

Installation Instructions for EZflow Systems in Minnesota



In accordance with Ch 7083, Minnesota Pollution Control Agency has reviewed and registered the following EZflow products for use in trenches, beds, at-grades and mounds per technical requirements in Chapter 7080 and 7081.

Product	Sizing	Trench Width
• 1202H / 1202H-GEO	2.0 SF/LF	24" width
• 1203H / 1203H-GEO	3.0 SF/LF	36" width

Any site where EZflow products are installed must meet the design, construction and installation requirements and Location & Isolation distances as noted in rules, Chapter 7080.0170.

An area of suitable soil must be available to install a subsurface sewage treatment system.

Materials and Equipment needed

- EZflow Bundles
- EZflow Geotextile Filter Fabric (if using non-geo product)
- EZflow Internal Pipe Couplers
- Pipe for Header and Inlet
- Backhoe
- Laser, Transit, or Level
- Shovel and Rake

Installation Instructions

The instructions for installation of EZflow products are given below. This product must be incorporated into a design and installed in accordance with Chapter 7080.2200 - 7080.2350 as well as the local units of government current ordinance requirements.

In cases where linear footage required is not in multiples of 10, installer may (a) reduce the product to needed length and refasten netting to the pipe or, (b) use an additional 5 or 10 feet of product to exceed the required trench length.

1. Prior to installing the EZflow system, stake or mark with paint the location of trenches and lines. Be careful to set correct tank, invert pipe, header line or drop box and trench bottom elevations before installation of pipe bundles.
2. Excavation into absorption area is only allowed when soil moisture content is at or less than the plastic limit.
3. Excavate trench to permitted depth. Once the trench is excavated, it shall not be exposed to rainfall prior to placement of the final backfill.
4. The bottom and sides of the soil treatment system to the top of the distribution medium shall be excavated in such a manner as to expose the original soil structure in an un-smearred and un-compacted condition. The trench bottom and sidewalls should be raked if any smearing occurs.
5. Remove plastic EZflow shipping wrap prior to placing bundles in trench(es). Remove any plastic wrap in the trench before the system is covered.

6. Place EZflow bundle(s) in the EZflow configuration approved by system design permit specified for the particular site. The bundles containing pipe are joined end-to-end with an internal pipe coupler. Aggregate-only-bundles shall be butted against the other aggregate-only-bundles and do not require any type of mechanical connection.
7. The distribution pipes for gravity and pressure distribution must be laid level along contour.
8. The top of each 1202H-GEO and 1203H-GEO bundle 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 bundle before backfilling. The span of fabric at each sidewall shall not exceed 180 degree reach (i.e. 9 o'clock to 3 o'clock).
9. Effluent supply pipe from septic tank or drop box will be connected to the pipe bundle in each trench or inserted into the pipe.
10. A vertical inspection port at least 4-inches in diameter shall be installed at the distal end of every trench. The inspection port should be located between a pipe-containing bundle and an adjacent aggregate-only-bundle. For easy installation, the inspection port can be vertically placed onto the trench bottom prior to the placement of the pipe-bundle and aggregate-only-bundle bundle.
11. The inspection pipe must be located at an end opposite from where the sewage tank effluent enters the medium. The inspection pipe must have 3/8" or larger perforations spaced vertically no more than 6" apart.
12. EZflow EPS bundles are flexible and can fit in curved trenches as necessary to avoid trees, boulders, or other obstacles.
13. The EZflow EPS Aggregate bundles not containing GEO must be covered with 36" to 48" wide non-woven geotextile or other approved barrier materials. The two outside bundles shall not be covered past the 3 or 9 o'clock position at risk of clogging sidewall areas.
14. The trenches or seepage beds shall be backfilled and crowned above finished grade to allow for settling. The top six inches of soil shall have the same texture as the adjacent soil.
15. A vegetative cover shall be established over the soil treatment system and shall be protected until the cover is established. The vegetative cover shall not interfere with the hydraulic performance of the system and shall provide adequate frost and erosion protection.

Repeat steps 1 thru 15 for each required trench.

EZflow Sizing

**TABLE 1: TRENCH SIZING FOR CLASSIFICATION I DWELLINGS¹ AND EFFLUENT TREATMENT LEVEL C
EZflow 1203H BUNDLES
SIZING CREDIT PER TRENCH FOOT = 3 SF/LF**

Soil Loading Rate (gpd/sf) ²	Number of Bedrooms			
	2 Linear Feet ⁴	3 Linear Feet ⁴	4 Linear Feet ⁴	5 Linear Feet ⁴
1.20 ³	83	125	167	208
0.78	128	192	256	321
0.60	167	250	333	417
0.50	200	300	400	500
0.45	222	333	444	556
0.24	417	625	833	1042

Notes:

1. Sizing for Classification II and III dwelling shall use design flows in Table IV of Section 7080.1850.
2. Soil loading rates and corresponding soil texture groups are based on Table IX of Section 7080.2150.
3. Rapidly permeable soil textures require conformance with Section 7080.2260, including, but not limited to pressure distribution of effluent.
4. Bundles are produced in 5' and 10' lengths. Installer may round trench length to next 5' or 10' length or cut the last section of the product using Infiltrator's protocol for cutting EZflow bundles to achieve the specified trench length.

