
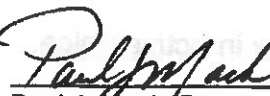


To: <p style="text-align: center;">SUPERSEDED BY EI 08-007 EFFECTIVE 9/4/08</p>		<i>New York State</i> <i>Department of</i> <i>Transportation</i> ENGINEERING INSTRUCTION	EI 01-002
Title: PREFABRICATED GEOCOMPOSITE EDGE DRAIN - NEW SPECIAL SPECIFICATION			
Distribution: <input type="checkbox"/> Manufacturers (18) <input type="checkbox"/> Surveyors (33) <input checked="" type="checkbox"/> Main Office (30) <input checked="" type="checkbox"/> Consultants (34) <input type="checkbox"/> Local Govt. (31) <input checked="" type="checkbox"/> Contractors (39) <input checked="" type="checkbox"/> Regions/Agencies (32) <input type="checkbox"/> _____ ()	Approved:  <hr/> Paul J. Mack, Deputy Chief Engineer, Technical Services		

1/5/01
Date

ADMINISTRATIVE INFORMATION:

This Engineering Instruction (EI) is effective with projects submitted for the letting of July 5, 2001. This EI does not supersede any previous issuances.

PURPOSE:

The purpose of this Engineering Instruction is to issue two special specifications for the installation of Prefabricated Geocomposite Edge Drains (PGED'S). These new specifications conform to new AASHTO procedures used to evaluate and approve the materials used for PGED's. The new specifications also combine elements of previous generation specifications, making those previous specifications unnecessary.

DESIGN INFORMATION:

The following changes are made in the New Specifications:

1. The specifications incorporate the revised AASHTO M-288 procedure for evaluating and approving geotextiles as a component of the PGED.
2. The specifications incorporate geotextile category, apparent opening size class, and strength class according to the new requirements of AASHTO M-288.
3. The specifications permit the designer to select either existing material backfill, or underdrain filter material backfill (formerly known as crushed stone backfill). Guidance for the designers on which option to select will be included in Chapter 9 of the Highway Design Manual, which is currently being re-written by the Geotechnical Engineering Bureau and the Design Quality Assurance Bureau. The revisions to the Highway Design Manual will be submitted for approval through a separate EI clearance process by DQAB.
4. The product is now referred to as "Prefabricated Geocomposite Edge Drain (PGED)" rather than "Prefabricated Composite Edge Drain (PCED)." This change makes the specification compatible with the Approved List.

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5. The specifications provide guidance for the Engineer-In-Charge and Contractor on proper installation procedures. For example, the specification instructs them of the importance of installing the PGED so that it faces the proper direction.
6. The specifications more fairly assign responsibility for the varying parts of the installation. They reduce risk to the Contractor.
7. The specifications are now in active voice.

IMPLEMENTATION:

DQAB will add the following special specifications to the system.

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|---------------------|---|
| Item 17605.2410 M - | Prefabricated Geocomposite Edge Drain (Underdrain Filter Material Backfill) |
| Item 17605.2411 M - | Prefabricated Geocomposite Edge Drain (Existing Material Backfill) |

DQAB will delete the following special specifications from the system:

- | | |
|---------------------|---|
| Item 01605.2404 M - | Prefabricated Composite Edge Drain (Modified) |
| Item 08605.2405 M - | Prefabricated Composite Edge Drain (with Crushed Stone) |
| Item 17605.2402 M - | Prefabricated Geocomposite Edge Drain (Modified) |

CONTACT PERSON:

Direct any questions concerning these specifications to Don Dwyer of the Geotechnical Engineering Bureau at (518) 457-4724.

- ITEM 17605.2410 M - PREFABRICATED GEOCOMPOSITE EDGE DRAIN (UNDERDRAIN FILTER MATERIAL BACKFILL)**
ITEM 17605.2411 M - PREFABRICATED GEOCOMPOSITE EDGE DRAIN (EXISTING MATERIAL BACKFILL)

DESCRIPTION

This work consists of furnishing and installing an approved Prefabricated Geocomposite Edge Drain (PGED) as specified at the location(s) and to the limits shown in the contract documents or as directed by the Engineer, in writing, prior to performing the work. This work includes excavating and backfilling the trench.

Prior to installation, furnish the Engineer with copies of the manufacturer's literature with details and installation requirements for the PGED. In addition, provide information on the type of trenching equipment to be used and the proposed procedure for installation of the PGED and outlets.

Provide a manufacturer's representative experienced in the installation of PGED on the project during the start-up of installation of the PGED and until such time as trouble free installation is achieved to the satisfaction of the Engineer.

