9850000 GEOTEXTILE FABRICS
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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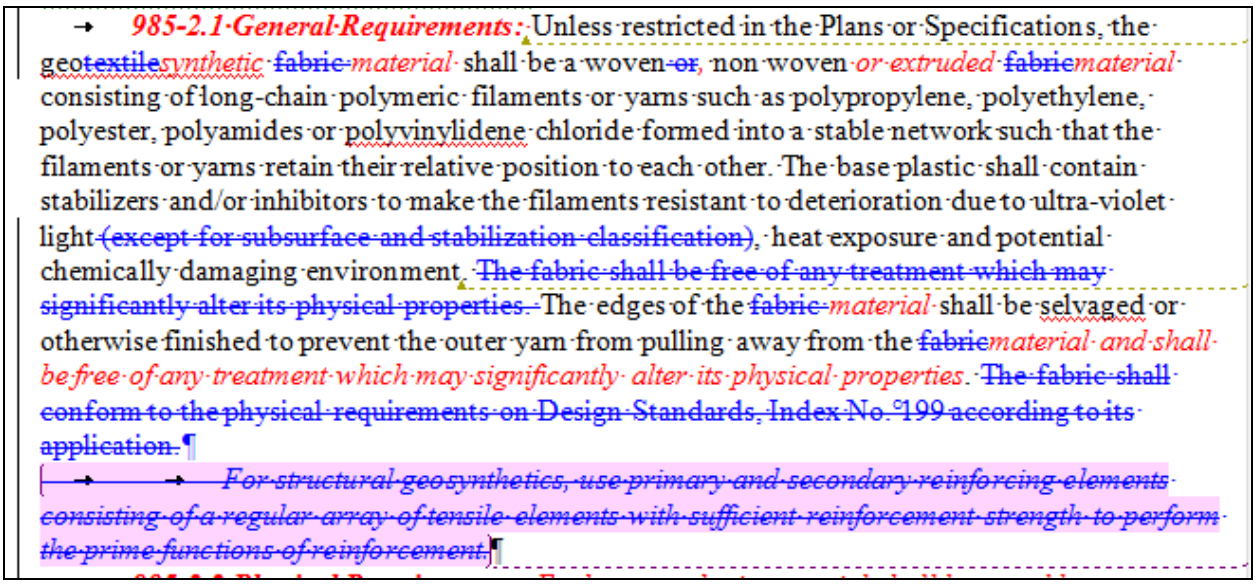
Comment: (7-3-14, Internal)

1. 985-2.1 General Requirements.

Delete second paragraph. This is to the Contractor and is stated in Section 145 Geosynthetic Reinforcement.



→ ***985-2.1·General·Requirements:*** Unless restricted in the Plans or Specifications, the geotextile*synthetic* ~~fabric~~*material* shall be a woven ~~or~~, non woven *or extruded* ~~fabric~~*material* consisting of long-chain polymeric filaments or yarns such as polypropylene, polyethylene, polyester, polyamides or polyvinylidene chloride formed into a stable network such that the filaments or yarns retain their relative position to each other. The base plastic shall contain stabilizers and/or inhibitors to make the filaments resistant to deterioration due to ultra-violet light ~~(except for subsurface and stabilization classification)~~, heat exposure and potential chemically damaging environment. ~~The fabric shall be free of any treatment which may significantly alter its physical properties.~~ The edges of the ~~fabric~~*material* shall be selvaged or otherwise finished to prevent the outer yarn from pulling away from the ~~fabric~~*material and shall be free of any treatment which may significantly alter its physical properties*. ~~The fabric shall conform to the physical requirements on Design Standards, Index No. 199 according to its application.~~ ¶

~~→ → *For structural geosynthetics, use primary and secondary reinforcing elements consisting of a regular array of tensile elements with sufficient reinforcement strength to perform the prime functions of reinforcement.*~~ ¶

Response:

2. 985-3 Product Acceptance and Certification.

Suggest the following revisions:

***985-53 Product Acceptance and* Certification.¶**

→ ***985-3.1 Product Acceptance:*** ~~*Use only*~~*All geosynthetic materials shall be one of the products listed on the Department's Approved Product List (APL). Manufacturers seeking evaluation of products must submit an application in accordance with Section 6 and include independently certified test reports that the material meets the physical requirements of this Section. Products will be listed on the APL according to geosynthetic application type. Structural geosynthetics are listed with property values.*¶

→ ***985-3.2 Certification:*** *The Contractor shall* ~~*P*~~*provide the Engineer a* ~~*manufacturer's*~~ *certification from the manufacturer*~~*,*~~ *confoirming* ~~*to the requirements of Section 6,*~~ *that the geosynthetic material meets the requirements of this Section and is appropriate for the intended use. The manufacturer shall also provide two 8 inch by 10 inch samples of the geosynthetic material for product identification* ~~*and is appropriate for the intended use*~~*. The manufacturer's certification shall be attested to by a person having legal authority to bind the manufacturing company.* ~~*Also, provide the Engineer with two 8 inch by 10 inch samples of the geosynthetic material for product identification.*~~¶

→ → ~~*.*~~*The manufacturer shall maintain test records as required by this Specification and these records shall be made available to the Department upon request.*¶

Response:

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Alan Hart
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Comment: (7-3-14, Internal)
985-2.1 General Requirements.
There appears to be no past tense for selvage. Please check.

