ☐ Inlet/outlet tees*
- ☐ Tape measure
- ☐ Pipe, risers, etc.
- ☐ Socket wrench
- ☐ Excavator
- ☐ Shovel
- ☐ Level
- ☐ 5" (127 mm) or 5 1/4" (133 mm) diameter hole saw
- ☐ Utility knife
- ☐ PVC pipe glue with primer

*may be included

Installation Site Selection

1. Avoid installation of the tank in vehicular traffic areas. The tank is designed for non-traffic applications.

2. The maximum vehicle load is a 4,500-pound (20kN) axle load at a soil cover depth of 6 to 48* inches (152 to 1,219 mm).

**18-inch max. burial depth in Florida; 36-inch max. burial depth in North Carolina, Massachusetts, and Oregon.*

Excavating and Preparing the Site

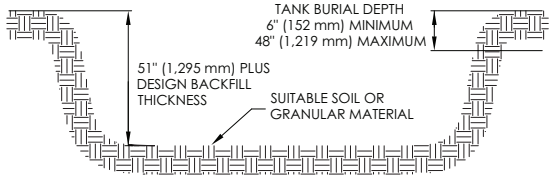
1. The excavation width and length should be 12 to 36 inches (304 to 914 mm) larger than the tank on each side.

2. Excavate to account for 51 inch (1,295 mm) height of tank, 4 inches (101 mm) of bedding (if required), and backfill thickness (permissible cover depth is 0.5 to 4 feet (152 to 1,219 mm) of soil).

3. Inspect bottom of excavation to verify suitability of native soil for tank installation. Soil with large, protruding, or sharp stones or other similar objects that may damage tank are not suitable.

4. The tank may be bed either in suitable native soil (see Backfilling the Tank section) or a minimum 4-inch (101 mm) layer of pea stone, sand, gravel, or other similar material having particles less than 3 inches (76 mm) in diameter.

5. Create a uniform, level bedding surface to ensure that the bottom of tank is uniformly supported at the base of the excavation. Verify that the base of excavation is flat.



Installing the Tank

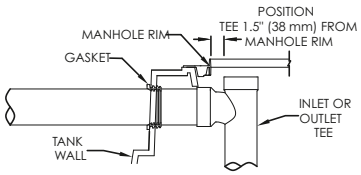
1. If the tank inlet and outlet penetrations are not drilled, drill holes (see Inlet and Outlet Hole Locations section). The gaskets supplied with the tank are compatible with Schedule 40 and SDR 35 pipe using a 5 1/4-inch (133 mm) hole saw. If using an alternative gasket (not supplied with the TW-series tank) sized for Schedule 40 pipe only (having a larger inside diameter), use a 5-inch (127 mm) hole saw.

2. Install the rubber gaskets at the inlet and outlet.

3. Slide the inlet and outlet pipes* through the gaskets.

**For North Carolina, the inlet pipe shall be a straight pipe with no tee.*

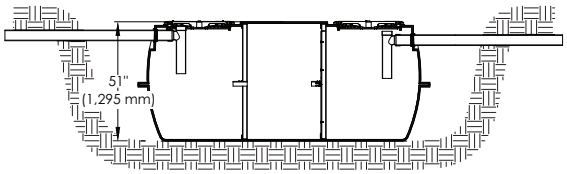
4. Horizontally position the tee as shown in the detail below.



**For Illinois, 6-inch (152 mm) drop required for inlet tee.*

5. Using lifting lugs, lower tank into excavation with tees in place.

6. Install lid, inlet and outlet piping, and risers (see Installing the Riser section) as necessary.



Backfilling the Tank

Note: The Infiltrator TW-Series Tanks do not require filling with water prior to backfill placement.

