

**ITEM 17605.2402 M - PREFABRICATED GEOCOMPOSITE EDGE DRAIN (MODIFIED)**

**REASON FOR DISAPPROVAL:**

The special specification for the installation of prefabricated geocomposite edge drains has been revised into two special specifications. These new specifications conform to AASHTO procedures used to evaluate and approve the materials used for PGED's.

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.
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.

The following items revise this special specification:

Item 17605.2410 M, Prefabricated Geocomposite Edge Drain (Underdrain Filter Material Backfill)

Item 17605.2411 M, Prefabricated Geocomposite Edge Drain (Existing Material Backfill)

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**DESCRIPTION**

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

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

The Contractor shall have a manufacturer's representative experienced in the installation of PGED present 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

The PGED shall be a flexible rectangular hollow mat consisting of a polymeric supporting core bonded to or tightly wrapped in a geotextile envelope. PGED shall be resistant to deterioration from salts, road oils, fuels and other deleterious substances encountered in this type of application.

B. Basis of Acceptance

1. The product is listed in the current NYSDOT Approved List of Geosynthetics for Highway Construction as a Prefabricated Geocomposite Edge Drain.
2. Evaluation for approval may be obtained by submitting the following to the New York State Department of Transportation - Geotechnical Engineering Bureau:
  - a: a 16 square meter sample of the geotextile, if not included on the NYSDOT Approved List - Underdrain Category.
  - b: A 1.5 square meter sample of the PGED.

Evaluation of a PGED, which will require a minimum of four months, will be made in accordance with procedural directives of the Geotechnical Engineering Bureau.

**CONSTRUCTION DETAILS**

A trench shall be excavated immediately adjacent to the highway pavement edge or as otherwise shown in the contract documents or as directed by the Engineer to the limits shown on the contract plans. The PGED shall be placed abutting a side of the trench as shown on the plans. Care shall be taken to assure the PGED is placed in an upright vertical position without bending, sagging or crimping. The trenching, PGED placement, and first lift backfill and compaction operations shall be done in one continuous operation. The

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trench shall then be backfilled in two or more lifts with material excavated from the trench and each lift shall be compacted to the satisfaction of the Engineer by a plate or vibratory compactor equipped with and approved projection fin or shoe. Other vibratory compaction systems may be used as approved by the Engineer. The surplus excavated material shall be removed from the work area and disposed of as required in Subsection 203-3.08, Disposal of Surplus Excavated Materials. For any given PGED run outlets shall be installed during the same work day, if possible, but not later than 48 hours after PGED placement. The outlet trench shall not be backfilled until the installation of the fitting and connection to the outlet pipe is inspected and approved by the Engineer.

The PGED shall include all fittings and materials necessary to make splices and connections of the PGED to outlet piping as required. All fittings and materials must be designed and installed in such a way as to preclude soil intrusion into the PGED or outlet piping. Splices required in the PGED shall be installed prior to placement of the PGED. Fittings shall be provided that allow for outletting the continuous PGED in a sag area; i.e., 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, a fitting must be provided to preclude soil intrusion into the end of the PGED. Splices and connections in the PGED shall be done in a workmanlike manner in accordance with the manufacturer's recommendations to ensure continuity of the PGED.

During all periods of shipment and storage the PGED shall be kept wrapped and protected from direct exposure to sunlight, mud, dirt and debris. Any portion of the PGED damaged by the Contractor's operation shall be repaired or replaced by the Contractor to the satisfaction of the Engineer. Payment will not be made for repairing or replacing the damaged portions.

All portions of the trench, which are overcut in length to facilitate the operation of the trench cutting equipment, shall be backfilled and compacted in accordance with the same requirements as for the trench containing the installed PGED.

Repairs to an existing pavement of damage caused by the PGED installation shall be made at the Contractor's expense, in a manner satisfactory to the Engineer. Payment will not be made for repairing the damaged pavement.

**METHOD OF MEASUREMENT**

The quantity of the PGED shall 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 per linear meter for this item shall include the cost of furnishing all labor, equipment and material necessary to satisfactorily complete the work, including excavation, installation, backfilling and compacting. Payment will not be made for repairs. Payment for outlets will be made under the appropriate pay items.