



## MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Martin O'Malley  
Governor

Robert M. Summers, Ph.D.  
Secretary

Anthony G. Brown  
Lieutenant Governor

March 19, 2013

Mr. Chris French  
Stormwater Regulatory Manager  
Filtterra® Bioretention Systems  
11352 Virginia Precast Road  
Ashland, VA 23005

Dear Mr. French:

Thank you for your email to the Maryland Department of the Environment (MDE), Water Management Administration (WMA) regarding the use of the Aqua Bric® Type IV permeable interlocking concrete paver (PICP) in conjunction with the Filtterra® BioPave system. WMA has evaluated the product descriptions and supporting information with respect to potential treatment applications in Maryland. We offer the following:

In Maryland, environmental site design (ESD) must be used to the maximum extent practicable (MEP) to reduce runoff and mimic natural hydrologic conditions. The use of ESD planning techniques and treatment practices must be exhausted before any approved structural practices may be used. The Aqua Bric® Type IV PICP is a proprietary type of permeable pavement. Permeable pavements that are designed in accordance with the criteria found in Chapter 5 (see pp. 5.46 to 5.51) of the 2000 Maryland Stormwater Design Manual may be used to meet the ESD mandate. With respect to this product, the limiting criterion is the requirement that the pavement surface have a permeability of eight inches per hour or greater. WMA has reviewed your recent submittal and concurs that the results of independent testing conducted in accordance with ASTM C1701/C1701M-09 demonstrate that the Aqua Bric® Type IV PICP meets the surface permeability criterion. Therefore, WMA has no objection to this product's use as a permeable pavement provided all pertinent design criteria are met.

With respect to the Aqua Bric® Type IV PICP's use as a component of the Filtterra® BioPave variant, please be aware that any practice that uses the Filtterra® media is subject to the same conditions that apply to the Filtterra® system as described in WMA's February 22, 2013 letter to you. These conditions are a maximum drainage area of 20,000 square feet to a filter bed of 91 square feet; meeting a reduced holding requirement of 25% of the design volume; and limiting the practice to water quality volume (WQ<sub>v</sub>) treatment. Where the product includes an infiltration component, the recharge volume (Re<sub>v</sub>) may be addressed as well. Also, because they do not meet the Cp<sub>v</sub> requirements, systems that use the Filtterra® media may not be used as a stand-alone ESD practices. However, practices that do not meet Cp<sub>v</sub> requirements may be used provided they are part of a system of practices that captures, stores, and slowly releases the required volume of runoff at rates meeting the channel protection flow criteria.



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WMA has no objections to the use of Aqua Bric® Type IV PICP for redevelopment, pretreatment, and retrofitting provided they are accepted locally. However, local jurisdictions may request that a letter from MDE/WMA be provided verifying product classification. Please consider this that letter. Thank you again for your interest. If you have any additional questions, please contact me at 410-537-3550 or scomstock@mde.state.md.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Stewart R. Comstock". The signature is fluid and cursive, with the first name "Stewart" and last name "Comstock" clearly legible.

Stewart R. Comstock, P.E.  
Regulatory & Compliance Engineer  
Sediment, Stormwater & Dam Safety Program