1. Backfill with suitable native soil. If native soil is unsuitable, replace unsuitable fraction with suitable soil.

2. Suitable soil shall include soil textural classes defined in the United States Department of Agriculture soil triangle. Suitable soil textural classes are based on the tank installation depth, as measured from finished grade to the top of tank.

a) For a tank installation depth of 0.5 to 2.0 feet (152 to 610 mm), suitable soil textures include:

- **i.** Sand
- **ii.** Loamy sand
- **iii.** Sandy loam
- **iv.** Loam
- **v.** Sandy clay loam
- **vi.** Sandy clay
- **vii.** The following, assuming that the sand particle fraction by weight (i.e. % that would be retained on No. 200 sieve, as per ASTM D2487) is greater than 30%: silt loam, clay loam, and clay
- **viii.** The following, assuming that the sand particle fraction by weight (i.e., % that would be retained on No. 200 sieve, as per ASTM D2487) is less than 30% and the soil is shown to be dilatant (refer to Step 5 below for simple dilatancy test to be conducted in the field): silt loam, silt, clay loam, silt clay loam, silty clay, and clay

b) For a tank installation depth that is greater than 2.0 feet and up to 4.0 feet (610 to 1219 mm), suitable soil textures include:

- **i.** Sand
- **ii.** Loamy sand
- **iii.** Sandy loam
- **iv.** Loam
- **v.** Sandy clay loam
- **vi.** Sandy clay
- **vii.** Silt loam, clay loam, and clay having at least a 30% sand particle fraction by weight (i.e., % that would be retained on No. 200 sieve, as per ASTM D2487).

3. Backfill should not have stones greater than 3 inches in diameter or excessive clods that do not break apart during placement and compaction. Backfill must be capable of occupying the spaces between the tank ribs.

4. Standard field soil classification methods shall be used to determine the soil textural class.

5. Under most circumstances, the determination of soil dilatancy will not be required. Dilatancy shall be determined in the field using a test that does not require specialized equipment, per ASTM D2488, Section 14.3, and as described below.

a) Mold a 1/2-inch-diameter (13 mm) soil test specimen in the palm of the hand. The test specimen shall be representative of the prospective tank backfill soil.

b) Mold the test specimen, adding water if necessary, until it has a soft, but not sticky consistency.

c) Smooth the soil ball in the palm of one hand with a spatula or similar instrument.

d) Shake the soil sample by striking the hand vigorously against the other hand approximately 5 times. Do not strike hand in a manner that results in an injury.

e) Immediately following shaking, gently squeeze the soil in the palm of the hand.

f) Repeat shaking test if necessary to evaluate soil.

g) Note whether water appears on the surface of the soil specimen during shaking and squeezing.

i. If water appears on and disappears from the surface of the soil specimen, the soil is dilatant, and is suitable.
ii. If no visible change or only a slight visible change in the soil specimen occurs due to shaking or squeezing, the soil is not dilatant, and is unsuitable.

6. Do not backfill top of tank before sidewalls are completely backfilled.

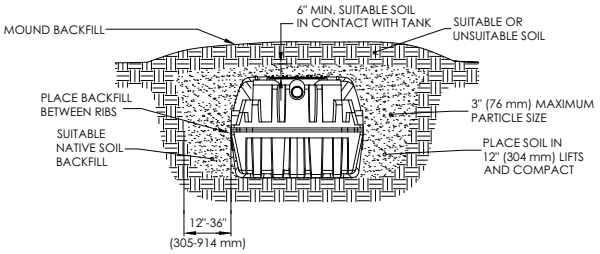
7. Place backfill around the four sidewalls in a progressive, alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (304 mm) tolerance.

8. Continue to place backfill along the sidewalls in 12-inch (304 mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.

9. Compact backfill material either by hand tamping or mechanical compaction (includes backhoe bucket). Compact each lift prior to placement of next lift. Compact backfill from tank walls to excavation sidewalls.

10. Complete backfilling and grade the area.

11. A minimum 6-inch-thick layer of suitable soil must be placed over the top of the tank. The balance of backfill placed to finish grade above the tank may be either suitable or unsuitable soil.



