



100% Biodegradable

Microbial EarthBlanket<sup>TM</sup>

2:1 Slopes or Greater  
2:1 Slopes or Less



# Certified Phase II Stormwater Inc.

## Microbial *EarthBlanket*<sup>TM</sup>

*Think Differently!*

### QUICK REFERENCE GUIDE

Microbial <i>Filtermitt</i> <sup>TM</sup>	Used for	Vegetated Permanent erosion control
Microbial <i>Filtermitt</i> <sup>TM</sup> Berm	Used for	Vegetated Permanent erosion control where a large range of anticipated water flow is expected
Microbial and <i>PowerBoost</i> <sup>TM</sup> Mulch <i>EarthBlanket</i> <sup>TM</sup>	Used for	Vegetated Permanent erosion control to prevent sheet flow, Stabilizes soil and prevents sediment loss on slopes of varying steepness.
Sediment <i>Filtermitt</i> <sup>TM</sup>	Used for	Un-vegetated temporary erosion control
Sediment <i>Filtermitt</i> <sup>TM</sup> Berm	Used for	Un-vegetated temporary erosion control where a large range of anticipated water flow is expected
Sediment <i>EarthBlanket</i> <sup>TM</sup>	Used for	Un-vegetated temporary erosion control to prevent sheet flow, Stabilizes soil and prevents sediment loss on slopes of varying steepness.
Topdressing	Used for	Enhancing soil structure and performance to hold moisture while increasing the soils organic matter.
Microbial Inoculants	Used for	Adding a large number of beneficial microorganisms into the soil. Microbial Inoculants helps improve soil structure, fertility, and, ultimately, plant health, also inhibit diseases. Used in storm water management to remediate persistent hydrocarbons which contaminate sediments found in storm water by renewing the populations of active beneficial microorganisms.
Environmental fence	Used for	Protection of storm water management products, keeping intruders out of the wetlands, also allowing wildlife access to their habitat.



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### COMPOST PRODUCTS

<i>EarthBoost</i> <sup>TM</sup>	Used for	Topdressing, potting mixes, gardens, and <u>prescription soil blending</u> .
<i>PowerBoost</i> <sup>TM</sup> Mulch	Used for	Useful in light erosion applications on gentle slopes, flat areas, or where lower water flows are anticipated. It also ideal for use as decorative and functional mulch for annuals, perennials, shrubs, and trees.
<i>FiberRoot</i> <sup>TM</sup> Mulch	Used for	Erosion control applications Microbial and Sediment <i>FilterMitt</i> <sup>TM</sup> <i>EarthBlanket</i> <sup>TM</sup> , also for woodland plant mulch.

### *EarthBlanket*<sup>TM</sup> DEPTHS FOR VARIOUS RAINFALL RATES

Annual Rainfall Flow Rate	Total Precipitation (Rainfall Erosivity Index)	<i>EarthBlanket</i> <sup>TM</sup> Depth (Vegetated Surface)	<i>EarthBlanket</i> <sup>TM</sup> Depth (Unvegetated Surface)
Low	1 - 25 inches	½ - ¾ inch	1 – 1½ inches
	(20 – 90)	(12.5 – 19mm)	(25 – 37.5mm)
Average	26 – 60 inches	¾ - 1 inch	1½ - 2 inches
	(91 – 200)	(25 – 50mm)	(37 – 50mm)
High	> 51 inches	1 - 2 inches	2 – 4 inches
	(> 201)	(25 – 50mm)	(50 – 100mm)



# Certified Phase II Stormwater Inc. Microbial *EarthBlanket*<sup>TM</sup>

## SLOPES, SLOPE LENGTHS, and *Filtermitt*<sup>TM</sup> DIAMETERS

**Step 1: Select annual rainfall flow rate from charts below.**

Annual Rainfall/Flow rate	Precipitation/Year (Rainfall Erosivity index)	Filtermitt <sup>TM</sup> Diameter (inches)
Low	1in. to 25 in.	12"
Average	26 in. to 50 in.	12" or 18"
High	51 in. and above	18"

State	Annual Rainfall inches/ year 2008
Massachusetts	43.84
Maine	43.52
Connecticut	44.39
New Hampshire	36.53
Vermont	33.69
Rhode Island	41.91

**Step 2: Pick slope percent and length in feet for job**

Slope Percent	9 inch	12 inch	18 inch	24 inch	32 inch
5% and less	375	475	525	625	725
10%	185	240	275	375	475
15%	130	160	185	300	425
20%	95	120	135	250	375
25%	75	85	90	185	250
30%	55	70	85	120	185
35%	50	65	75	100	140
40%	45	60	70	85	110
45%	40	50	55	75	85
50%	35	45	50	60	60
75%	20	30	35	40	45
100%	10	15	20	25	30

**Step 3: Pick *Filtermitt*<sup>TM</sup> diameter.**

Note: For areas not accessible by truck, use Alternative method which can be carried by hand. Note: *Filtermitts*<sup>TM</sup> Berms are used in areas where greater water flow is anticipated, used in conjunction with *Filtermitts*<sup>TM</sup>.

