

Installation Instructions for EZflow Systems in Washington



Washington Department of Health (DOH) has granted drainfield sizing reductions based on the sizing identified on Tables 1 through 3. This action is based on recommendations from the On-Site Wastewater Technical Review Committee (TRC), a review of reports establishing EZflow engineered sizing criteria, and studies identifying system performance of EZflow products in other states.

EZflow systems have demonstrated superior performance over stone and other alternative drain systems. The versatility, lightweight, ease of installation and overall performance allowed by the use of EZflow's many configurations make EZflow the leader in drainfield and drainage alternative technology.

Materials and Equipment needed

- EZflow Bundles
- EZflow Paper
- EZflow Internal Pipe Couplers
- Pipe for Header and Inlet
- Backhoe/Excavator
- Laser, Transit, or Level
- Shovel & Rake

1203H Installation Instructions

The instructions for installation of EZflow products are given below. This product must be installed in accordance with state rules defined in the *Recommended Standards & Guidance for Gravelless Drainfield Systems*, effective July 2007, as well as the local health department's current design manual.

1. EZflow drainfields are adaptable to gravity flow serial and drop box distribution in accordance with requirements for gravel trenches. All drainfields are adaptable to pressurized distribution, dosing, alternating drainfield, mounds and sand filter systems.
2. EZflow drainfields shall comply with other design features, such as trench and vertical separation, and maximum lateral lengths.
3. After the local health department or designer has determined sizing, configuration, and layout for the EZflow systems, stake or mark with paint the location of trenches and lines. Be careful to set correct tank, invert pipe, header line or distribution box and trench bottom elevations before installation of pipe bundles.
4. EZflow EPS bundles are flexible and can fit in curved trenches as may be necessary to avoid trees, boulders, or other obstacles.
5. Remove plastic stretch wrap prior to placing bundles in the trench(es). Remove any plastic bags in the trench before system is covered.
6. When installed in a trench, the trench should be dug to a minimum width of 36 inches. This not only saves labor in excavation, but also provides better load-bearing capacity after backfilling is complete.

7. Place EZflow bundle(s) in the EZflow configuration approved by system design permit specified for the particular site. The top or center-most bundles containing pipe are joined end to end with an internal pipe coupler. Any additional aggregate only bundles that may be required, should be butted against the other aggregate-only bundles and do not require any type of connection.
8. The top of each 1203H-GEO cylinder contains a filter fabric pre-manufactured in between the netting and aggregate. The fabric is inserted to prevent soil intrusion. The installer shall make sure that the fabric is on top and is in contact with the fabric contained in the adjacent cylinder before backfilling.
9. If not using a GEO product, EZflow systems require covering over the top of the system with a cover material approved by the manufacturer.
10. Header or lead lines from distribution box or device will be connected to the top or center-most pipe bundle in each trench or inserted into the pipe.
11. The EZflow Drainfield Systems should be installed in the bottom of the trench/bed level, ± 0.5 inches. On sloping sites the trench and laterals must run parallel to the natural ground contours. All continuous adjoining 10-foot cylindrical bundles are placed end to end with the central bundle distribution pipes interconnected.
12. Monitoring ports are to be installed on each drainfield line.
13. Final construction inspections shall comply with Sec. 14501.
14. Final coutouring and landscaping should be done in a manner to promote surface water runoff.

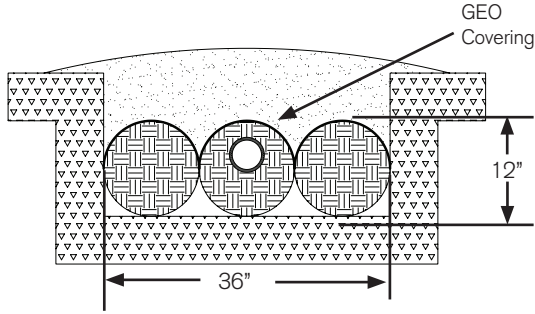
Repeat steps 1 thru 14 for each required trench.

