

January 24, 2022

Mr. Dennis Hallahan, P.E.
Technical Director
Infiltrator Water Technologies
4 Business Park Road
Old Saybrook, CT 06475

RE: Product Registration Renewal #4 - Notice of Proprietary Distribution Product Listing

Description: Proprietary Distribution Product - Gravelless Distribution Media
Manufacturer: Infiltrator Water Technologies
Product Name: EZflow™
Model Numbers: 0701A, 0701A-GEO, 1202H, 1202H-GEO, 1203H and 1203H-GEO

Dear Mr. Hallahan:

Thank you for your application for product renewal for Infiltrator Water Technologies EZflow series. This product is a geosynthetic bundled expanded polystyrene aggregate, which includes the following model numbers: 0701A, 0701A-GEO, 1202H, 1202H-GEO, 1203H and 1203H-GEO. The EZflow models 0701A-GEO, 1202H-GEO and 1203H-GEO are manufactured with a pre-inserted geotextile fabric beneath the netting that spans across the top 180 degrees of each cylinder.

In accordance with Minn. R. Ch. 7080 through 7083, the Minnesota Pollution Control Agency (MPCA) has reviewed Infiltrator Water Technologies submitted materials for proprietary distribution product registration. Based on the submitted documentation, the MPCA finds that the EZflow products are eligible to be registered and meet the requirements for proprietary distribution product registration.

As such, the EZflow configurations are registered for use in trench, seepage bed, at-grade and mound applications, in accordance with Minn. R. Ch. 7080.2200 through 7080.2350 and the manufacturer's installation requirements. Gravity and pressure distribution requirements, as described in Minn. R. Ch. 7080.2050, shall be met. Table 1 lists registered EZflow configurations and dimensions as presented in the application submittal, dated September 18, 2009, and related documentation, as well as subsequent modification requests.

The EZflow cylinders are either seven or twelve inches in diameter ($\pm \frac{1}{2}$ -inch) and are five or ten feet long (± 2 inches). The product nomenclature or naming depicts the diameter, the number of bundles and orientation of the product; for example, the model 1203H consists of three 12 inch diameter bundles in a horizontal configuration. Models with the suffix 'GEO' in the name are manufactured with a pre-inserted geotextile beneath the netting and spanning across the top 180 degrees (± 15 degrees) of each cylinder.

EZflow configurations that do not contain the suffix "GEO" in the name must be covered with a non-woven geotextile fabric once installed. Geotextile placed on top of the product shall not cover more than the top half of any bundle, thus allowing the bottom half of each bundle to provide direct interface with the receiving soil.

Table 1. EZflow Configurations and Dimensions*

Model	Product Dimensions (Width x Length x Height) (inches)	Sidewall Height Infiltrative Height Below Inlet Invert (inches)
0701A and 0701A-GEO**	7 x 120 x 7	N/A
1202H and 1202H-GEO	24 x 120 x 12	6
1203H and 1203H-GEO	36 x 120 x 12	6
1202H and 1202H-GEO (double stacked)	24 x 120 x 24	18
1203H and 1203H-GEO (double stacked)	36 x 120 x 24	18

* The EZflow products are available in 5-ft and 10-ft lengths; the bundles are positioned horizontally in the soil treatment and dispersal component, as per the 'Installation Instructions for EZflow Systems in Minnesota.'

** The 5-ft and 10-ft lengths of EZflow 0701A and 0701A-GEO may only be used to create the outside rows of the distribution cell.

Subject to this determination, the referenced EZflow configurations will be placed on the List of Registered Subsurface Sewage Treatment System (SSTS) Proprietary Distribution Media Products at the sizing recommended by the Technical Advisory Panel (TAP) on September 24, 2009, and June 18, 2015, and reflected in this letter of registration. The product information listed in this Notice of Proprietary Product Listing will be maintained on the MPCA website and may not be altered by the manufacturer without permission from the MPCA.

Soil absorption areas using Infiltrator Water Technologies EZflow bundles may be sized based on the sizing charts included in this Notice of Proprietary Distribution Product Listing, or may be sized larger at the direction of local regulatory authorities. Product drawings contained in the manufacturer's manual provide information on the open bottom area for each product listed in Table 1.