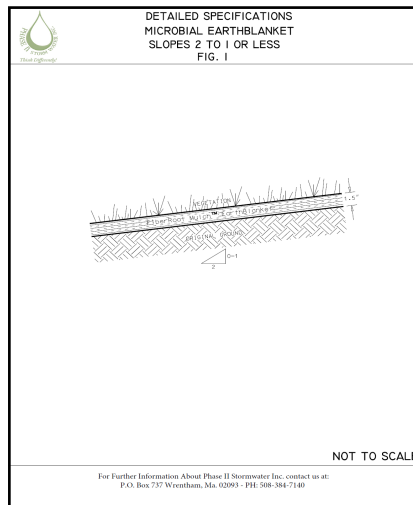


# Certified Phase II Stormwater Inc.

## Summary of All Microbial *EarthBlanket*<sup>™</sup> Detailed Drawings 2:1 Slope or Less

### Microbial *EarthBlanket*<sup>™</sup>

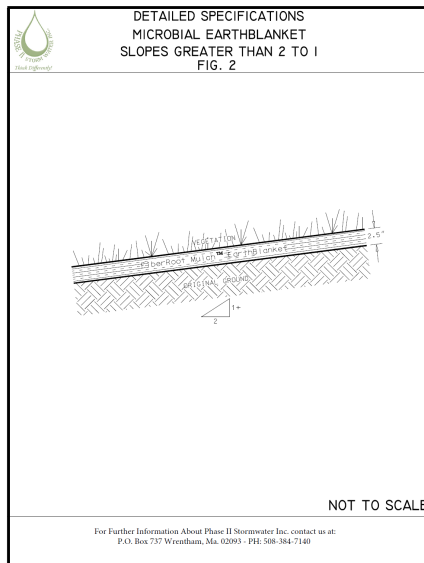
**Fig. 1**



## 2:1 Slope or Greater

### Microbial *EarthBlanket*<sup>™</sup>

**Fig. 2**





# Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™

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## GENERAL DESCRIPTIONS

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# Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™

## PART 1.

### GENERAL DESCRIPTION Microbial *EarthBlanket*™

#### E 101-1 MATERIAL:

**A.** Microbial *EarthBlanket*™

Detains sediment, absorbs orders and degrades volatile organic compounds allows water by-pass, and is a food resource for beneficial microorganisms, which remediate by metabolizing wood preservatives, petroleum products, pesticides And both chlorinated and non chlorinated hydrocarbons in stormwater runoff from reaching water resources, prevents erosion and silting on embankments parallel to creeks, lakes, and rivers, prevents erosion and turf loss on roadsides, hillsides, playing fields, and golf courses.

**B.** Beneficial Microorganism Inoculation

Need to meet Phase II Stormwater Inc. standards. See Table 3.

#### E 101-2 INSTALLATION:

**A.** All Microbial Phase II Stormwater Inc. application/installation must be done by a certified Phase II Stormwater Inc. installer.

**B.** All invasive removals must be done by a Phase II Stormwater Inc. professional.

**C.** All Microbial Phase II Stormwater Inc. application/installation should be used for pre-construction, construction and post-construction.

#### E 101-3 MAINTENANCE:

**A.** Apply beneficial microorganisms to the Certified Phase II Stormwater device every two months during the growing season to assure that the beneficial microorganisms meet the desired range as described in the Certified Phase II Stormwater Inc. specifications. Only when meeting these desired ranges can you be sure the Phase II Stormwater Inc. is remediation persistent contaminated pollutants found in the stormwater, as well as improving soil structure, and hydrological conductivity.

**B.** Apply beneficial microorganisms to improve the vigor and vitality of either planted or existing vegetation.

**C.** Remove any invasive exotic or native vegetation that maybe disturbing the functioning of the stormwater filtering device.



