

# Origination Form

## Specifications

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<b>Date:</b>	2025-06-05T17:55:20Z	<b>Associated Specs:</b>	985

### Summary:

(1) Added language in 514-2 with the labeling requirements for the rolls, (2) moved the geotextile selection language and relevant tables from section 985, (3) moved construction requirements for overlapping geotextiles from section 985, (4) changed the certification requirement to a proof of purchase or ownership statement that includes product name and rolls numbers, (5) changed geosynthetic to geotextile throughout the section.

### Justification:

The current language is missing the label requirements for geotextile rolls on the job which is needed for proper identification and manufacturing quality control data. Additionally, the specification required the reader to turn to section 985 to find the requirements for the geotextile selection and construction requirements for overlapping the material, language that is better suited for under Division II since this is relevant to the contractor and not the manufacturer. Furthermore, the current language requires a certification that is job-specific signed by the manufacturer or supplier. However, this may not be possible for rolls being used on across multiple jobs, therefore, language needs to be updated to allow more options for proving the product that is being used on the job is the APL product to accommodate different situations. Lastly, the language is missing the Engineer's responsibility to check the product being used on the job is on the APL and appropriate for the drainage application, and SMO's role in the verification process.

### Do the changes affect other types of specifications?

Neither

### List Specifications Affected:

Other Affected Documents/Offices	Contacted	Yes/No
Other Standard Plans	Rick Jenkins	Yes
Florida Design Manual		No
Structures Manual		No
Basis of Estimates Manual		No
Approved Product List		No

<b>Construction Office</b>		No
<b>Maintenance Office</b>		No
<b>Materials Manual</b>		No
<b>Traffic Engineering Manual</b>		No

**Are changes in line with promoting and making progress on improving safety, enhancing mobility, inspiring innovation, and fostering talent; explain how?**

Yes, the changes ensure the geosynthetics being used on Department jobs for drainage applications meet the engineering requirements to perform as designed.

**What financial impact does the change have; project costs, pay item structure, or consultant fees?**

None.

**What impact does the change have on production or construction schedules?**

None.

**How does this change improve efficiency or quality?**

The change ensures drainage geotextiles are the correct type and have the required engineering properties to perform their designed function, avoiding premature failures and increasing the quality and longevity of our roadways and structures.

**Which FDOT offices does the change impact?**

Materials and Construction.

**What is the impact to districts with this change?**

Districts will need to enforce the new requirements and ensure our CEI firms are appropriately verifying the geotextile materials.

**Does the change shift risk and to who?**

No, the change does not shift risk.

**Provide summary and resolution of any outstanding comments from the districts or industry.**

Comments and Responses are available on the Track the Status of Revisions hyperlink located on the Specifications landing page: <https://www.fdot.gov/programmanagement/Specs.shtm>

**What is the communication plan?**

Through the established specification revision process (e.g., Internal and Industry Review)

**What is the schedule for implementation?**

The Standard Specifications eBook and Workbook are effective July 1st every year.

## GEOSYNTHETIC FOR DRAINAGE APPLICATIONS (REV 6-5-25)

ARTICLE 514-2 is deleted and the following substituted:

### 514-2 Material.

Meet the following requirements:

Geosynthetic ~~m~~Materials\* .....Section 985

\*Use products listed on the Department's Approved Product List (APL).

Maintain the packaging requirements, as specified in Section 985\*, until accepted at the project site. Ensure the geosynthetic materials received at the job are clearly labeled with the manufacturer's name, product name, style number, roll dimension, roll numbers, and LOT numbers. Store geosynthetic materials in accordance with the manufacturer's instructions ensuring to protect the geosynthetic material from physical damage, debris, and temperatures greater than 140° F. Prevent mud, fluid concrete, asphalt, or other deleterious materials ~~from coming in contact with the geosynthetic materials~~ that could impact the performance of the geosynthetic material from coming in contact with the geosynthetic. Replace geosynthetic materials with defects, tears, punctures, flaws, deterioration, or other damage at no additional cost to the Department.