MATERIALS

A. General

Provide Geotextile and Prefabricated Geocomposite Edge Drain of the type appropriate for the intended use as shown on the plans and as listed in the appropriate Approved List issued by Department's Materials Bureau. Evaluation of a Geotextile or Prefabricated Geocomposite Edge Drain not on the Approved List will be made in accordance with procedural directives of the Geotechnical Engineering Bureau. Evaluation will require a minimum of four months.

Provide PGED that is a flexible product consisting of a geotextile bonded to or tightly wrapped around an internal supporting core.

Provide PGED that is resistant to deterioration from salts, road oils, fuels and other deleterious substances encountered in the type of application.

B. Basis of Acceptance

- 1. Geotextiles.** The Geotextiles which are on the Approved List issued by the Department's Materials Bureau will be accepted on the basis of the brand name labeled on the Geotextile or the Geotextile container and verification of the Geotextile by a Departmental Geotechnical Engineer. Provide Drainage class geotextile conforming to apparent opening size (AOS) Class A, and Strength Class 2 or higher.
- 2. Prefabricated Geocomposite Edge Drain.** The Prefabricated Geocomposite Edge Drains which are on the Approved List issued by the Department's Materials Bureau

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will be accepted on the basis of the brand name labeled on the drain's packaging and verification by the Engineer of the geotextile wrap being on the approved list for Drainage application for AOS Class A, and Strength Class 2 or higher.

C. Quality Assurance of Prefabricated Geocomposite Edge Drain

When the State elects, a one (1) meter long sample will be obtained for quality assurance testing. The results of this testing will only affect a product's standing on the Approved List. No payment will be made for this sample.

D. Backfill Material

Provide backfill material meeting the following requirements:

For existing material backfill, provide suitable material.

For underdrain filter material backfill, provide material that meets the requirements of Item 605.1001 M, Underdrain Filter, Type II.

E. Fittings

Provide fittings and materials necessary to make splices and connections of the PGED to outlet piping, that conform to the manufacturers requirements. Design all fittings and materials to prevent soil intrusion into the PGED or outlet piping.

Provide fittings that allow for outletting the continuous PGED in a sag area; ie., a tee; and for outletting the individual run length segments as shown in the contract documents or as ordered by the Engineer.

In cases where the PGED is terminated without an outlet, provide a fitting to prevent soil intrusion into the end of the PGED.

CONSTRUCTION DETAILS

Excavate a trench in the location and to the limits shown in the contract documents or as directed by the Engineer.

Where existing material backfill is used, place the PGED abutting the side of the trench closest to the centerline of pavement (the inside of the trench). Where underdrain filter material backfill is used, place the PGED abutting the side of the trench farthest away from the centerline of pavement (the outside of the trench). Place the PGED in an upright vertical position so that it has no bends, crimps or sags in its final position. Be aware that many PGED's provide drainage on only one side. Place the PGED so the side that provides drainage faces the pavement.

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Backfill and compact the trench. Where underdrain filter material backfill is used, place the backfill in one lift. Where existing material backfill is used, place backfill in three approximately equal lifts. For existing material backfill, perform the trenching, PGED placement, and first lift backfill and compaction operations in one continuous operation.

Compact each lift with at least two passes of an approved vibrating pad, plate, or drum-type compactor. Other vibratory compaction systems may be used as approved by the Engineer. Remove the surplus excavated material from the work area and dispose of it as required in Subsection 203-3.08, Disposal of Surplus Excavated Materials.

For any given PGED run, install outlets no later than 48 hours after PGED placement. Do not backfill the outlet trench until the installation of the fitting and connection to the outlet pipe is inspected and approved by the Engineer. Backfill all trenches before the end of the workday.

Install splices required in the PGED prior to placement of the PGED. Install splices and connections in the PGED in accordance with the manufacturer's recommendations to ensure continuity of the PGED.

During all periods of shipment and storage, keep the PGED wrapped and protected from direct exposure to sunlight, mud, dirt and debris. Repair or replace any damaged portion of the PGED to the satisfaction of the Engineer. Payment will not be made for repairing or replacing the damaged portions caused by the Contractor's operations.

Backfill and compact all portions of the trench which are overcut in length to facilitate the operation of the trench cutting equipment in accordance with the same requirements as for the trench containing the installed PGED.

METHOD OF MEASUREMENT

The quantity of the PGED to be paid will be the number of linear meters satisfactorily installed computed from the payment lines indicated in the contact documents or from payment lines established, in writing, by the Engineer.

BASIS OF PAYMENT

The unit price bid per linear meter includes the cost of furnishing all labor, equipment and material necessary to satisfactorily complete the work, including excavation, installation, underdrain filter material, backfilling and compacting, repair of overcuts, and removal of surplus excavated material. Payment will not be made for repairs of damage caused by the Contractor's operations.

Payment for outlets are not included, and will be made under the appropriate, separate pay items.