# Certified Phase II Stormwater Inc.

## Microbial *EarthBlanket*™

### PART 1. GENERAL (Continued)

#### **E 101-4 BENEFICIAL MICROORGANISMS INOCULATION:**

- A. Improve soil pore space which increases water infiltration.
- B. Feed on pollutants which reduces contamination of water resources.
- C. Increase soil surface tension which reduces movement of soil particles
- D. Increase water storage in soil which reduces water usage
- E. Increase carbon storage in soils which helps clean air
- F. Improve plant nutrients uptake which establishes healthier plants

#### **E 101-5 INVASIVE REMOVAL:**

- A. Prior to permit approval and prior final inspection, We recommend a plan for stormwater maintenance and invasive plant control. Invasives reduce biodiversity, threaten native species and often fail to stabilize soils.

#### **M 101-6 USE:**

- A. On slopes of varying steepness.
- B. Check dam & dikes
- C. Permanent & temporary erosion protection
- D. Vegetation & soil amendment





# Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™

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## **PART 1. GENERAL INSPECTION**

### **E 102 – 1 MATERIAL INSPECTION:**

- A.** Installation Contractor submits a sample of materials [1 gallon] to a Certified Phase II Stormwater Inc. Testing Lab. phone # 1-508-384-7140
- B.** The “Certified Phase II...” Will send the Installation contractor, either a “Certificate of Materials Approval” or a list of recommendations that when completed as described will bring the existing materials into compliance with the criteria as set forth for Certified Phase II Stormwater Inc.
- C.** Upon receipt of “Certificate of Materials Approval” from a Certified Phase II Stormwater Inc. Testing Lab, the Installation Contractor will submit copies of the “Certificate “ to the design professional, the regulating agency, and the property owner, or whoever submitted the permit.
- D.** The Installation Contractor will notify the Regulating Agency of the time and day the work will begin.
- E.** A sample of the Materials On-Site will be taken by a Certified Professional Phase II Stormwater Inspector, to verify that the materials that were “Certified” are the materials that are being installed.
- F.** The methods and procedures of the installation of the materials, as designed and specified in the Stormwater Pollution Prevention Plan will also be inspected, to assure that the installation also is in compliance.



# Certified Phase II Stormwater Inc.

## Microbial *EarthBlanket*™

### PART 1. GENERAL

#### E 103-1 MONITORING and DOCUMENTATION

- A. The property owner or site contractor is required to monitor the stormwater control device after every significant rain event, as specified and designed in the SWPPP
- B. Any failures due to either the design or the installation of the devices shall be noted with a written, dated document and Photographs.
- C. The site contractor is to follow up with a Certified letter to the design professional and the installation contractor, stating the date, and the location of the failure, preferably accompanied with a photo description of the problem, requesting a site visit to resolve these issues within a timely manner.
- D. The stormwater control devices are to be inspected periodically to assure that they meet all project requirements as described in the Certified Phase II Stormwater Inc. Manual and by a Certified Phase II Stormwater Professional Inspector.



**Certified Phase II Stormwater Inc.**  
**Microbial *EarthBlanket*™**

**PART 2**

**E 201-1 PERFORMANCE and DESIGN SPECIFICATIONS**

**TABLE 1**

<u>Performance Design</u>	<u>Slopes 2-1 or less</u>	<u>Slopes 2-1 or greater</u>	<u>Testing Lab Reference</u>
Effective Height	1.5"	2.5"	Phase II Stormwater Inc. Lab
Density dry	800 lbs/yd	800 lbs/yd	Phase II Stormwater Inc. Lab
Functional Longevity	2-5/yr	2-5/yr	Phase II Stormwater Inc. Lab
Hydraulic Flow Through Rate	6 -12 Gpm per linear ft.	6 -12 Gpm per linear ft.	Soil Control Lab Inc.
Total Solids Removal	98%	98%	Soil Control Lab Inc.



**Certified Phase II Stormwater Inc.**  
**Microbial *EarthBlanket*™**

**PART 2**

**E 201- 2 PERFORMANCE and DESIGN SPECIFICATIONS**

**TABLE 1 (continued)**

<u>Performance Design</u>	<u>Microbial <i>Earthblanket</i>™</u>	<u>Testing Lab Reference</u>
Total Suspended Solids Removal	81%	Soil Control Lab Inc.
Turbidity Reduction	70%	Soil Control Lab Inc.
Total Phosphorus Removal	11%	Soil Control Lab Inc.
Nitrate N Removal	50.4%	Soil Control Lab Inc.
Motor Oil Removal	99%	Soil Control Lab Inc.
Iron (Fe) Removal	74%	Soil Control Lab Inc.
Zinc (Zn) Removal	25%	Soil Control Lab Inc.
Manganese (Mn) Removal	72%	Soil Control Lab Inc.



