North Carolina

As required by state or local regulations, be sure to obtain proper installation inspection from the health department prior to covering the system.

After the system has been completely covered, only drive across the trenches when necessary. Never drive along the trench lines. To avoid additional soil compaction, prevent any heavy equipment from driving across or along the trench lines.

Sod or seed the drainfield area to control erosion, as may be required by Permit or local policy.

Sizing

1. The maximum long-term acceptance rate (LTAR) shall be as shown in Table II of EWWS-06-1R.

2. The LTAR shall be based on the most hydraulically limiting naturally occurring soil horizon within three feet of the ground surface or to a depth of one foot below the trench bottom whichever is deeper.

3. To determine the minimum total trench bottom area (ft^2) required, divide the design daily sewage flow by the applicable LTAR in Table II of EWWS-06-1R. The minimum linear footage for **EZ***flow* Drainfield Systems shall be determined by dividing the total trench bottom area by the following equivalency factor:

Model	Sizing Factor
1201P-GEO	2.50SF/FT

Example of sizing calculations for EZ*flow* 1201P-GEO Systems in North Carolina

Assume: Three bedroom residence with a design daily sewage flow of 360 gallons on a Group III sandy clay loam soil.

Then: Total computed trench bottom area is:
360 GPD / 0.5 LTAR (GPD/SF) = 720 ft^2

Total LF = 720 SF/2.5 SF/FT (sizing factor) = 288 LF of 1201P-GEO.

Siting

1. The **EZ***flow* 1201P-GEO Drainage System may be utilized on any site that one can use rock aggregate and pipe which meet the following criteria.

2. Sites which are classified Suitable or Provisionally Suitable for a conventional nitrification field system in accordance with 15A NCAC 18A.1948(a) and (b).

3. Sites which have been reclassified as Provisionally Suitable in accordance with 15A NCAC 18A.

4. The required vertical separation shall be measured from the trench bottom.

System Inspection

Provisions of the NC Rules apply, except as modified by EWWS-06-1R. Inspection is significantly easier due to the pre-assembly of the components. Levelness of the trench bottom may be checked by inserting a rod between the aggregate bundles down to the trench bottom. Poor quality stone and/or excessive fines are never a concern. The lack of the required depth of aggregate is never a problem.

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RING INDUSTRIAL GROUP, LP

NORTH CAROLINA. EZ DOES IT.

Installation Instructions for EZ*flow* 1201P-GEO as an Experimental System in North Carolina

EZflow™ RING INDUSTRIAL

PERFORMANCE. EZ DOES IT.

The North Carolina Department of Environment and Natural Resources Division of Environmental Health On-Site Wastewater Section approves the use of Ring Industrial Group manufactured **EZ***flow* 1201P-GEO drainfields as a replacement for conventional drain media in gravity effluent disposal trench systems on an experimental basis. **EZ***flow* drainfields are also adaptable to serial and drop box distribution in accordance with requirements for conventional trenches as described in administrative code 15A NCAC 18A.1969 and Proposed Experimental System Approval No. EWWS-06-1R and in conjunction with manufacturers recommendations for installation.

Prior to installation, Ring Industrial Group must certify installers in writing as having passed **EZ***flow Certification Training.*

Materials and Equipment needed

- **EZ***flow* Bundles
- **EZ***flow* Internal Pipe Couplers
- Pipe for Header and Inlet
- Backhoe

Installation Instructions

The instructions for installation of **EZ***flow* 1201P-GEO products are given below. This must be installed in accordance with state rules defined in North Carolina Department of Environment and Natural Resources Division of Environmental Health On-Site Wastewater Section, administrative code 15A NCAC 18A.1955, as well as the local health department's current design manual.

Each **EZ***flow* 1201P-GEO bundle is 12 inches in diameter by 5 or 10 feet long. A single pipe bundle contains a four inch perforated pipe surrounded by EPS aggregate and is held together with polyethylene netting.

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

1. After the local health department has determined sizing and layout for the **EZ***flow* systems, stake or mark with paint the location of trenches and lines. Be careful to set correct tank, pipe invert, header line or distribution box and trench bottom elevations before installation of **EZ***flow* bundles so that permitted installation depth can be maintained.

2. The installer should not install the system when soil moisture conditions cause smearing of trench sidewalls and bottoms. If smearing or glazing of trench sidewalls and bottom has otherwise occurred in dry clay soils, it is recommended that these soil surfaces be raked or scarified.

3. The proper elevation of solid PVC effluent pipe going to each trench should be determined to ensure compliance with required maximum trench bottom depth as shown on the approved permit. This height may vary dependent on system height and configuration that is used.

4. Each trench system must have a minimum center spacing of 7.5 feet.

5. Remove plastic **EZ***flow* shipping bags prior to placing bundles in the trench(es). Remove any plastic bags in the trench before system is covered.

6. Place selected configuration in the excavated trench. Each bundle containing pipe are joined end to end with an internal pipe coupler.

7. The top of each 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 before final backfiling.

8. Nitrification trenches shall be constructed as level as possible but in no case shall the fall in a single trench bottom exceed one-fourth inch in 10 feet as determined by an engineer's level or equivalent.

9. The **EZ***flow* 1201P-GEO should be installed in a level trench in all directions (both across and along the trench bottom) and should follow the contour of the ground surface elevation (uniform depth), with all continuous adjoining 10-foot cylindrical bundles placed end to end, without any dams, stepdowns or other water stops.

11. When surface slopes are greater than two percent, the bottom of the nitrification trenches shall follow the contour of the ground. An engineer's level or equivalent shall be used for installation and inspection.

12. **EZ***flow* EPS bundles are flexible and can fit in curved trenches as may be necessary to avoid trees, boulders, or other obstacles.

13. Install Monitoring inspection pipes with cover to grade at a location to be determined by the principal investigator. Transducer installation may be required at sites selected by the principal investigator in order to remotely monitor trench ponding levels.

14. The soil cover over the nitrification field should be to a depth of at least six inches.

15. The finished grade over the nitrification field should be landscaped to prevent the ponding of surface water and runoff of surface water shall be diverted away from the nitrification field.

16. Soil cover above the original grade should be placed at a uniform depth over the entire nitrification field, except as required to prevent the ponding of surface water.

17. The soil cover should be placed over nitrification field after proper preparation of the original ground surface.

North Carolina

1201P-GEO **EZ***flow* Drainage System as an Experimental System in the State of North Carolina

1201P-GEO