1003H and 1003T Installation Instructions

1. 1003H and 1003T are approved for use by the Wasington DOH and installation instructions are the same as 1203H instructions above.
2. 1003H is installed in a 30 inch wide trench and has an approved infiltrative surface of 2.5 SF/LF.
3. 1003T is installed in a 24 inch wide trench and has an approved infiltrative surface of 2.0 SF/LF.

Approved EZflow Products

Standard Disposal Systems 1203H-GEO/1203H Horizontal System



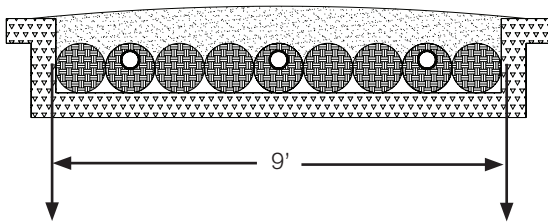
Sizing Equivalent for 1203H-GEO/1203H System

40% Sizing Adjustment:
 _____ sq ft. X 0.20 = _____ linear ft.

EXAMPLE: - 300 sq ft. required.
 300 X 0.20 = 60 lft.
 Use 60 lf.

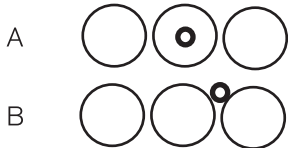
20% Sizing Adjustment:
 _____ sq ft. X 0.27 = _____ linear ft.

1200 Bed System



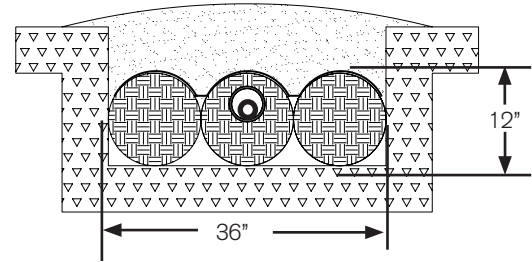
1200 Horizontal Drainfield System may be used in a bed system with the three cylindrical bundles placed in rows next to each other. This system will replace the conventional method at a ratio of one to one. The convenience of this system can help determine the exact layout and cost, as well as saving on installation time. This system may be adapted to a low pressure system as shown in the LPP 1200 Bed System drawing.

1203 LPP Trench Systems



- A. Pressure pipe through the 4" pipe bundles.
- B. Pressure pipe laying on top of the bundles. Pressure pipe orifices should be at 6 O'Clock position (straight down).

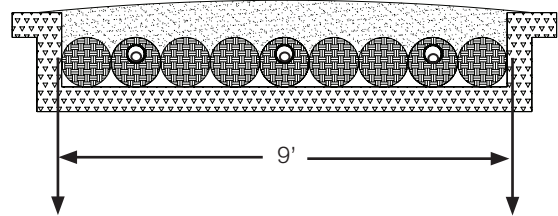
Low Pressure Pipe 1203 H Horizontal System



The LPP pipe can also be installed on the trench bottom and covered by EZflow bundles if shields are used over the orifices at the 12 O'Clock position.

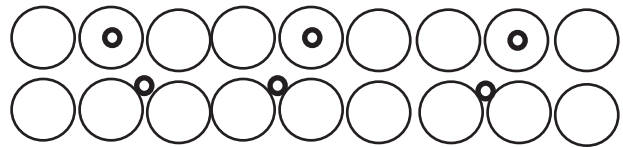
This system replaces the conventional method. This system may be used to run your low pressure PVC pipe, allowing uniformity as well as consistency throughout the installation process.

Low Pressure Pipe 1200 Bed System



Horizontal Drainfield System may be used in a bed system with the three cylindrical bundles placed in rows next to each other (as wide as the system design requires.) This system will replace the conventional method at a ratio of one to one. The convenience of this system can help determine the exact layout and cost, as well as saving on installation time.

