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Filtrexx Tech Link Series

- #3301 Faucette, L.B., A. Vick. 2006. LEED Green Building Credits using Filtrexx Organic BMPs.
- #3302 Faucette, L.B. 2005. A Comparison of Performance and Test Methods of SiltSoxx and Silt Fence.
- #3303 Faucette, B. 2006. C Factors for compost and rolled erosion control blankets.
- #3304 Faucette, B. 2006. Flow Through Rate, Design Height, and Design Capacity of SiltSoxx™ and Silt Fence.
- #3305 Faucette, B., K. Kerchner, A. Vick. 2006. Determining runoff curve numbers for compost erosion control blankets.
- #3306 Faucette, L.B. A. Vick, K. Kerchner. 2006. Filtrexx, Compost, Low Impact Development (LID), and Design Considerations for Storm Water Management.
- #3307 Faucette, L.B. 2005. Removal and Degradation of Petroleum Hydrocarbons from Storm Water with Compost.
- #3308 Faucette, B., Sadeghi, A., K. Sefton. 2006. USDA ARS - Evaluation of Compost Filter Socks and Silt Fence in Sediment and Nutrient Reduction from Runoff.
- #3309 Faucette, B. 2006. Humus Content and Quality of Compost Materials.
- #3310 Faucette, B. 2006. How Important is Particle Size in Specifications for Compost Erosion Control Blankets.
- #3311 Faucette, L.B. 2006. Design Height, Flow-Through Rate, and Slope Spacing of SiltSoxx and Silt Fence.
- #3312 Faucette, L.B. 2006. Is Filtrexx Slope Protection Really an Erosion Control Blanket?
- #3313 Faucette, L.B., H. Keener, M Klingman, and K. Kerchner. 2006. Design for Sediment Control Structures (Design Capacity Prediction Tool) SiltSoxx and Silt Fence.
- #3314 Faucette, L.B., K. Kerchner, A. Vick. 2006. Sediment Storage Capacity of SiltSoxx vs Silt Fence.
- #3315 Faucette, L.B. 2007. Vegetation Enhancement for Compost Erosion Control Blankets .
- #3316 Faucette, L.B, Alex Marks, and Rod Tyler. 2007. Soil Quality: A Comparison of Compost ECBs and Hydroseed Applications.
- #3317 Faucette, L., Alex Marks, and Rod Tyler. 2007. Performance of Sediment Control Barriers on Construction Sites.
- #3318 Faucette, L., Alex Marks, and Rod Tyler. 2007. Vegetation Cover – A Comparison of Compost ECB vs Hydroseed Applications.
- #3319 Faucette, L., Alex Marks, and Rod Tyler. 2007. Runoff and Erosion: A Comparison of Compost ECBs vs. Straw Mulch + PAM.
- #3320 Faucette, L., Alex Marks, and Rod Tyler. 2007. Stormwater Runoff, Infiltration, and Erosion – A Comparison of Compost ECBs vs Hydroseed Applications.
- #3321 Faucette, L., Alex Marks, and Rod Tyler. 2007. Nutrient Runoff – A Comparison of Compost ECBs vs Hydroseed Applications.
- #3322 Faucette, L., Buzz Ferver, Alex Marks, and Rod Tyler. 2007. Phosphorous Reduction Using Compost.
- #3323 Faucette, L., Buzz Ferver, Alex Marks, and Rod Tyler. 2008. Hydraulic Performance & Design for Channel Lining & Stream Bank Stabilization Using Low Impact Development Design Strategies.
- #3324 Faucette, L.B. 2008. Filtrexx International's Carbon Reduction & Climate Change Mitigation Efforts.
- #3325 Faucette, L.B. 2008. Removal of Urban and Post-Construction Storm Water Pollutants with the Filtrexx Treatment Train.
- #3326 Faucette, L.B. 2008. Field Testing of Filtrexx Filtration System for Urban Stormwater Quality Retrofits with City of Chattanooga, TN
- #3327 Faucette, L.B. 2008. Performance & Design of Filtrexx Slope Protection at Various Depths & Slope Grades vs Common Slope Stabilization Practices.

- #3328 Faucette, L.B. 2008. Performance capacity of Filtrexx Treatment Train Products in Urban Runoff Applications.
- #3329 Faucette, L.B. 2011. Navigating the New World of Biodegradable and Compostable Plastics.
- #3330 Faucette, L.B. 2011. Alternative FilterMedia for Filtrexx FilterSoxx Applications.
- #3331 Faucette, L.B. 2011. Installation Effects on Performance of Sediment Control Barriers.
- #3332 Faucette, L.B. 2011. Sediment Removal Performance of Filtrexx SiltSoxx and Rock Bags in Inlet Protection Applications.
- #3333 Faucette, L.B. 2013. Performance of Sediment Control Barriers under Large-Scale Testing.
- #3334 Faucette, L.B. 2014. Performance of 5-inch SiltSoxx™.
- #3335 Faucette, L.B. 2016. Ecosystem Service Benefits of Filtrexx Compost-Based Sustainable Management Practices (SMPs).
- #3336 Faucette, L.B. 2017. Understanding and Identifying Compost Filter Media used in Compost Filter Socks.

