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Surface Water Treatment Device Performance Declaration

Boggs Environmental Consultants, Inc. (BEC) observed the testing conducted on the StormTech Isolator Row Plus system in January 2020, which was carried out in accordance with NJDEP Filter Protocol, *New Jersey Department of Environmental Protection Laboratory Protocol to Assess Total Suspended Solids Removal by a Filtration Manufactured Treatment Device (January 2013)*. The data collected from this testing of the StormTech Isolator Row Plus system was utilized to calculate Mitigation Indices (MI) in accordance with *British Water How To Guide: Applying The CIRIA SuDS Manual (C753) Simple Index Approach To Proprietary Manufactured Stormwater Treatment Devices.* Table A provides a description of the StormTech Isolator Row Plus manufactured treatment device (MTD).

Table A – Description of the StormTech Isolator Row Plus System

Product Details	Description
Manufacturer	Advanced Drainage Systems, Inc.
Treatment Device Name/Model	StormTech Isolator Row PLUS
General Description	StormTech Isolator Row® PLUS provides for settling and filtration of sediment as first-flush stormwater enters and ultimately passes through the filter fabric. The open-bottom chambers allow stormwater to flow out, while particulate matter is captured in Isolator Row PLUS. Flows exceeding the maximum treatment flow rate (MTFR) are bypassed into the rest of the connected StormTech system, resulting in a maximum capacity flow rate that exceeds the MTFR. Flows exceeding the first-flush flow rate do not interfere with the material captured within Isolator Row and the treated runoff is safely retained.
Envisaged application	Stormwater treatment technology used for pollutants capture and retention.
Pollutants captured	TSS, metals, hydrocarbons

Table B provides a comparison of different sized StormTech Isolator Row Plus manufactured MTDs in relation to size, capacity flow rates, connected areas and mitigation indices.

Table B - Comparison of Different Sized StormTech Isolator Row Plus MTDs

Parameter	Value						Unit
Model (single chamber)	SC-160	SC-310	SC-740	DC-780	MC-3500	MC-4500/MC-7200	
Size (L x W x H)	2.30x0.64x0.31	2.30x0.86x0.41	2.30x1.30x 0.76	2.30x1.30x 0.76	2.29x1.96x1.14	1.32/2.11x2.54x1.52	(m)
Sediment Storage Capacity	9.8	15.0	23.6	23.6	36.8	25.4/40.8	(l)
Treatment Flow Rate	3.0	4.6	7.2	7.2	11.2	7.8/12.5	(l/s)
Connected Area	0.040	0.061	0.096	0.096	0.149	0.104/0.166	ha
Device Head (at maximum flow rate)	0.406	0.559	0.914	0.991	1.372	1.753	(m)
Pollution Retention Flow Rate	No scour testing is performed on Isolator Row for the NJCAT test. Scour testing is not relevant for Isolator Row. Flows exceeding the first-flush flow rate are bypassed and do not interfere with the material captured within Isolator Row. The treated runoff is undisturbed and safely retained without risk of scour.						(l/s)
Maximum Capacity Flow Rate	Flows exceeding the maximum treatment flow rate are bypassed into the rest of the connected StormTech system. Maximum capacity flow rate will vary, depending on numerous factors, including the number of connected StormTech chambers (i.e. the number of chamber rows and lengths of rows) that are designed to accommodate the bypassed flow.						(l/s)
Device Head Loss (at treatment flow rate)	0.229 This is a constant value as the treatment flow rate increases linearly with the area of filter fabric						(m)
TSS capture and retention efficiency	81.2						%
TSS mitigation index	0.8						
Metals mitigation index	0.6						
Hydrocarbon mitigation index	0.7						

Test report and calculations for the StormTech Isolator Row were investigated to verify the compliance with the *British Water How To Guide: Applying The CIRIA SuDS Manual (C753) Simple Index Approach To Proprietary Manufactured Stormwater Treatment Devices*. To ensure consistent performance indices were achieved at varying device model sizes, the scaling protocols from section 6.1 of the British Water How to Guide: Applying the CIRIA SuDS Manual (C753) Simple Index Approach to Proprietary/Manufactured Stormwater Treatment Devices were followed.

Witnessing party:	William R. Warfel
Position:	Principal Environmental Scientist
Company:	Boggs Environmental Consultants, Inc.
Signed:	
Date:	June 28, 2023