The following design applications for trenches, seepage beds, at-grades and mounds are based on the Registered Sizing as recommended by the Technical Advisory Panel.

Trench Applications

For trench applications, the following shall be the basis for establishing equivalency for nominal EZflow bundles width to trench width:

- Two 12-inch-wide EZflow bundles (1202H and 1202H-GEO) are equivalent to a 24-inch-wide trench using drain field rock
- Three 12-inch-wide EZflow bundles (1203H and 1203H-GEO) are equivalent to a 36-inch-wide trench using drain field rock

New construction or replacement systems where trench designs are specified, may utilize the EZflow bundles in accordance with Table 2. Trenches must be no more than 36 inches wide. All excavations wider than 36 inches shall be considered a seepage bed.

When EZflow bundles are double stacked in trenches utilizing the 34 percent bottom area reduction, they shall be installed to utilize the full height of the 18 inch high sidewall for absorption area.

Backfilling along the EZflow bundle's sidewall absorption area shall be done in a manner that: (1) maintains the ability of the soil to adequately infiltrate and disperse wastewater and (2) prevents the intrusion of soil into the bundles through the sidewall. Backfill material type and method of placement shall be done as specified by the manufacturer in the installation manual.

Table 2. Trench Sizing*

Model	Dimensions (Width x Length x Height) (inches)	Sizing in Trenches
1202H and 1202H-GEO	24 x 120 x 12	EZflow trench length at 1:1 ratio with drainfield rock trench length
1203H and 1203H-GEO	36 x 120 x 12	
1202H and 1202H-GEO (double stacked)**	24 x 120 x 24	34 percent bottom area reduction for 18 inches of sidewall height
1203H and 1203H-GEO (double stacked)**	36 x 120 x 24	

* The EZflow products are available in 5-ft and 10-ft lengths; the bundles are positioned horizontally in the soil treatment and dispersal component, as per the 'Installation Instructions for EZflow Systems in Minnesota.'

** In trench applications, the products can be double stacked and provide up to 18 inches of sidewall absorption area; in this application, a 34 percent bottom area reduction for the 18-inch sidewall height is allowed; the geotextile fabric is placed only on the uppermost surface of the EZflow bundles.

Vertical inspection pipes must be properly installed in the distribution medium of all trenches as per Minn. R. Ch. 7080.2210, subp. 4 (B). The inspection pipe must be located at the end opposite from where the effluent enters the distribution medium. The manufacturer's installation instructions for trench systems shall illustrate this requirement.

Seepage Bed Applications

Seepage bed designs shall be sized based on bottom area only with no additional credit given to sidewall. When a seepage bed is specified with a design width of less than or equal to 12 feet, gravity distribution may be utilized. Seepage bed designs greater than 12 feet and up to 25 feet in width shall require pressure distribution. Table 3 provides EZflow configurations for seepage bed applications using the Registered Sizing.

Backfilling along the EZflow bundle's sidewall absorption area shall be done in a manner that prevents the intrusion of soil into the bundles through the sidewall. Backfill material type and method of placement shall be done as specified by the manufacturer in the installation manual.

Vertical inspection pipes must be properly installed in the distribution medium of all seepage bed systems as per Minn. R. Ch. 7080.2210, subp. 4 (B). The inspection pipe must be located at the end opposite from where the effluent enters the medium. The manufacturer's installation instructions for seepage bed systems shall illustrate these requirements. One inspection pipe per seepage bed is sufficient; it is not necessary to install an inspection pipe in each run of EZflow bundles.

Table 3. Seepage Bed Sizing*

EZ Flow Bundles	Nominal Dimensions (Width x Length x Height) (inches)	Number of EZflow Bundles Spanning Bed Width	Bed Design Width** (feet)
1202H and 1202H-GEO	24 x 120 x 12	2	4
		4	8
		6	12
		8	16
		10	20
		12	24
1203H and 1203H-GEO	36 x 120 x 12	2	6
		3	9
		4	12
		5	15
		6	18
		7	21
		8	24

* The EZflow products are available in 5-ft and 10-ft lengths; the bundles are positioned horizontally in the soil treatment and dispersal component, as per the 'Installation Instructions for EZflow Systems in Minnesota.'

