



## **SPECIAL PROVISIONS**

### **EarthGuard<sup>®</sup> Fiber Matrix for Full Seasonal Erosion Control: Precipitation Rate: 19" or Less in a 4-5 Month Period**

The following pages contain generalized Special Provisions for use on projects in the following situation:

EarthGuard<sup>®</sup> Fiber Matrix for Full Seasonal Erosion Control: Should be specified in situations where Full Seasonal (Winterization) Erosion Control is desired.



## **SPECIAL PROVISIONS**

### **EarthGuard<sup>®</sup> Fiber Matrix for Full Seasonal Erosion Control: Precipitation Rate: 19" or Less in a 4-5 Month Period**

**THE SPECIAL PROVISIONS DESCRIBED WITHIN IS AN ATTEMPT TO COVER MOST DESIGN ASPECTS OF UTILIZING THE EARTHGUARD FIBER MATRIX EROSION CONTROL SYSTEM. THIS DOCUMENT IS INTENDED TO BE UTILIZED AS A GUIDELINE, WHICH CAN BE CUSTOMIZED BY THE USER TO MEET SPECIFIC PROJECT REQUIREMENTS.**

**THIS PROVISION DOES NOT ATTEMPT TO ADDRESS ALL ASPECTS OF EROSION CONTROL DESIGN. A PROFESSIONAL ENGINEER RESPONSIBLE FOR DESIGN SHOULD CHECK THE INFORMATION PRESENTED IN DETAIL. CONSULT YOUR EARTHGUARD REPRESENTATIVE FOR MORE INFORMATION.**

**SOME SITUATIONS WITH: SANDY-SANDY LOAM SOILS, VERY LITTLE ORGANIC MATTER IN THE SOIL, POORLY COMPACTED SLOPES, HEAVY RAINFALL LOCATIONS (OVER 19 INCHES PER YEAR), VERY INTENSE RAIN STORMS (2-3 INCHES AT A TIME), HIGH WIND EXPOSURE, ETC. MAY REQUIRE INCREASING THE EARTHGUARD AND/OR FIBER. WHEN SWPPPS, BMPS OR OTHER PLANS ARE BEING WRITTEN, CONTACT YOUR EARTHGUARD REPRESENTATIVE AT (888) 843-1029 FOR MORE SPECIFIC RATE RECOMMENDATIONS BASED ON SOIL TYPE, RAINFALL, SLOPE AND OTHER CONDITIONS.**

## 1. GENERAL

1.1. **Work Included.** EarthGuard Fiber Matrix shall be furnished and applied as shown on the drawings and as required for proper installation and functioning of the product.

## 2. MATERIALS

2.1. **Soil Stabilizing Blend.** The soil stabilizing emulsion blend to be applied shall be "EarthGuard" as manufactured by Terra Novo Inc (888) 843-1029. It must be a true emulsion consisting of two completely immiscible liquids, in which minute globules of one liquid are dispersed but not dissolved throughout the other liquid. The blend must also be manufactured exclusively with *GENERALLY REGARDED AS SAFE (GRAS)* materials.

The soil stabilizing emulsion blend to be used shall consist of at least (3) three different linear anionic copolymer of acrylamide/sodium acrylate in water-in-oil emulsions, lending distinct molecular weights greater than  $12 \times 10^6$  and anionic mole percentages (charge density) greater than 25%, within one emulsion. The blend must be guaranteed to contain 30% (+/- 1%) active polymer, in which all of the active particles are ultra fine in size. The blend shall also be guaranteed to have 100 ppm or less of residual acrylamide.

The soil stabilizing emulsion shall be nontoxic to plant and animal life. It must also be registered and licensed by the State of California, Department of Food and Agriculture, as an "auxiliary soil amendment."

EarthGuard can be stored for 6 months. Always thoroughly mix before using. Always close or seal containers after use. Store in a dry, insulated location to avoid moisture and freezing. If frozen, thaw and completely remix the solution.

**2.2. Fiber.** The fiber to be used shall be either of wood fiber, paper fiber or a combination of the two and shall be produced from natural or recycled (pulp) fiber, such as wood chips or similar wood materials or from newsprint, and shall be free of synthetic or plastic materials. Fiber shall not contain more than 7 percent ash as determined by the Technical Association of the Pulp and Paper Industry (TAPPI) Standard T413, shall contain less than 250 parts per million boron and shall be otherwise nontoxic to plant or animal life.