ARTICLE 514-3 is deleted and the following substituted:

### 514-3 Application.

Select the geotextile material based on the appropriate drainage application as shown in Table 514-1. In addition to the drainage application, select the appropriate class for geotextile types D-1, D-2, and D-3 based on the in situ soil as shown in Table 514-2.

<u>Table 514-1</u> <u>Drainage Application</u>		
<u>Geotextile Type</u>	<u>Description</u>	<u>Standard Plans Index</u>
<u>D-1</u>	<u>Revetment (Special)</u>	
	<u>Rock, Rubble without bedding stone</u>	
	<u>Ditch Pavement (Rubble Riprap) without bedding stone</u>	<u>524-001</u>
<u>D-2</u>	<u>Revetment (Standard)</u>	
	<u>Articulating Block</u>	
	<u>Gabions</u>	<u>524-001</u>
	<u>Rock, Rubble, and Broken Concrete with bedding stone</u>	
	<u>Ditch Pavement (Rubble Riprap) with bedding stone</u>	<u>524-001</u>
	<u>Joint Cover for Mechanically Stabilized Retaining Wall with Coarse Aggregate Backfill</u>	
	<u>Joint Cover for Mechanically Stabilized Earth Retaining Wall Supporting Spread Footing Foundations</u>	

Table 514-1 Drainage Application		
<u>Geotextile Type</u>	<u>Description</u>	<u>Standard Plans Index</u>
<u>D-3</u>	<u>Underdrain: Types II, III, and V</u>	<u>440-001</u>
	<u>French Drain</u>	<u>443-001</u>
	<u>Sheet Piling Filter</u>	
	<u>Filter Fabric Jacket (Culvert)</u>	<u>430-001</u>
	<u>Box Culvert Joints</u>	<u>400-289 and 400-291</u>
	<u>Concrete Pavement Subdrainage</u>	<u>446-001</u>
	<u>Joint Cover for Mechanically Stabilized Earth Retaining Wall with Sand or Limerock Backfill</u>	
<u>D-4</u>	<u>Slope Pavement</u>	
	<u>Ditch Pavement (Sand-Cement Riprap or Concrete)</u>	<u>524-001</u>
	<u>Coarse Aggregate Wrap</u>	
<u>D-5</u>	<u>Separation Geotextile</u>	
	<u>Cast-In-Place Retaining Wall</u>	

Table 514-2 Geotextile Selection	
<u>In situ Soil Type or Drainage Application</u>	<u>Class for D-1, D-2, D-3 Applications</u>
<u>&lt; 15% passing a No. 200 Sieve*</u>	<u>a</u>
<u>15% to 50% passing a No. 200 Sieve*</u>	<u>b</u>
<u>&gt; 50% passing a No. 200 Sieve*</u>	<u>c</u>
<u>&gt; 50% passing a No. 200 Sieve* with Plasticity Index** &gt;7</u>	<u>d</u>
<u>MSE Wall Joint Cover for Sand or Limerock Backfill</u>	<u>e</u>
<u>MSE Wall Joint Cover for Coarse Aggregate Backfill</u>	<u>f</u>
*as per AASHTO T 88.	
**as per AASHTO T 90	

ARTICLE 514-4 is deleted and the following substituted:

#### **514-34 Construction Methods.**

**514-34.1 Geosynthetic Geotextile Materials for Drainage Applications:** ~~Select a geosynthetic material meeting the appropriate application as specified in 985-3.~~ Place and install the geosynthetic geotextile material at the proper elevation, location, and orientation as shown in the Contract Documents and in accordance with the manufacturer's instructions. Place the geosynthetic geotextile material on areas with a uniform slope that are reasonably smooth, free from mounds, windrows, and any debris or projections which might damage the geosynthetic geotextile material. When overlapping is necessary, ~~the Contractor may sew the seams to reduce overlaps as specified in 985-2.6.~~ overlaps shall be in accordance with the manufacturer's

recommendations, unless specified otherwise in the Contract Documents for a particular application. To reduce overlaps, the geotextile material may be sewn together in accordance with the manufacturer's recommendations. Sew the seams with thread meeting the chemical requirements and minimum seam strength requirements for the application.