** EZflow 0701A and 0701A-GEO may be used to create the outside rows of the bed. Doing so adds 1 foot of bed design width to the system.

At-Grade Applications

EZflow bundles are registered for use in at-grade systems on both flat sites and on sloping sites. At-grade designs shall be sized based on bottom area only with no additional reduction given to sidewall. At-grades should be long and narrow, with individual contour loading rates ranging between two and eight gallons per lineal foot per day. Proper scarification of the absorption area is required before EZflow products are installed in at-grade systems. The maximum allowable width for at-grade distribution media beds is 15 feet. Table 4 provides EZflow configurations when utilized in at-grade systems applications using the Registered Sizing.

The bundles are installed side by side, without gaps between bundles; the 4-inch internal pipes are connected by internal coupling devices, which allow continuous flow from section to section of the EZflow bundles. The EZflow Manual shall illustrate proper installation requirements.

Backfilling along the EZflow bundles shall be done in a manner that prevents the intrusion of soil into the bundles through the sidewall. EZflow bundles may be staked to the ground surface to prevent shifting during backfilling. The required backfill material includes six inches of sandy cover material over the product, extending at least five (5) feet beyond the ends of the product, and six inches of topsoil. The backfill material shall be properly sloped to divert surface water away from the system. The method of soil placement over the at-grade shall be done as specified by the manufacturer in the installation manual.

Table 4. At-Grade Sizing*

Model	Nominal Dimensions (Width x Length x Height) (inches)	Number of EZflow Bundles Spanning At- Grade Width	At-Grade Design Distribution Media Width** (feet)
1202H and 1202HGEO	24 x 120 x 12	2	4
		3	6
		4	8
		5	10
		6	12
		7	14
1203H and 1203HGEO	36 x 120 x 12	1	3
		2	6
		3	9
		4	12
		5	15

* The EZflow products are available in 5-ft and 10-ft lengths; the bundles are positioned horizontally in the soil treatment and dispersal component, as per the 'Installation Instructions for EZflow Systems in Minnesota.'

** EZflow 0701A and 0701A-GEO may be used to create the outside rows of the at-grade distribution media. Doing so adds 1 foot of bed design width to the system.

All at-grade systems using EZflow products (both with and without pre-inserted geotextile fabric) must be covered with an external non-woven geotextile fabric. The external geotextile fabric placed on top of the EZflow product shall not cover more than the top half of any EZflow bundle; this allows the bottom half of each bundle to provide direct interface with the receiving soil.

One vertical inspection pipe must be properly installed along the down slope portion of at-grade absorption beds as per Minn. R. Ch. 7080.2230, subp. 3 (G). The manufacturer's installation instructions for at-grades shall illustrate this requirement.

Mound Applications

Mound designs shall be sized based on bottom area only with no additional reduction given to sidewall. Mounds should be long and narrow, with contour loading rates ranging between one and twelve gallons per lineal foot per day. The maximum allowable width for mound distribution media beds is ten feet.

Table 5 provides EZflow bundle configurations when utilized in mound applications using the Registered Sizing.

The EZflow bundles are installed side by side, without gaps between bundles; the 4-inch internal pipes are connected by internal coupling devices, which allows for pressure laterals to be inserted from section to section of EZflow bundles. In all mound installations, the area around the EZflow bundles shall be filled with clean sand up to the top of the bundle height. The manufacturer's installation manual shall provide a detailed drawing showing this installation requirement.

Table 5. Mound Sizing*

Model	Nominal Dimensions (Width x Length x Height) (inches)	Number of EZflow Bundles Spanning Mound Width	Mound Distribution Media Width** (feet)
1202H and 1202HGEO	24 x 120 x 12	2	4
		3	6
		4	8
		5	10
1203H and 1203HGEO	36 x 120 x 12	1	3
		2	6
		3	9

* The EZflow products are available in 5-ft and 10-ft lengths; the bundles are positioned horizontally in the soil treatment and dispersal component, as per the 'Installation Instructions for EZflow Systems in Minnesota.'

