GENERAL SUBJECT: Acceptance of Geosynthetics

SPECIFIC SUBJECT:
Revision to Chapter II of the Manual of Instruction – Section 204.20(f) Geosynthetics

DATE:
December 9, 2020

SUPERSEDES:

APPROVED:
Charles A Babish, PE
State Materials Engineer

Charles A Babish
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Date: 2020.12.09 14:46:00 -05'00'

EFFECTIVE DATE

This memorandum is effective December 9, 2020.

PURPOSE/NEED/SCOPE/REQUIREMENTS

To update Section 204.20(f) for geosynthetics to reflect changes made to approved lists. In 2016, approved lists #37 (Wall Drains), #39 (Prefabricated Vertical Drains), #60 (Dewatering Bags), and #64 (Geomembrane Moisture barriers and Low Permeability Liners) were combined into one approved list. Now all geosynthetics products including geomembrane moisture barriers and low permeability liners can be found on Approved List #63.

To provide clarity and detail of the acceptance of geosynthetics products.

Changes are Shaded

PROCEDURES

(f) Geosynthetics
This section covers geosynthetics used in: silt fence, riprap bedding, drainage fabric, subgrade and embankment stabilization, geocomposite pavement underdrains and wall drains, dewatering bags, pavement interlayer reinforcement, prefabricated vertical drains; and high strength geotextiles and geogrids that require project-specific design and are used in reinforced
slopes, base reinforcement, and MSE wall applications. Geomembrane moisture barriers and low permeability liners for stormwater management facilities are also included in this section.

All geosynthetics including geomembrane moisture barrier and low permeability liners that are approved for use on VDOT projects can be found on the following approved lists:

- Approved List #37 Wall Drains
- Approved List #39 Prefabricated Vertical Drains
- Approved List #60 Dewatering Bags
- Approved List #63 Geosynthetics
- Approved List #64 Geomembrane Moisture Barriers, and Low Permeability Liners (Hydraulic Barriers) for use in Stormwater Retention

- Approved List #37 – Suppliers submit their products, which must meet the VDOT Road and Bridge Specification 245, and the fabric must be current in the NTPEP 3-year product evaluation testing.
- Approved List #39 – Suppliers submit their products, which must meet the material requirements of the VDOT Standard Special Provision for Prefabricated Vertical Drains, and the fabric must be current in the NTPEP 3-year product evaluation testing.
- Approved List #60 – Suppliers submit their products, which must meet the VDOT Road and Bridge Specification 245, and the fabric must be current in the NTPEP 3-year product evaluation testing.
- Approved List #63 – A product and its manufacturer and supplier are placed on the approved list upon request of the manufacturer or supplier. The geosynthetic must meet VDOT’s specification or standard special provision requirements and be current in the NTPEP 3-year product evaluation testing. The manufacturer must be compliant in the NTPEP audit program, and the local supplier must be annually reviewed by VDOT and thereby listed on VDOT Approved List #44 or be audited by NTPEP.
- Approved List #64 – Suppliers submit their products, which must meet the VDOT Road and Bridge Specification 245, and the fabric must be current in the NTPEP 3-year product evaluation testing.

A product and its Manufacturer and Supplier are placed on Approved List #63 upon request of the Manufacturer or Supplier. The geosynthetics must meet VDOT’s specification or special provision requirements and be current in the NTPEP 3-year product evaluation testing. The Manufacturer must be compliant in the NTPEP audit program, and the supplier will be annually reviewed by VDOT and thereby listed on VDOT Approved List #44 or be audited by NTPEP. For geomembrane moisture barrier and low permeability liners, suppliers must submit their products meeting the requirements of VDOT Road and Bridge Specification Section 245 and the product must be current in its 3-year evaluation testing.

AASHTO M288 fabrics on Approved List #63 and manufacturers fall under the Geotextile (GTX) Work Plan of the Geosynthetics Committee of NTPEP, the high strength geosynthetics and geogrids fall under the Reinforcing Geosynthetics (REGEO) work plan of the Geosynthetics Committee. Additionally, silt fence must meet the slurry test requirements of the work plan of the Erosion Control Products Committee of NTPEP, pavement interlayer reinforcement must have independent melting point testing done, and these results provided to VDOT. For products for which VDOT requires additional tests over those included in the NTPEP evaluation, or products which are not included in the NTPEP evaluation program, the Supplier / Manufacturer shall submit the required test results provided by a third party laboratory that is accredited by the
Geosynthetics Research Institute (GRI-LAP) in the specific test and also accredited by an acceptable body for quality processes.

- Temporary Silt Fence - Additional test results per ASTM-D5141 are required every 3 years along with NTPEP product evaluation, run in triplicate as NTPEP Erosion Control Products Committee Work Plan, to obtain flow rate and filtering efficiency.

- Prefabricated Geocomposite Pavement Underdrain (Edgedrain) – The NTPEP program does not include edgedrains, except the fabric which must be evaluated by NTPEP and from a NTPEP-compliant manufacturer. Products must meet the material requirements of the VDOT Specification (245.03e). Test results are required every 3 years, to be submitted to VDOT Materials Division.

- Geocomposite Wall Drains - The NTPEP program does not include wall drains, except the fabric which must be evaluated by NTPEP and from a NTPEP-compliant manufacturer. Products must meet the material requirements of the VDOT Specification (245.03f). Test results are required every 3 years, to be submitted to VDOT Materials Division.

- Geomembrane Moisture Barrier - The NTPEP program does not include geomembrane moisture barriers. Products must meet the material requirements of the VDOT Specification (245.03g). Test results are required every 3 years, to be submitted to VDOT Materials Division.

- Pavement Interlayer - The NTPEP program only includes paving fabrics, not other interlayer products. However all products must meet the material requirements of the VDOT Specification (245.03i) and come from a NTPEP-compliant manufacturer. Test results are required every 3 years, to be submitted to VDOT Materials Division.

- Low Permeability Liners for Stormwater Management Facilities - The NTPEP program does not include low permeability liners. Products must meet the material requirements of the VDOT Specification (245.03j). Test results are required every 3 years, to be submitted to VDOT Materials Division.

- Prefabricated Vertical Drains - The NTPEP program does not include prefabricated vertical drains, except the fabric which must be evaluated by NTPEP and from a NTPEP-compliant manufacturer. Products must meet the material requirements of the VDOT Special Provision for Prefabricated Vertical Drains. Test results are required every 3 years, to be submitted to VDOT Materials Division.

NOTES

REFERENCES

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