→ ***985-2.1 General Requirements:*** Unless restricted in the Plans or Specifications, the geo~~textile~~*synthetic* ~~*fabric*~~ *material* shall be a woven ~~*or*~~*,* non woven *or extruded* ~~*fabric*~~*material* consisting of long-chain polymeric filaments or yarns such as polypropylene, polyethylene, polyester, polyamides or polyvinylidene chloride formed into a stable network such that the filaments or yarns retain their relative position to each other. The base plastic shall contain stabilizers and/or inhibitors to make the filaments resistant to deterioration due to ultra-violet light ~~(except for subsurface and stabilization classification)~~, heat exposure and potential chemically damaging environment. ~~The fabric shall be free of any treatment which may significantly alter its physical properties.~~ The edges of the ~~*fabric*~~ *material* shall be selvaged or otherwise finished to prevent the outer yarn from pulling away from the ~~*fabric*~~*material and shall be free of any treatment which may significantly alter its physical properties.* ~~*The fabric shall conform to the physical requirements on Design Standards, Index No. 199 according to its application.*~~¶

Response:

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Roger Singleton
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Comment: (7-17-14)
Section 985, you address geotextiles with various subtitles. Table 2 refers to test methods and requirements for erosion control materials. With the exception of E-1 and E-2, Erosion Control Application Types in Table 2 are stand-alone BMPs. Because E-3, E-4 and E-5 are independent horizontal sheets, no other components are required for structural stability. As a vertical interceptor of sediment, silt fence cannot function without the addition of structural components. Silt fence fabric is but one component of a multi-component system; a system comprised of fabric, post, post-spacing and method of attachment. Because silt fence is not a stand-alone BMP, E-1 (Staked Silt Fence) should be separated from Table 2, which consists primarily of flat surface ground protection. Although each BMP in this table is used in erosion and sediment control applications, they do not function in the same manner as silt fence. By separating the silt fence into its own table or section, and taking into consideration the additional components required to implement it as a BMP, it can then be tested as a system to do the job for which it is designed. It should be tested under full scale testing procedures as listed by NTPEP as TM 11340 (Test method for determination of Sediment Retention Devices (SRDs) performance in reducing soil loss from rainfall-induced erosion during perimeter control applications.) AASHTO designation ECP-14-01-7.01. When a geotextile is used in any application, the performance results required for a specific job takes priority over the material from which it is derived. A benchmark of performance required of the silt fence system must be established prior to establishing a material specification for the combined components of the system. A true test of a product cannot be made without considering the combination of materials that make up a finished product, the method that these materials go together, and the effectiveness of this combination to do the job of which it is designed. When all of the above are considered, performance can then be measured. Silt fence is a line item on every jobsite. As a separate category, we can establish products developed for sensitive areas and non-sensitive areas. Effective products will allow the contractor to choose products that have been tested as a system adding value to the jobsite. More effective products will reduce maintenance and jobsite costs. An example of this testing can be found on the website of the Georgia Soil and Water Conservation Commission: gaswcc.georgia.gov. To view this information log onto this website and go to the search box to enter BMP Testing Final Report. The test results found here reflect the soil loss of eleven different silt fence products and the compost filter sock. The results of these tests provide the information necessary to actually design an E & S Plan with expected results. As with any other product, it gives the contractor the information, prior to the purchase, to know “What’s In Your BMP Bag?”

Response:

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Comment: (7-21-14)
985-2 Materials 2.1 General Requirements:
1. Consider adding verbiage that allows for fiber components (both organic and inorganic) to be added to erosion control materials permanent structure.

Response:

2. Suggest using the definition from ECTC/FHWA for Turf Reinforcement Mats http://www.ectc.org/ECTC_RECP_Permanent.pdf

Response:

985-2 Materials 2.2 Physical Requirements: Table 2 Test Methods & Requirements for Erosion control Materials
3. Suggest separating E1-E2 fencing materials into a separate table than E3-E5 Turf Reinforcement Mats (plastic erosion mats). The testing criteria is different for these two different types of materials

Response:

4. Plastic Erosion Mats E3-E5 should be tested under ASTM D6818 regarding Tensile Strength
Response:

5. Consider using a vegetated Design Shear value instead of an unvegetated value. This more closely aligns with industry specifications. Consider the use of the ECTC/FHWA TRM specification of 6,8, and 10 psf. • http://www.ectc.org/ECTC_RECP_Permanent.pdf

Response:

6. If unvegetated design shears remain, values should be lowered to 2, 3, and 4 psf for types E3, E4, and E5 respectively. The current values are much higher than most typical TRMS have tested in large scale channel testing.