** EZflow 0701A and 0701A-GEO may be used to create the outside rows of the mound distribution media. Doing so adds 1 foot of bed design width to the system.

Backfilling along the EZflow bundles shall be done in a manner that prevents the intrusion of soil into the bundles through the sidewall. Backfill material type and method of placement shall be done as specified by the manufacturer in the installation manual.

All mound systems using EZflow products (both with and without pre-inserted geotextile fabric) must be covered with an external non-woven geotextile fabric. The external geotextile fabric placed on top of the EZflow product shall not cover more than the top half of any EZflow bundle; this allows the bottom half of each bundle to provide direct interface with the receiving mound sand.

One vertical inspection pipe must be properly installed at the end of each mound, terminating at the mound sand and EZflow bundle interface, per Minn. R. Ch. 7080.2220, subp. 3 (0). The manufacturer's installation instructions for mounds shall illustrate this requirement.

General Requirements

The registration of products in Minnesota is contingent upon compliance with the following conditions:

1. The manufacturer shall have readily accessible information, specific to a product's registered use in Minnesota, for designers, installers, regulators, system owners and service providers for the following items: a) product manual; b) design instructions; c) installation instructions; d) information regarding operation and maintenance; e) homeowner instructions; and f) list of manufacturer-certified service providers, if any, as required by Minn. R. Ch. 7083.4040 (H).
2. Distribution of sewage by means of gravity and pressure are permissible, in accordance with Minn. R. Ch. 7080.2050 and the manufacturer's installation requirements. The distribution of effluent shall be done in a manner that does not scour or excessively pit the soil's infiltrative surface or cause sealing from fines at the soil's infiltrative surface.
3. Soil loading rates shall be as specified in Minn. R. Ch. 7080.2150, subp.3. Tables IX and IXa and in Minn. R. Ch. 7080.2350, subp. 3. Tables XII and XIIa.
4. The minimum depth of soil cover, including six inches of topsoil borrow, over EZflow bundles that are used in trenches, seepage beds, at-grades and mounds is 12 inches.
5. Any excavation into the absorption area must be in a manner that maintains soil structure in an un-smearred and un-compacted condition. Excavation and placement of EZflow bundles are allowed when: 1) the soil moisture is less than the plastic limit and 2) the soil is not frozen or freezing per Minn. R. 7080.2150, subp. 3 (G).
6. Placement of EZflow bundles shall be performed in a manner that minimizes soil compaction due to foot traffic related to the installation of the products.
7. EZflow bundles shall be durable and resist deformation to retain the shape of the bundles and to withstand system installation backfilling, corrosion, and loss of the aggregate under its intended use.
8. Training shall be provided to practitioners in the proper application and use of the EZflow bundle products registered for use in Minnesota.
9. The manufacturer will ensure that the requirements for EZflow products contained in the Recommended Standards and Guidance for Proprietary Distribution Media Products are followed.
10. During the period of product registration and as part of the renewal process, systems using registered distribution products are subject to an audit established by the MPCA.

Mr. Dennis Hallahan

Page 8

January 24, 2022

Please be advised that this registration expires on December 31, 2024. Manufacturers desiring to continue product registration beyond this date must obtain MPCA renewal according to the requirements in Minn. R. 7083.4080, subp. 5. If the MPCA finds the product has changed in any way that may affect performance, it may not be renewed and must meet the requirements for initial registration.

The MPCA is in no way endorsing these products or any advertising, and is not responsible for any situation, which may result from its use or misuse. The MPCA is not liable for any product failure and these statements are not intended and cannot be relied upon to establish any substantive or procedural rights with the state of Minnesota or the MPCA, either express or implied, that can be enforced in litigation or any administrative proceeding.

If you have any questions, please contact Katie Dowling at 651-757-2301 or by email at katie.dowling@state.mn.us.

Sincerely,

Katie Dowling

This document has been electronically signed.

Katie Dowling
Environmental Specialist
Municipal Division

KD:

cc: File