**TABLE 2: TRENCH SIZING FOR CLASSIFICATION I DWELLINGS¹ AND EFFLUENT TREATMENT LEVEL C
EZflow 1203H DOUBLE STACKED BUNDLES AT 34% BOTTOM REDUCTION²
SIZING CREDIT PER TRENCH FOOT = 4.55 SF/LF**

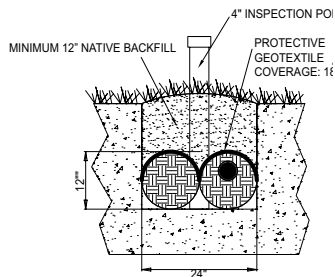
Soil Loading Rate (gpd/sf) ²	Number of Bedrooms			
	2 Linear Feet	3 Linear Feet	4 Linear Feet	5 Linear Feet
1.20 ³	76 ⁵	83	110	138
0.78	85	127	170	212
0.60	110	165	220	275
0.50	132	198	264	330
0.45	147	220	294	367
0.24	275	413	550	687

Notes:

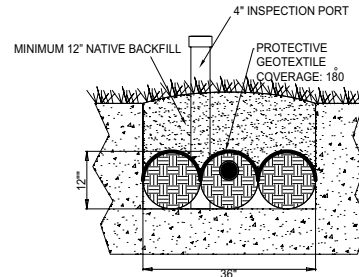
1. Sizing for Classification II and III dwelling shall use design flows in Table IV of Section 7080.1850.
2. As allowed under Section 7080.2210, Subpart 3(B), a bottom area reduction of 34% has been included in the trench sizing calculation.
3. Soil loading rates and corresponding soil texture groups are based on Table IX of Section 7080.2150.
4. Rapidly permeable soil textures require conformance with Section 7080.2260, including, but not limited to pressure distribution of effluent.
5. Minimum trench length required by Infiltrator.
6. The 34% bottom area reduction is only applicable to Infiltrator's 1203H when double stacked.
7. Bundles are produced in 5' and 10' lengths. Installer may round trench length to next 5' or 10' length or cut the last section of the product using Infiltrator's protocol for cutting EZflow bundles to achieve the specified trench length.