Installing Under Shallow Groundwater Conditions

If the seasonal high groundwater table has the potential to rise 18 inches (457 mm) or more above the tank bottom, anti-buoyancy measures are warranted, as follows:

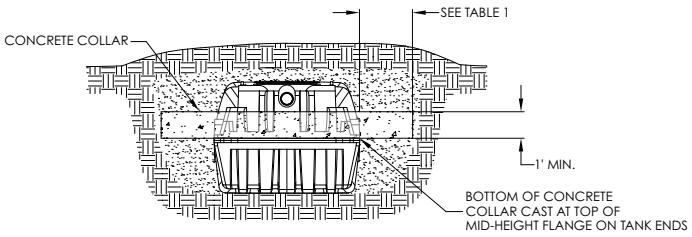
1. Option 1 - Physically Secure Tank

A ballast may be constructed using cast-in-place concrete (minimum 3,000 psi at 28 days and 6% air entrainment). Concrete shall be cast in contact with the exterior surface of the tank to allow interlock with sidewall ribs and mid-height flange at tank ends. Minimum collar dimensions are provided in the chart and figure below. The collar minimum height and width are 1 foot (0.3 m).

TABLE 1 - CONCRETE COLLAR MINIMUM DIMENSIONS

Dimension	TW-900	TW-1050	TW-1250	TW-1500
Length in ft (m)	13.0 (3.9)	15.0 (4.6)	17.0 (5.2)	20.0 (6.1)
Width in ft (m)	9.5 (2.9)	9.5 (2.9)	10.0 (3.0)	10.0 (3.0)

For the TW-300, TW-375, and TW-500 cast 1-foot-high, 2-foot-wide (0.3 m x 0.6 m) concrete ring immediately above widest part of tank belly.



2. Option 2 - Long-Term Groundwater Control

a) If site is amenable to construction of a groundwater control system, groundwater control may include:

i) Underdrain – Bed and backfill the tank with clean pea gravel or equivalent pervious material. Pipe groundwater by gravity flow away from tank and drainfield.

ii) Interceptor trench - Construct interceptor trench upgradient of tank to maintain a groundwater table no higher than 18 inches (457 mm) above bottom of tank. Pipe groundwater away from tank and drainfield.

b) Groundwater control is not applicable if prohibited by regulation or law, or tank location is subject to flooding.

3. Short-Term Groundwater Control

a) If necessary during tank installation, maintain dry conditions by expanding excavation to create groundwater collection sump. Pump groundwater out of sump.

Installing the Riser

1. Compatible risers include 24-inch (600 mm) diameter products from EZset by Infiltrator, Polylok®, Inc., and Tuf-Tite® Corporation, in addition to 24-inch (600 mm) diameter corrugated HDPE and IPEX Ultra Rib PVC pipe.

2. Oregon watertightness testing to include filling with water at least 2 inches above riser connection, with no more than 1 gallon leakage per 24 hours, per OAR 340-073-0025(3).

Note: Installation guidance for connection of the riser to the TW-series tank is available upon request.

Installing Pumps and Related Equipment

Pumps shall be supported on a stable, level 16 x 16 inch (406 x 406 mm) platform positioned on the bottom of the tank. Precast concrete block is acceptable pump support material. One 16 x 16 inch block or two 8 x 16 inch (203 mm x 406 mm) side-by-side blocks may be used. The support block(s) shall be placed below an access opening and level upon the ribs on the tank bottom. If two blocks are used, they shall be oriented perpendicular to the ribs on the tank bottom for stability.

Installation of products such as electrical conduit and wiring, pumps, water level control equipment, valves, siphon equipment, etc. shall be in accordance with the product manufacturer's instructions and compliant with applicable state or local rules and regulations. Where possible, appurtenances shall be installed to facilitate maintenance and repair access via the tank access openings.