Federal Standard Specifications

- 7.22 AASHTO Filter Berms and Filter Socks: Standard Specifications for Compost for Erosion/Sediment Control. 2006. Developed by R. Alexander Associates.
- 7.23 AASHTO Standard Specifications for Compost Berms (MP 9-03) and Compost Blankets (MP 10-03) used for Erosion and Sediment Control. 2003. Developed by R. Alexander Associates.
- 7.24 USEPA NPDES Phase II. 2006. Compost Blankets: Construction Site Storm Water Runoff Control. National Menu of Best Management Practices for Construction Sites. http://cfpub.epa.gov/npdes/stormwater/menuofbmps/con_site.cfm
- 7.25 USEPA NPDES Phase II. 2006. Compost Filter Socks: Construction Site Storm Water Runoff Control. National Menu of Best Management Practices for Construction Sites. http://cfpub.epa.gov/npdes/stormwater/menuofbmps/con_site.cfm
- 7.26 USEPA NPDES Phase II. 2006. Compost Filter Berms: Construction Site Storm Water Runoff Control. National Menu of Best Management Practices for Construction Sites. http://cfpub.epa.gov/npdes/stormwater/menuofbmps/con_site.cfm
- 7.26 USDA NRCS Agronomy Technical Note No.4. 2011. Utilization of Compost Filter Socks. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1048852.pdf

HOW TO USE THIS MANUAL

Welcome to the tenth edition (10.0) of the Filtrexx International Standard Specifications and Design Manual for Erosion, Sediment, and Pollution Control and Storm Water Management Practices. Although this manual may be used by anyone interested in the technical aspects of using compost practices and/or Filtrexx International products for erosion and sediment control and storm water management applications, it is intended to assist engineers, architects, land planners, and other technical and design professionals to more easily and readily specify and utilize these practices in their design plans.

Secondarily, as state agencies begin the needed process of updating their erosion and sediment control or storm water design manuals, this manual and the sections herein shall serve as templates or ready to use sections that can be adopted by state agencies for their updated standard specification and design manuals. This design manual has been expanded into seven principle sections:

- Section 1.0: Erosion and Sediment Control - Construction Activities;
- Section 2.0: Storm Water Management - Post-Construction Activities;
- Section 3.0: Living Walls - Post-Construction Activities;
- Section 4.0: Pollutant Removal;
- Section 5.0: Filtrexx Support Practices;
- Section 6.0: Filtrexx SWPPP Cut Sheets;
- Section 7.0: Appendices – Technical Research Summaries and Federal Level Standard Specifications.

While there is significant overlap between sections, and common sense tells us they should not be separated, many existing state manuals currently divide these areas of design and planning. Specifically, pertaining to this manual, Section 1.0 will address practices for construction activities and land disturbing activities, Section 2.0 and 3.0 will address practices for post-construction and long-term management of storm water, and Section 4.0 and 5.0 describes specific support practices that can increase the performance of those practices described in Section 1.0, 2.0, and 3.0.

Whereas, this manual is intended primarily for design professionals it does not constitute a work of research but does, where applicable, rely on completed and published research, or test results from reputable laboratories, to generate the performance and design information provided herein. Preference is given to research published in peer-reviewed scientific journals, and secondarily to third party research conducted by universities and federal agencies or applied field research from known success on case studies. As new research and results from testing programs becomes available it shall be incorporated into the performance and design information in this manual, meaning this manual is a dynamic living document and will continually be updated.

Design drawing details and photographs have been included in each section for most Filtrexx products and practices; these may be used without permission for individuals or groups preparing erosion and sediment control or storm water pollution prevention plans. An appendix included at the end of the design manual will contain referenced and relevant technical reports and research papers. On behalf of the staff at Filtrexx International and the courageous team of technical reviewers who helped make this possible, we hope you find this manual useful and helpful in your endeavors.

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Filtrexx International would like to thank our customers, progressive engineers in the field who have worked with us over the last seven years to understand where Filtrexx Products fit and most of all, our incredible Certified Installer network. Many of the new ideas that have been field tested and then end up in the design manual indeed have been from creative site work with our Certified Installer crews. Thanks for the hard work and valuable contributions.

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ADDITIONAL INFORMATION

For other references on this topic, including additional research reports and trade magazine and press coverage, visit the Filtrexx website at www.filtrexx.com

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