Registered EZflow Products

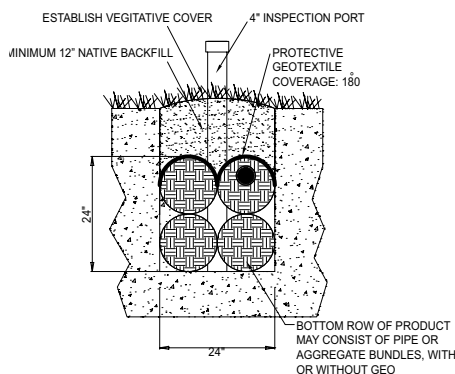
EZflow 1202H/1202H-GEO



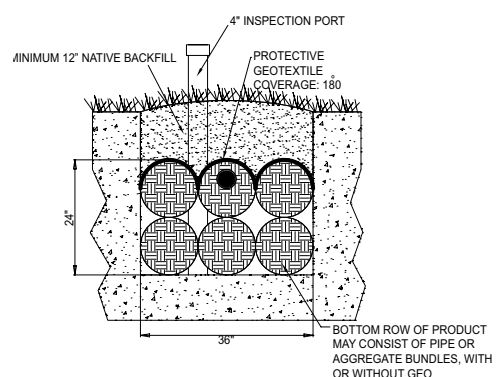
EZflow 1203H/1203H-GEO



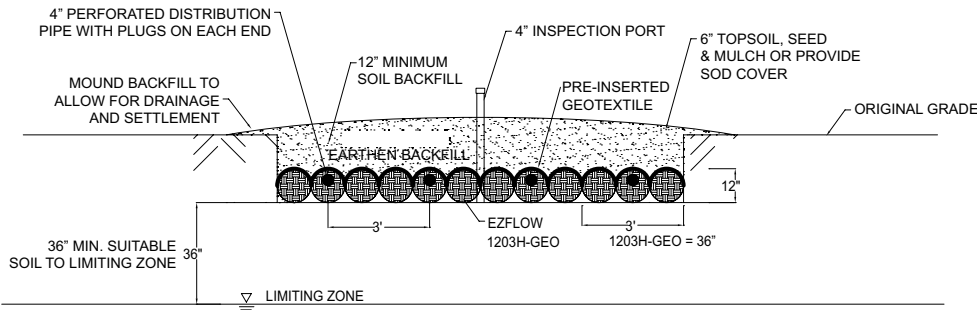
EZflow 1202H/1202H-GEO Double Stack



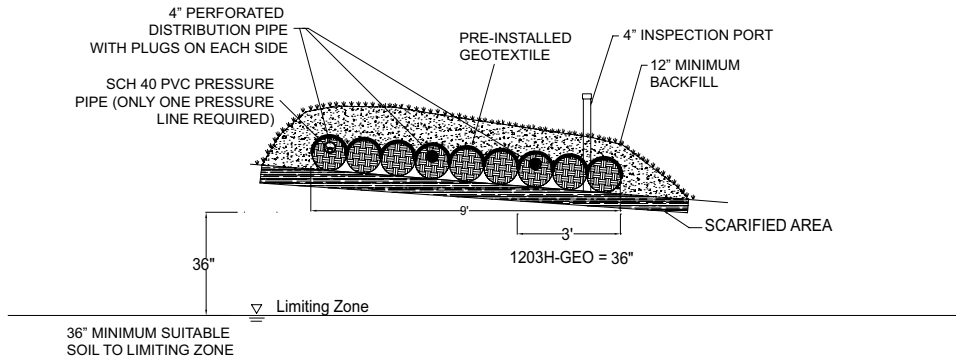
EZflow 1203H/1203H-GEO Double Stack



Typical Bed Layout Containing EZflow 1203H / 1203H-GEO



Typical At-Grade Layout Containing EZflow 1202H / 1202H-GEO



Notes:

1. Both EZflow configurations with and without "GEO" must be covered with an external non-oven geotextile fabric in at-grade applications.
2. In at-grade systems, the use of pressure distribution must comply with 7080.2230, Subp. 3, C. At-grades located on sites sloping 1% or greater require only one distribution pipe located on the upslope edge of the distribution media.

The area of the sewage treatment system shall not be used for vehicular traffic, parking, or underground utilities, to include water lines. Dozers, trucks, and other heavy vehicles shall not be allowed to run over the septic tank, field lines or other parts of the system. Sod or seed the drainfield area for erosion control, frost prevention and nutrient up take as may be required by Permit or local policy.

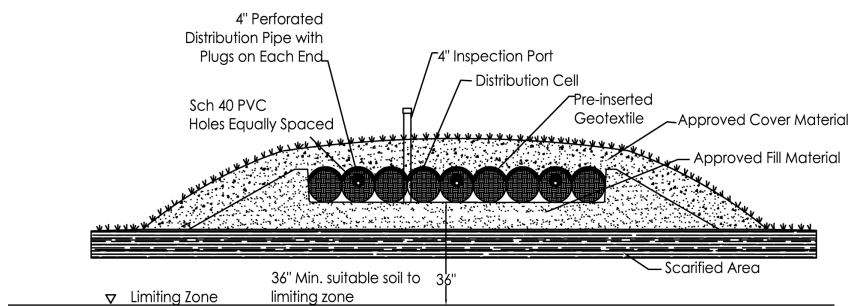
1203H Bed System

1. The 1203H System may be used in a bed system with the three cylindrical bundles placed in rows next to each other. (See drawing). The 1203H configuration is replicated to gain the approved bed sizing.
2. This configuration is installed at foot/foot with a conventional gravel bed system.

1203H At-Grade System

1. The 1203H At-Grade System may be used in an At-Grade system with the three cylindrical bundles placed in rows next to each other. (See drawing). The 1203H configuration is replicated to gain the approved At-Grade sizing.
2. This configuration is installed at foot for foot with a conventional gravel At-Grade system.

Typical Mound Layouts Containing EZflow 1203H / 1203H-GEO



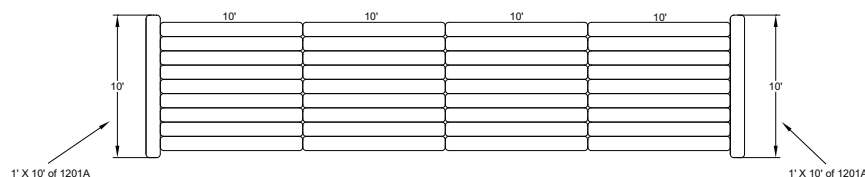
7080 Sizing for a Distribution Cell for a 3 Bedroom Residence:

150 GPD per Bedroom x 3 Bedroom = 450 GPD
 $450 \text{ GPD} \div 1.2 \text{ GPD/SF} = 375 \text{ SF}$ of Distribution Cell

Sizing for the Same Mound with EZflow Product:

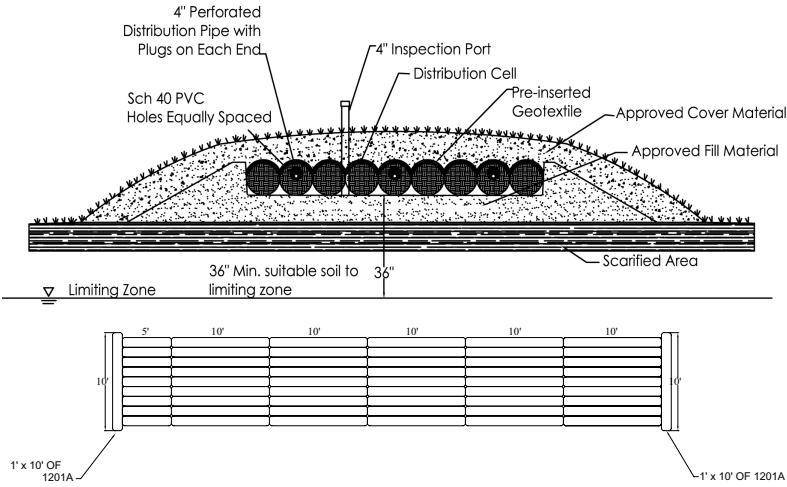
$9' \times 40' = 360 \text{ Sq Ft}$
 $1' \times 10' = 10 \text{ Sq Ft}$
 $1' \times 10' = 10 \text{ Sq Ft}$

Total Square Footage = 380 Sq Ft



Note: Both EZflow configurations with and without "GEO" must be covered with an external non-oven geotextile fabric in mound applications.

Minnesota 4 Bedroom Mound System



7080 Sizing for a Distribution Cell for a 4 Bedroom Residence:

150 GPD per Bedroom x 4 Bedroom = 600 GPD
 600 GPD ÷ 1.2 GPD/SF = 500 SF of Distribution Cell

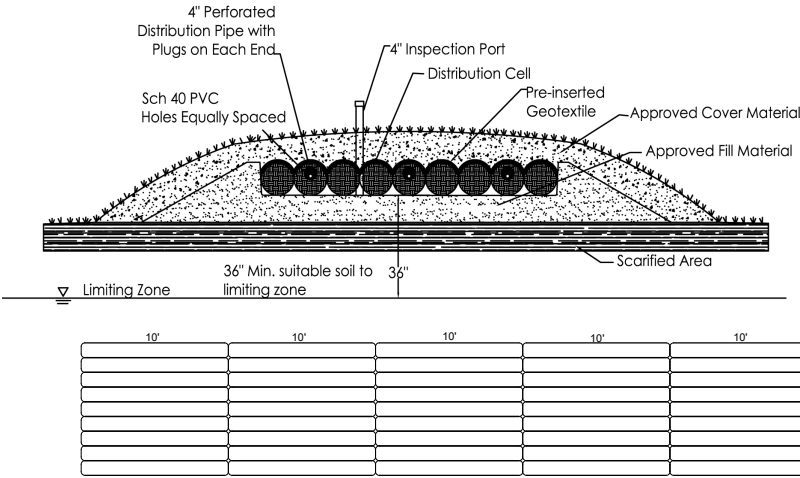
Sizing for the Same Mound with EZflow Product:

9' x 55' = 495 Sq Ft
 1' x 10' = 10 Sq Ft
 1' x 10' = 10 Sq Ft

Total Square Footage = 515 Sq Ft

Note: Both EZflow configurations with and without "GEO" must be covered with an external non-oven geotextile fabric in mound applications.

Minnesota 5 Bedroom Mound System



7080 Sizing for a Distribution Cell for a 5 Bedroom Residence:

150 GPD per Bedroom x 5 Bedroom = 750 GPD
 750 GPD ÷ 1.2 GPD/SF = 625 SF of Distribution Cell

Sizing for the Same Mound with EZflow Product:

9' x 70' = 630 Sq Ft
 Total Square Footage = 630 Sq Ft

Note: Both EZflow configurations with and without "GEO" must be covered with an external non-oven geotextile fabric in mound applications.

EZflow Inspection

As required by state or local regulations, be sure to obtain proper installation inspection and authorization from the local government prior to covering the system. Septic tank, drop box, trench bottom, grade, depth, and cover shall be in accordance with state rules and regulations unless otherwise specified.

Maintenance

Per Chapter 7080, the owner shall regularly have his system assessed, but in no case, less frequently than every three years.



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