Fiber shall have a water-holding capacity by mass of not less than 1200 percent as determined by the procedure designated in the Caltrans Final Report, CA-DOT-TL-2176-1-76-36, "Water-Holding Capacity for Hydrofiber," available at the Caltrans Transportation Laboratory.

Fiber shall be of such character that the fiber will disperse into a uniform slurry when mixed with water. Water content of the fiber before mixing into slurry shall not exceed 15 percent of the dry mass of the fiber. The percentage of water in the fiber shall be determined by California Test 226. Fiber shall have the moisture content of the fiber marked on the package. Fiber shall be colored to contrast with the area on which the fiber is to be applied, and shall not stain concrete or painted surfaces.

A Certificate of Compliance for fiber shall be furnished to the Engineer.

**2.3. Seed (OPTIONAL - SPECIFY TYPE IF REQUIRED).** The seed to be applied in combination with the EarthGuard Fiber Matrix shall be of Type \_\_\_\_\_ as shown in the plans and specified within these Special Provisions.

Seed required to be labeled under the California Food and Agricultural Code, shall be labeled by the vendors supplying the seed. Seed shall have been tested for purity and germination not more than 12 months prior to the application of the seed. The test results from seed testing shall be delivered to the Engineer prior to applying the seed. Seed labels furnished by the seed vendors supplying the seed shall indicate the purity, germination and pure live seed as determined by testing.

Seed with a germination rate lower than the minimum rate specified may be used when approved by the Engineer in writing.

Before seeding, the Contractor shall furnish written evidence (seed label or letter) to the Engineer that seed, not required to be labeled under the California Food and Agricultural Code, has been tested for purity and germination by a seed laboratory certified by the Association of Official Seed Analysts, or a seed technologist certified by the Society of Commercial Seed Technologists.

The percentage of seed germination shall include the germination percentage of any hard and dormant seed.

Seed specified without a germination requirement, at the time of sowing, shall be from the previous or current year's harvest, and shall be labeled to include the name date (month and year) collected and the name and address of the seed supplier.

All shipments of seed not accompanied by a valid California Nursery Stock Certificate shall be reported to the County Agricultural Commissioner at the point of destination for inspection and shall be held until released by the Commissioner.

Seed treated with mercury compounds shall not be used.

Legume seed shall be pellet-inoculated with a viable bacteria compatible for use with that species of seed. All inoculated seed shall be labeled to show the mass of seed, the date of inoculation and the mass and source of inoculant materials.

Legume seed shall be pellet-inoculated in conformance with the requirements in Bulletin 1842, "Range-Legume Inoculation and Nitrogen Fixation by Root-Nodule Bacteria," of the University of California, Division of Agriculture and Natural Resources. Inoculant shall be added at the rate of **XXX** lbs. of inoculant per **XXX** lbs. of legume seed.

Inoculated seed shall be sown within 90 days of inoculation.

### **3. EARTHGUARD FIBER MATRIX**

EarthGuard Fiber Matrix shall consist of a combination of "EarthGuard," water, and wood fiber fiber (paper fiber can be substituted up to 50% of the total fiber weight requirement), mixed in the following proportions. Seed can be added to the blend for long-term or permanent erosion control. Consult your EarthGuard Sales Representative and/or product manufacturer Terra Novo Inc at (888) 843-1029 for the appropriate project specific application rates.

The information presented should be checked in detail by the professional engineer responsible for the design to verify its accuracy. Also, the assumptions and methods used to obtain the information should be reviewed to make certain that they are applicable and suitable for the design.

January 10, 2003

**FULL SEASONAL CONTROL - Precipitation Rate: 19" or Less in a 4-5 Month Period**

<b>SLOPE</b>	<b>6:1</b>	<b>5:1</b>	<b>4:1</b>	<b>3:1</b>	<b>2:1</b>	<b>1.5:1</b>	<b>1:1</b>
<b>EARTHGUARD (GALS/ACRE)</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>FIBER (LB./ACRE)</b>	<b>800- 1,000</b>	<b>1,000- 1,200</b>	<b>1200- 1500</b>	<b>1,500- 1,800</b>	<b>1,800- 2,000</b>	<b>2,000- 2,500</b>	<b>2,500- 3,000</b>
<b>SEED (LB/ACRE)</b>							