After placement of the geosynthetic geotextile material, do not exceed the manufacturer's recommendations for exposure to ultraviolet light or five days, whichever is less. If the exposure time is exceeded, remove and replace the geosynthetic geotextile material.

**514-34.2 Subsurface Drainage Applications:** When indicated in the Plans, place the geosynthetic geotextile material with the long dimension parallel to the trench. Place and install the geosynthetic geotextile material to provide a minimum 12-inch overlap for each joint or in accordance with the manufacturer's recommendation, whichever is greater. Do not drop coarse aggregate materials from heights greater than 3 feet.

**514-34.3 Revetment System Applications:** Overlap adjacent strips of geosynthetic geotextile material at a minimum of 24 inches and in accordance with the manufacturer's recommendations, whichever is greater. Anchor the geosynthetic geotextile materials with securing pins inserted through both strips of geosynthetic geotextile material along a line through the midpoint of the overlap and to the extent necessary to prevent movement of the geosynthetic geotextile material.

Place the geosynthetic geotextile material so that the upstream (upper) strip of geosynthetic geotextile material overlaps the downstream (lower) strip. Stagger vertical laps a minimum of 5 feet. Use full rolls of geosynthetic geotextile material whenever possible to reduce the number of vertical laps. Do not drop bedding stone or riprap from heights greater than 3 feet onto the geosynthetic geotextile material.

**514-34.4 Repairs:** Replace geosynthetic geotextile material damaged during or after installation at no cost to the Department. Repair geosynthetics geotextiles damaged during or after installation only after the manufacturer establishes that the intended use and stability is not affected and after obtaining the Engineer's approval. Make such repairs as follows:

Remove materials placed within the damaged geosynthetic geotextile area plus an additional 4 feet in all directions beyond the limits of the damage. Place a patch consisting of the same material as the geosynthetic geotextile material over the damaged area in accordance with the manufacturer's recommendation. Overlap the undamaged geosynthetic geotextile material with the patch at a minimum of 3 feet in all directions. Place backfill material on the geosynthetic geotextile material in accordance with the Contract Documents after repairs have been completed.

For repairs of Geosynthetic geotextile material placed on slopes adjacent to water, place geosynthetic geotextile material so that the upstream (upper) strip of geosynthetic geotextile material overlaps the downstream (lower) strip.

ARTICLE 514-5 is deleted and the following substituted:

**514-45 Acceptance Criteria and Certification.**

Submit to the Engineer at least fourteen days prior to placement a certification from the manufacturer confirming that the material is appropriate for the intended use. The manufacturer's certification shall be attested to within the past one year by a person having legal authority to bind the manufacturing company, and must include the project number, APL product

~~number, LOT number, and product name. In addition, provide two 8-inch by 10-inch samples of geosynthetic materials for product identification to the Engineer.~~ Submit two 8-inch by 10-inch samples of the geotextile materials and proof of purchase or ownership statement to the Engineer at least fourteen days prior to placement. Proof of purchase or ownership statement shall include the product name and roll numbers. The Engineer will confirm the product is listed on the APL and is appropriate for the intended use. The acceptance of the ~~geosynthetic~~ geotextile material is subject to the approval of the State Materials Office (SMO). The SMO will evaluate the submitted product sample matches the APL product and the product name and roll numbers stated in the proof of purchase or ownership statement.

SECTION 514 is expanded by the following:

**514-~~5~~6 Basis of Payment.**

No separate payment will be made for the work specified in this Section. The cost of furnishing, placing, and sewing or overlapping the ~~fabric~~ geotextile will be included in the Contract price for the items to which it is incidental.