1200 LPP Bed Systems



Approved EZflow Products

Lineal Feet of Trench Per Bedroom Flow Rate = 120 G.P.D. / Bedroom

Soil Type	Conventional (3' wide)	EZflow 1203H
1	40 L.F.	40 L.F.
2	40 L.F.	32 L.F.
3	50 L.F.	30 L.F.
4	67 L.F.	40 L.F.
5	100 L.F.	60 L.F.
6	200 L.F.	120 L.F.

NOTES:

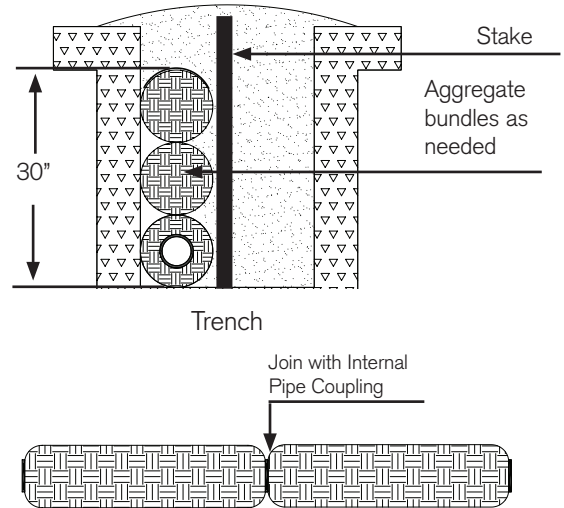
- 1) EZflow 1203H-GEO/1203H:
 - 20% reduction for soil types 2
 - 40% reduction for soil types 3-6
 - Can be installed in soil type 1 at conventional sizing using *Standards & Guidelines for Gravelless Systems*, Sec. 2.3.1 and Sand Filter Standards.
- 2) Per the December 2, 2003 Approval Letter by Mark Saltman, R.S. Supervisor Wastewater Management Program.

Other Drainage Systems

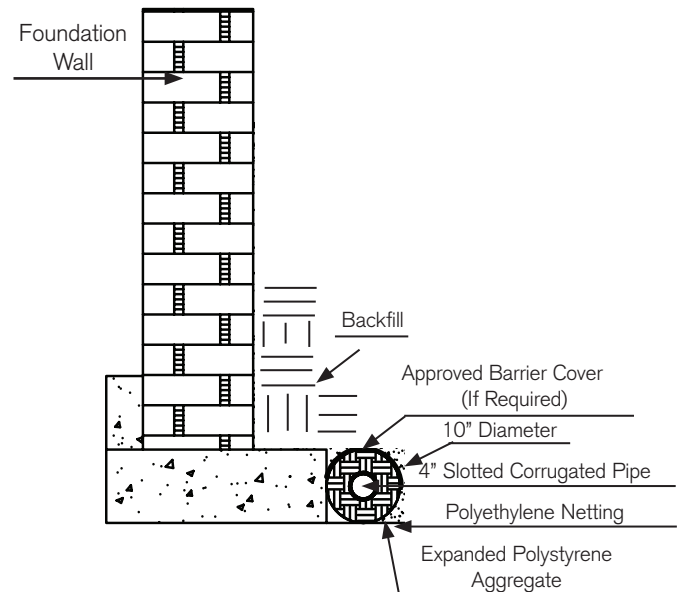
1. During installation of a golf course, farm drain, ground water interceptor or french drain, it is suggested to begin from the point of intended discharge (low point), maintaining upward grade while digging back towards the trouble spot in order to ensure that proper drainage will occur.
2. When using EZflow products where water is present during installation, care should be taken to keep the water out of the trench during installation. This can be achieved by diverting the water to the side of the trench by digging a hole and allowing the water to drain out of the trench.

Curtain Drain

Seven, ten or twelve-inch Vertical Systems may be used to construct curtain drains. The cylinder placed at the bottom of the trench shall contain perforated piping. Additional cylinders without pipe may be staked above the base cylinder in order to provide desired aggregate/media depth. It may be necessary to stake cylinders to provide a vertical configuration. Trench width may vary per construction site.



Foundation Drain Detail





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