**Certified Phase II Stormwater Inc.**  
**Microbial *EarthBlanket*™**

**PART 2**

**E 202 PHYSICAL and CHEMICAL REQUIREMENTS**

**TABLE 2**

<u>Compost Parameters</u>	<u>Test Method &amp; Name Reported As</u>	<u>Requirement</u>
pH	TMECC 04.11-A Electrometric pH 1:5 Slurry Method pH Units	6.0-8.5
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0-5
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	30-60 %
Organic Matter Content	TMECC 05.07-A Matter Method. Loss on Ignition Organic Matter Method % Dry Weight Basis	25-65 %
Maturity Percent Emergence %Relative Seedling Vigor %Relative to positive control	TMECC 05.05-A Biological Assays. Seedling Emergence and Relative Growth	100% 100%
Stability (respirometry)	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO <sub>2</sub> -C/g OM per day mg CO <sub>2</sub> -C/g TS per day	<8
Particle Size	TMECC 02.12-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	<u>Inches &amp; Percentage Passing</u> <u>3" (75 mm) 98% to 100%</u> <u>1" (25 mm) 90% to 100%</u> <u>¾"(19 mm) 70% to 100%</u> <u>¼"(6.4 mm) 30% to 75%</u>  <u>Maximum particle size:</u> <u>4" (100 mm)</u>
Physical Contaminants (man made inert)	TMECC 02.02-C % dry weight basis	< 1
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria <1000 MPN/gram dry wt.	Pass
Pathogen	TMECC 07.01-B Salmonella <3 MPN/4 grams dry wt.	Pass



**Certified Phase II Stormwater Inc.**  
**Microbial *EarthBlanket*™**

**PART 2**

**E 203 BIOLOGICAL REQUIREMENTS**

**TABLE 3**

Property	Test Method	Requirement Low-High
Active Bacterial (mg/g)	DIC/ Epifluorescence Microscopy	Range 15 - 30
Total Bacterial (mg/g)	DIC/ Epifluorescence Microscopy	Range 150 - 300+
Active Fungal (mg/g)	DIC/ Epifluorescence Microscopy	Range 2 -10
Total Fungal (mg/g)	DIC/ Epifluorescence Microscopy	Range 150 – 200+

The desired ranges are meant to maintain the diversity, and active populations of beneficial microorganisms.

These organisms are responsible for maintaining clean water as they metabolize polluted contaminants that reside in stormwater run-off.



# Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™

## PART 3.

### INSTALLATION, MAINTENANCE, & POST CONSTRUCTION

#### E 301 MATERIAL:

- A. Media needs to meet Phase II Stormwater Inc. specifications in tables 1,2, and 3.
- B. Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™ benefits pre-construction, construction and post-construction phases of development.
- C. Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™ specifications meet the standard performance criteria.
- D. Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™ meets the AASHTO, EPA, State & Federal regulations.
- E. All Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™ installations shall be done by a Phase II Stormwater Inc. Certified Professional to assure that all the specifications as described, will be met, and the project will succeed as it was designed.



# Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™

## PART 3.

### INSTALLATION, MAINTENANCE, & POST CONSTRUCTION

#### E 302 INSTALLATION:

- A. All Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™ installations shall be done by a Phase II Stormwater Inc. Certified Professional.
- B. If installation is not done by a Certified Phase II Stormwater Inc. Certified Professional, then the installation of the project may not comply with the design specifications and performance standards; the project will be declined.
- C. Because the Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™ conforms to the grade, there is no need to re-grade with heavy equipment which causes soil disturbance and creates conditions for more erosion.
- D. The movement of heavy equipment compacts the soil which increases flow rate and damages soil structure making it more difficult to establish seed germination.





# Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™

## PART 3.

### INSTALLATION, MAINTENANCE, & POST CONSTRUCTION

#### E 303 MAINTENANCE:

- A. To ensure proper functioning, regular inspections, and if necessary, maintenance should take place after installation. Microbial *EarthBlanket*™ should be inspected immediately by contractor or agent after each rainfall-producing event, and at least daily during prolonged rainfall events.
- B. Beneficial microorganisms need to be applied to the certified Phase II Stormwater device every two months during the growing season to ensure that the beneficial microorganisms meet the desired range as described in the certified Phase II Stormwater Inc. specifications. Only when meeting these desired ranges can you be sure the Phase II Stormwater Inc. is remediating the persistent structure, and hydrological conductivity.
- C. Identify and remove all invasive plants within the order of conditions footprint once per month during growing season.
- D. Apply Beneficial Microorganisms to improve the vigor and vitality of either planted or existing native vegetation.
- E. Remove any invasive exotic or native vegetation that may be disturbing the functioning of the stormwater filtering device.