General Specifications

- Failure to comply with installation instructions may void warranty.
- Prior to ground disturbance, check for subsurface obstructions and utilities in conformance with local requirements.
- Tanks are only designed for installation underground.
- Operating water temperature shall be less than 140° F (60° C).
- Tanks are not fire resistant. Store away from ignition sources.
- Tanks are not suitable for potable water storage applications.
- Tanks are recommended for use as septic, rainwater/stormwater storage, and pump tanks only.

Table 1: TW-Series Polyethylene Tank Nominal Volume Chart

Height[1] (in)	Total Liquid Volume in Tank at Indicated Height													
	TW-300		TW-375		TW-500		TW-900		TW-1050		TW-1250		TW-1500	
	Gal	L	Gal	L	Gal	L	Gal	L	Gal	L	Gal	L	Gal	L
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	2	3	12	2	8	10	37	11	43	14	53	17	64
2	2	9	8	31	5	19	22	82	25	95	30	115	37	140
3	5	19	15	57	8	30	41	156	48	181	58	218	71	267
4	9	34	23	85	13	49	62	236	72	273	87	330	107	404
5	15	57	30	115	20	76	84	317	97	368	117	444	143	543
6	21	79	39	147	28	106	106	400	122	463	148	558	180	683
7	28	106	47	180	37	140	128	483	148	560	178	674	218	825
8	36	136	56	214	48	182	150	567	174	657	209	791	256	968
9	43	163	66	249	59	223	172	653	200	756	240	910	294	1,112
10	50	189	75	285	71	269	195	739	226	855	272	1,029	332	1,257
11	57	216	85	321	83	314	218	826	252	956	304	1,149	371	1,404
12	65	246	95	358	95	360	242	915	279	1,057	336	1,270	410	1,551
13	72	273	105	396	105	397	265	1,004	306	1,160	368	1,393	449	1,700
14	80	303	115	434	118	447	289	1,093	334	1,263	400	1,516	489	1,849
15	87	329	125	473	130	492	313	1,184	361	1,367	433	1,640	528	2,000
16	95	360	135	512	142	537	337	1,276	389	1,472	466	1,765	569	2,152
17	102	386	146	552	154	583	361	1,368	417	1,578	500	1,892	609	2,305
18	110	416	157	595	166	628	386	1,461	445	1,685	533	2,019	650	2,459
19	118	447	169	639	179	678	411	1,555	474	1,792	567	2,146	690	2,614
20	126	477	180	682	191	723	436	1,650	502	1,901	601	2,275	732	2,769
21	134	507	192	726	204	772	462	1,747	532	2,012	636	2,407	774	2,928
22	141	534	203	770	216	818	488	1,847	562	2,126	671	2,541	816	3,091
23	149	564	215	814	228	863	515	1,948	592	2,241	708	2,678	860	3,256
24	156	590	226	855	241	912	542	2,053	624	2,361	745	2,819	905	3,425
25	164	621	236	894	253	958	569	2,154	654	2,475	781	2,955	948	3,589
26	171	647	246	932	265	1,003	595	2,251	683	2,587	815	3,086	990	3,747
27	178	674	256	971	277	1,048	620	2,346	712	2,695	849	3,215	1,031	3,903
28	186	704	267	1,009	289	1,094	644	2,439	740	2,802	883	3,342	1,072	4,057
29	193	731	276	1,046	300	1,136	669	2,533	769	2,909	916	3,469	1,112	4,210
30	200	757	286	1,083	312	1,181	693	2,625	796	3,015	950	3,594	1,152	4,362
31	208	787	296	1,119	324	1,226	718	2,717	824	3,120	982	3,719	1,192	4,514
32	215	814	305	1,154	336	1,272	741	2,807	852	3,223	1,015	3,842	1,232	4,663
33	222	840	314	1,189	347	1,313	765	2,895	878	3,325	1,047	3,964	1,271	4,810
34	230	871	323	1,222	359	1,359	788	2,983	905	3,426	1,079	4,084	1,309	4,956
35	236	893	332	1,255	370	1,400	811	3,070	931	3,526	1,110	4,203	1,347	5,101
36	243	920	340	1,286	382	1,446	834	3,155	957	3,624	1,141	4,320	1,385	5,243
37	251	950	348	1,317	393	1,488	856	3,240	983	3,721	1,172	4,436	1,422	5,384
38	258	977	356	1,346	404	1,529	877	3,320	1,008	3,814	1,201	4,548	1,458	5,521
39	264	999	363	1,373	416	1,575	898	3,398	1,031	3,904	1,230	4,657	1,494	5,654
40	271	1,026	370	1,400	427	1,616	920	3,484	1,057	4,003	1,261	4,772	1,532	5,798
41	278	1,052	376	1,425	438	1,658	938	3,549	1,078	4,080	1,286	4,869	1,562	5,915
42	285	1,079	383	1,449	449	1,699	957	3,623	1,100	4,166	1,314	4,972	1,596	6,042
43	292	1,105	389	1,471	460	1,741	976	3,695	1,123	4,249	1,340	5,074	1,629	6,167
44	299	1,132	394	1,492	471	1,783	994	3,765	1,144	4,331	1,366	5,172	1,661	6,288
45	304	1,151	399	1,511	481	1,821	1,011	3,829	1,164	4,406	1,390	5,263	1,690	6,399
46	310	1,173	404	1,530	490	1,855	1,025	3,878	1,179	4,465	1,410	5,337	1,715	6,492
47	313	1,185	409	1,547	498	1,885	1,036	3,923	1,193	4,517	1,427	5,402	1,737	6,574
48	313	1,185	413	1,565	502	1,900	1,045	3,954	1,203	4,553	1,439	5,446	1,750	6,626
49	313	1,185	417	1,577	504	1,908	1,055	3,994	1,212	4,588	1,448	5,481	1,762	6,669