**PARTIAL SEASONAL CONTROL (IF APPLIED IN  
TOWARDS END OF RAINY SEASON) -  
Precipitation Rate: 6-9" over a 2-3 Month Period**

<b>SLOPE</b>	<b>6:1</b>	<b>5:1</b>	<b>4:1</b>	<b>3:1</b>	<b>2:1</b>	<b>1.5:1</b>	<b>1:1</b>
<b>EARTHGUARD (GALS/ACRE)</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>FIBER (LB./ACRE)</b>	<b>800- 1,000</b>	<b>1,000- 1,200</b>	<b>1200- 1500</b>	<b>1,500- 1,800</b>	<b>1,800- 2,000</b>	<b>2,000- 2,500</b>	<b>2,500- 3,000</b>
<b>SEED (LB/ACRE)</b>							

**4. BLENDING**

Prior to blending, thoroughly mix the EarthGuard in its container. A hydroseeding vessel shall be filled with water to at least 1/3 capacity (high enough to cover agitators) prior to adding any EarthGuard. Continue to fill vessel with water and slowly add the EarthGuard while agitators are in motion. Once full with the accurate amount of EarthGuard in solution, add fiber, seed (if specified). Continue to mix tank a minimum of 10 minutes prior to application.

**5. APPLICATION**

EarthGuard Fiber Matrix Slurry shall be applied by a qualified applicator at a minimum rate of 3000 gallons/acre (higher rates may be required) evenly over the entire area to be treated. Caution should be taken to avoid creating puddles or runoff. The blend must be sprayed from multiple directions and angles to ensure complete and proper coverage. Treated areas shall not be disturbed after application.

EarthGuard Fiber Matrix shall be applied 24 hours prior to or following a storm event.

The information presented should be checked in detail by the professional engineer responsible for the design to verify its accuracy. Also, the assumptions and methods used to obtain the information should be reviewed to make certain that they are applicable and suitable for the design.

Correct mixing and proper application are key factors in obtaining satisfactory performance.

A Certificate of Compliance shall be furnished to the Engineer stating that the appropriate quantities, blending and application methods as specified herewithin have been properly followed.

## **6. REPAIR OF DAMAGED AREA**

Any damaged area shall be repaired utilizing the exact blend and application procedure as specified above.

## **7. PAYMENT**

EarthGuard Fiber Matrix will be paid for by the square foot of area treated. The price shall include full compensation furnishing all labor, materials, tools, equipment, and incidentals, and for doing all EarthGuard Fiber Matrix work, complete in place, as shown on the plans, and as specified in these special provisions, and as directed by the Engineer.

# EarthGuard Fiber Matrix Document of Compliance

Applicator: \_\_\_\_\_ Date: \_\_\_\_\_

Tract/Proj. No.: \_\_\_\_\_ Proj. Manager: \_\_\_\_\_

Developer/Owner: \_\_\_\_\_ Proj. Location: \_\_\_\_\_

Proj. Name: \_\_\_\_\_ Proj. City: \_\_\_\_\_

SLOPE	< 6:1	6:1	5:1	4:1	3:1	2:1	1_: 1	1:1
<b>SIZE (acres)</b>								
<b>EarthGuard (gal/acre)</b>								
<b>Wood Fiber (lb./acre)</b>								
<b>Paper Fiber (lb./acre)</b>								

I, \_\_\_\_\_ (name) \_\_\_\_\_ (applicator company)

hereby declare that the information herewithin is true and correct to the best of my knowledge and belief. I further declare the above listed rates have been applied as specified by the contractor, developer, plans, and specifications or as directed by an owner representative on the site. I further declare the above listed products have been applied in a manner consistent with Terra Novo's recommended application procedures and methods. Any deviation from the plans, specifications, direction by the owner representative, or Terra Novo's recommended application procedures and methods are listed below.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Deviations: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Nothing in this document should be in any way construed as an express warranty or as extending to the buyer any implied warranty including, but not limited to, the implied warranties of merchantability or fitness for any particular purpose.

The information presented should be checked in detail by the professional engineer responsible for the design to verify its accuracy. Also, the assumptions and methods used to obtain the information should be reviewed to make certain that they are applicable and suitable for the design.  
January 10, 2003