Response:

7. Design Shear values should be footnoted with a failure criteria (typically 0.50 in soil loss).

Response:

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D3 Drainage

Comment: (7-28-14)
1. 985 – 2.3 (Page 7) there is a word missing in the last sentence. Also, should this sentence include Table 2 as well?

Response:

2. 985 – 4.1.1 lists a reference to 985 – 2.2, Table 1. Should this be Tables 1.1 and 1.2?

Response:

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Larry Larson
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Comment: (7-29-14)
I Suggest moving E1-E2 fencing materials into the geotextile portion of 985 and keeping E3-E5 Turf Reinforcement Mats (plastic erosion mats) in a separate category. Plastic Erosion Mats E3-E5 Should be tested under completely different criteria than the geotextile and geogrid materials in section 985. Since Section 571 for plastic erosion mats already exists, why not remove these turf reinforcement mattings from section 985 and put them in their own section. You can then adopt the ECTC/FHWA guideline for TRM's, which aligns with industry standards. We have lobbied to FDOT for the past 20 years to remove TRM's from Index 199 because they didn't belong and now they are being put right back into the same section with geotextiles, which I feel is a mistake.

Response:

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Eddy Scott
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Comment: (8-1-14)
985-2.2 - Reword 1st senetnece to account for 985-3.1. Suggest something like: "Requirements are based on the apllication." Tables - Number tables throughout in accordance with the style guide.

Response:

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Larry Salzer
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Comment: (8-6-14)
Paragraphs noted should read as follows:
1. 985-2.1 General Requirements:
Unless restricted in the Plans or Specifications, the geosynthetic material shall be a woven, non woven or extruded material consisting of long-chain polymeric filaments or yarns such as polypropylene, polyethylene, polyester, polyamides or polyvinylidene chloride formed into a stable network such that the filaments or yarns retain their relative position to each other. The base plastic shall contain stabilizers and/or inhibitors to make the filaments resistant to deterioration due to ultra-violet light, heat exposure and potential chemically damaging environment. *The geosynthetic material shall be free of any treatment which may significantly alter its physical properties.* The edges of *woven geotextile* fabrics~~material~~ shall be selvage~~d~~ or otherwise finished to prevent the outer yarn from pulling away from the material and shall be free of any treatment which may significantly alter its physical properties.

Response:

2. 985-2.3 Overlaps and Seams:
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 *woven and nonwoven* geo~~synthetic~~*textiles* ~~material~~ may be sewn together in accordance with the manufacturer's recommendations. Sew*n* ~~the~~ seams ~~of~~ *shall be sewn* with thread meeting the chemical requirements and minimum seam strength requirements in Tables 1.1, 1.2 and 3.

Response:

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D5 Construction

Comment: (8-6-14)
1. 985-2.2 Physical Requirements: The Geotextile Selection table should have Table 1 label at the top.

Response:

2. 985-2.3 Overlaps and Seams: Sew the seams of with thread meeting the chemical requirements and minimum seam.....- "of" should be removed.

Response:

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Larry Nichols
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Comment: (8-7-14)
1. Table 1.1 Woven Geotextiles only. No Slit Film or Fibrillated Geotextiles allowed. No Slit Film or Fibrillated Geotextiles allowed. Define "Other" Woven Geotextile

Response:

2. The General Requirements in Section 985-2.1 requires a base plastic to contain UV Stabilizer, etc which does not apply to woven PET geotextiles.

Response:

3. Section 985-2.2 In lieu of third party testing properties and manufacturing standards of the submitted Geosynthetics we recommend FDOT require all Geosynthetic material manufacturers participate, and maintain current status, in the NTPEP (National Transportation Product Evaluation Program). PET geotextiles are not currently evaluated by NTPEP and would be subject to accredited third party testing.

Response:

4. Section 985-3.2 In lieu of the manufacturer's "test records" required, it's recommended the Department refer to the NTPEP audit program. Manufacturer must be GAI / A2LA accredited.

Response:

5. Table 3 – Test Methods and Requirements for Structural Geosynthetics does not assign particular values for each parameter as some properties are not relevant to a particular Geosynthetic. This could cause confusion in the specifying community as the previous 501 published relevant values, and omitted non-relevant values.

Response:

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