Notes: 1. Height measured from inside surface at bottom of corrugation in tank.
2. Gal = gallons
3. L = liters

Inlet and Outlet Hole Locations

Drill height markings are provided on the Infiltrator TW-900, TW-1050, TW-1250, and TW-1500 to serve as a guide for inlet and outlet hole locations. Markings “A” (lower) and “B” (upper) are located at the inlet end. *Note: holes may be drilled at the end or side inlet and outlet locations.* Markings “C” (lower), “D” (middle), and “E” (upper) (TW-900 only) are located at the outlet end. The circular centering symbol next to the marking letter indicates the centerpoint location for the hole saw. The pilot drill bit on the hole saw should be positioned on the centering symbol to properly align the hole saw.

The drill height markings below are provided to set the inlet and outlet invert heights based on state and/or local regulations. The chart below provides the proper inlet and outlet drill points. Note that state, provincial and local regulatory requirements take precedence over the information provided in the table below.

State or Province	Inlet Drill Location	Outlet Drill Location	Invert Drop (in) [mm]	Inlet Invert Height[2] (in) [mm]	Outlet Invert Height[2] and Liquid Level (in) [mm]
DE, FL, IA, MA, ON	A	D	2 [51]	42 [1,067]	40 [1,016]
AR, CA, CO, CT, ID, IN[1], KS, KY[1], MO, MT, ND, PA, SD, TX, VT, WV[1]	B	C	3 [76]	42.75 [1,086]	39.75 [1,010]
All Others	A	C	2.25 [57]	42 [1,067]	39.75 [1,010]

Notes:
1. Florida, Indiana, Kentucky, Oregon, and West Virginia tanks are factory drilled.
2. Invert heights are measured from the interior surface at the bottom of the tank.

INFILTRATOR SYSTEMS, INC. (“Infiltrator”)
INFILTRATOR® TW™-SEPTIC TANK LIMITED WARRANTY

FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Infiltrator TW™ Septic Tank. A Septic Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Septic Tank.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FINESSE FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

CONDITIONS AND EXCLUSIONS
There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Septic Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Septic Tank contrary to the installation instructions and disposing of chemicals or other materials contrary to normal septic tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of a Septic Tank 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 a Septic Tank.

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