Rhode Island Department of Environmental Management

Office of Water Resources – Stormwater Technology Review Committee

235 Promenade St. Providence, RI 02908 Ph: 401-222-4700

Alternative Stormwater Technology Program

Vendor Information:
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Technology Name:
Stormceptor© STC Models:
450i, 900, 1200, 1800, EOS 12-590, 2400, 3600, 4800, 6000, 7200, 11000, 13000 and 16000

Approval Type
Pretreatment / Retrofit

Re-certification Dates:
Issued: June 1, 2021
Revised: June 2, 2022
Expires: June 1, 2026

RE-CERTIFICATION:

The Rhode Island Stormwater Technology Review Committee which consists of members from the Department of Environmental Management (DEM), Department of Transportation (DOT) and the Coastal Resources Management Council (CRMC) have reviewed the **Stormceptor®** application for re-certification of its Technology Approval and accepted use for Stormwater Treatment in the State of Rhode Island.

In accordance with Stormwater Rule 250-RICR-150-10-8.9B, **Contech Engineered Solutions, LLC** has petitioned the permitting agencies to re-certify the **Stormceptor®** as an acceptable structural stormwater control described in Stormwater Rule 250-RICR-150-10-8.31. They have submitted a re-certification application which documents any changes made to the design of the **Stormceptor®**, additional studies that have been conducted on the **Stormceptor®**, reported system failures and annual lists of all units installed in the state of Rhode Island since original certification was issued on February 5, 2016.

The **Stormceptor®** is a proprietary hydrodynamic separator pre-treatment/retrofit device which has seen widespread use for decades. Several studies have been conducted to verify the **Stormceptor®**'s performance. Additionally, in accordance with provisions of the Technology Assessment Protocol for Innovative and Emerging Technologies as described in Stormwater Rule 250-RICR-150-10 Sections 8.39 and 8.40, the Stormceptor has been recognized as an effective proprietary pre-treatment device and hydrodynamic separator by several states which are members of the Technology Acceptance Reciprocity Partnership (TARP). The Massachusetts Department of Environmental Protection provided a fact sheet titled "Stormwater Technology: Stormceptor (Hydro Conduit, formerly CSR New England Pipe)" which was revised in 2003. This fact sheet explained the results of a Strategic Envirotechnology Partnership (STEP) evaluation of the entitled "Technology Assessment, Stormceptor CSR New England Pipe, January 1998". The Maryland Department of the Environment's Alternative/Innovative Technology List of Approved Stormwater Practices (August 2017) lists the **Stormceptor®** as a hydrodynamic device that is approved for stormwater pre-treatment, with an original approval date of April 16, 2001. The New Jersey Department of Environmental Protection also issued the **Stormceptor®** certification as a manufactured treatment device (MTD) to pre-treat stormwater in September 2011, although this certification expired in September of 2013. Additionally, the Virginia Department of Environmental Quality approved the **Stormceptor®** on August 13, 2014 as a manufactured treatment device. The device is also utilized as a hydrodynamic separator pre-treatment device in the remaining TARP states, California and Pennsylvania.

The **Stormceptor®** is a pretreatment or retrofit device that captures TSS from stormwater runoff as described in Stormwater Rule 250-RICR-150-10-8.31. It is a vertically oriented cylindrical structure manufactured from pre-cast reinforced concrete and fiber reinforced plastic, designed to remove sediment and trash from stormwater. This product was developed by **Contech Engineered Solutions, LLC**. The **Stormceptor®** is approved for on-line and off-line use.

The manufacturer has demonstrated that this product meets the minimum water quality standards for pretreatment as described in Stormwater Rule 250-RICR-150-10-8.31. It is approved for the following pollutant removal: **75% TSS.** The **Stormceptor®** is NOT recognized for removal of Pathogens, Total Phosphorus or Nitrogen. This device may be used as an approved pre-treatment or retrofit device provided that the design, installation, and maintenance are conducted in accordance with the following terms and conditions:

I. GENERAL CERTIFICATION REQUIREMENTS

1. The system must be designed and installed to adhere to the manufacturer's specifications titled "Stormceptor General Specification". This specification is located in the Technical Guides section of the manufacturer's website (https://www.conteches.com/technical-guides/search?filter=1WBC0O5EYX).