# Certified Phase II Stormwater Inc. Microbial *EarthBlanket*™

## PART 3.

### INSTALLATION, MAINTENANCE, & POST CONSTRUCTION

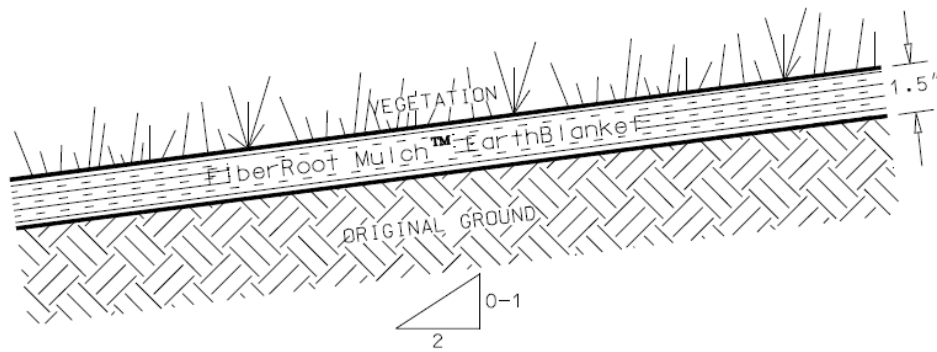
#### E 304 POST CONSTRUCTION:

- A. Leave in place to continue filtering pollutants from storm water run-off.
- B. Rake by hand, {no machine for spreading} material used as a soil amendment on existing site.
- C. **Certification Disclaimer:**

Phase II Stormwater Inc. warrants only that any product which has been certified and meets Certified Phase II Stormwater Inc. "Certification Program" criteria for such certification and except as expressly set forth herein: Phase II Stormwater Inc. Makes no warranty, express or implied as to any product which has not been certified under the Phase II Stormwater Inc. "Certification Program", including any warranty as to merchantability or fitness for a particular purposed and Phase II Stormwater Inc. hereby expressly disclaims all other warranties; Phase II Stormwater Inc. shall not be liable for any loss, injury, claim, liability, or damage of any kind resulting in any way from any errors, omissions, content, information, opinions or assessments contained in the Phase II Stormwater Inc. "Certification Program"; and, Phase II Stormwater Inc. shall not be liable, in any event for any incidental, consequential, special, exemplary or punitive damages (including without limitation for lost data, lost profits or loss of goodwill) of any kind or nature arising out of the certification of any product under the Phase II Stormwater Inc. "Certification Program", whether such liability is asserted on the basis of contract, tort, or otherwise, even if Phase II Stormwater Inc. has been made aware of the possibility of such loss or damage in advance.



DETAILED SPECIFICATIONS  
MICROBIAL EARTHBLANKET  
SLOPES 2 TO 1 OR LESS  
FIG. 1

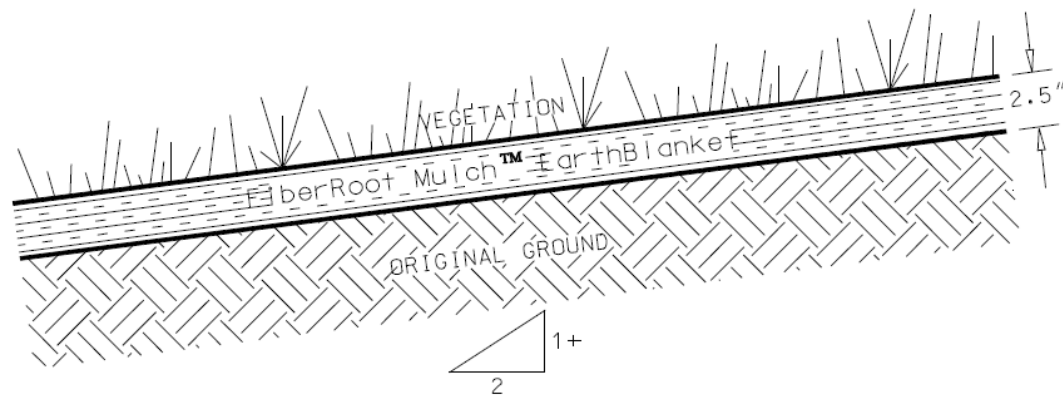


NOT TO SCALE

For Further Information About Phase II Stormwater Inc. contact us at:  
P.O. Box 737 Wrentham, Ma. 02093 - PH: 508-384-7140



# DETAILED SPECIFICATIONS MICROBIAL EARTHBLANKET SLOPES GREATER THAN 2 TO 1 FIG. 2



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