



*Florida Department of Transportation*

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GOVERNOR

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JARED W. PERDUE, P.E.  
SECRETARY

September 2, 2025

Daniel Holt, PE, PTOE  
Director, Project Delivery  
Director, Technical Services  
FHWA  
400 West Washington Street, Suite 4200  
Orlando, FL 32801

Re: State Specifications Office  
Section: 514  
Proposed Specification: **5140100 Geosynthetic for Drainage Applications**

Dear Mr. Holt:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by Kelly Shishlova to clarify labeling requirements for rolls, change geosynthetic to geotextile throughout the section, and move previously approved language from Section 985 to Section 514.

Please review and transmit your comments, if any, within two weeks (10 business days). Comments should be sent via email [daniel.strickland@dot.state.fl.us](mailto:daniel.strickland@dot.state.fl.us).

If you have any questions relating to this specification change, please call me at (850) 414-4130.

Sincerely,

Signature on File

Daniel Strickland, P.E.  
State Specifications Engineer

DS/jb

Attachment

cc: Florida Transportation Builders' Assoc.  
State Construction Engineer

## 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.

Table 514-1 Drainage Application		
<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 confirm the submitted sample matches the APL product and that the product name and roll numbers correspond to those provided 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.

## 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 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 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.

Table 514-1 Drainage Application		
Geotextile Type	Description	Standard Plans Index
D-1	Revetment (Special)	
	Rock, Rubble without bedding stone	
	Ditch Pavement (Rubble Riprap) without bedding stone	524-001
D-2	Revetment (Standard)	
	Articulating Block	
	Gabions	524-001
	Rock, Rubble, and Broken Concrete with bedding stone	
	Ditch Pavement (Rubble Riprap) with bedding stone	524-001
	Joint Cover for Mechanically Stabilized Retaining Wall with Coarse Aggregate Backfill	
	Joint Cover for Mechanically Stabilized Earth Retaining Wall Supporting Spread Footing Foundations	
D-3	Underdrain: Types II, III, and V	440-001
	French Drain	443-001

Table 514-1 Drainage Application		
Geotextile Type	Description	Standard Plans Index
	Sheet Piling Filter	
	Filter Fabric Jacket (Culvert)	430-001
	Box Culvert Joints	400-289 and 400-291
	Concrete Pavement Subdrainage	446-001
	Joint Cover for Mechanically Stabilized Earth Retaining Wall with Sand or Limerock Backfill	
D-4	Slope Pavement	
	Ditch Pavement (Sand-Cement Riprap or Concrete)	524-001
	Coarse Aggregate Wrap	
D-5	Separation Geotextile	
	Cast-In-Place Retaining Wall	

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

ARTICLE 514-4 is deleted and the following substituted:

#### **514-4 Construction Methods.**

**514-4.1 Geotextile Materials for Drainage Applications:** Place and install the 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 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 geotextile material. When overlapping is necessary, 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 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 geotextile material.

**514-4.2 Subsurface Drainage Applications:** When indicated in the Plans, place the geotextile material with the long dimension parallel to the trench. Place and install the 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.

**514-4.3 Revetment System Applications:** Overlap adjacent strips of geotextile material at a minimum of 24 inches and in accordance with the manufacturer's recommendations, whichever is greater. Anchor the geotextile materials with securing pins inserted through both strips of geotextile material along a line through the midpoint of the overlap and to the extent necessary to prevent movement of the geotextile material.

Place the geotextile material so that the upstream (upper) strip of geotextile material overlaps the downstream (lower) strip. Stagger vertical laps a minimum of 5 feet. Use full rolls of 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 geotextile material.

**514-4.4 Repairs:** Replace geotextile material damaged during or after installation at no cost to the Department. Repair 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 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 geotextile material over the damaged area in accordance with the manufacturer's recommendation. Overlap the undamaged geotextile material with the patch at a minimum of 3 feet in all directions. Place backfill material on the geotextile material in accordance with the Contract Documents after repairs have been completed.

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

ARTICLE 514-5 is deleted and the following substituted:

#### **514-5 Acceptance Criteria and Certification.**

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 geotextile material is subject to the approval of the State Materials Office (SMO). The SMO will confirm the submitted sample matches the APL product and that the product name and roll numbers correspond to those provided in the proof of purchase or ownership statement.



SECTION 514 is expanded by the following:

**514-6 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 geotextile will be included in the Contract price for the items to which it is incidental.