2. The STC devices listed in the attached "Approved Stormceptor® Models Sizing Table" are **certified as pretreatment** devices in accordance with Stormwater Rule 250-RICR-150-10-8.31, provided the device treats the flow of the first inch of runoff from the capture area, unless waived by the state permitting agency. The system's design must utilize the flow rates, impervious catchment sizes, and maximum sediment capacities listed in the attached "Approved Stormceptor® Models Sizing Table".

3. The applicant must provide the RI specific manufacturers design sheet for Departmental review or provide the manufacturer's review approval. All units that capture greater than one acre of impervious cover must be reviewed by the manufacturer.

4. This device is **certified as a retrofit device** in accordance with Stormwater Rule 250-RICR-150-10-8.6A. Retrofits are allowed flexibility with regards to the eleven minimum standards described in Sections 8.6 through 8.17 of Stormwater Rule 250-RICR-150-10, but in general they are considered effective if they capture at least 50% of the catchment and meet the target water quality treatment of at least the first 0.5 inches of the water quality volume.

5. The approved devices shall be located such that they are accessible for maintenance and/or emergency removal of oil or chemical spills.

6. The device cannot be used in series with another Hydrodynamic separator to achieve enhanced removal rates for TSS.

II. MAINTENANCE REQUIREMENTS

1. Standard permitting conditions for inclusion of this technology will, at a minimum include the following:

    a. Each individual owner must ensure that any and all of their proprietary stormwater treatment devices are maintained in accordance with the manufacturer's specifications, which are provided in the **Stormceptor®** Operation & Maintenance Manual. https://www.conteches.com/Portals/0/Documents/Maintenance%20Guides/Stormceptor-STC-Maintenance-Guide.pdf?ver=2020-05-21-114420-030
    b. Each individual owner must ensure that any and all of their proprietary stormwater pre-treatment devices' are maintained in accordance with the requirements stated in Stormwater

Rule 250-RICR-150-10-8.31-C, which requires the sump to be inspected a minimum of 2 times per year. Additionally, the device must be cleaned out when either pollutant removal capacity is reduced by 50% or more, or when 50% or more of the device's pollutant storage capacity is filled or displaced.

c. All material removed from the unit must be properly disposed of and is the responsibility of the owner.

d. The applicant must include a copy of the **Stormceptor®** Operation & Maintenance Manual in their project specific long term operation and maintenance plan.

2. The applicant must provide evidence of a maintenance contract which extends for a minimum of two years. The contracted maintenance provider must receive training by **Contech Engineered Solutions, LLC** on how to properly maintain **Stormceptor®** devices. This requirement excludes maintenance providers recognized by the RIDEM to be qualified in maintenance of **Stormceptor®** devices.

III. REPORTING REQUIREMENTS

1. Upon request from the owner of any **Stormceptor®** system installed in the State of Rhode Island, the vendor shall provide the owner with a recommended maintenance schedule after the first year of operation. If a recommended maintenance schedule is requested by the owner after the first year of the device's operation, then the owner is responsible for notifying the vendor of any additional pollutant loads on sites where contributing drainage areas may be subject to further development (i.e., strip malls).

2. The Vendor shall provide a listing to the RIDEM Office of Water Resources of all systems installed within the State of Rhode Island on an annual basis.

3. The Vendor shall provide an annual listing to the RIDEM Office of Water Resources of all Rhode Island maintenance providers that they trained in **Stormceptor®** maintenance.

4. The Vendor shall immediately notify the RIDEM Office of Water Resources if and when any changes are made to the model name or number of any **Stormceptor®** device for all models applicable to this certification.

5. The Vendor shall immediately notify the RIDEM Office of Water Resources if and when any revisions are made to the design, installation operation and maintenance manuals for all models applicable to this certification. Revisions deemed by the RIDEM to be substantial, may require re-application to the Alternative Stormwater Technology Program.

6. The Vendor shall notify the RIDEM at least thirty (30) days following any proposed transfer of ownership of the Component technology. Notification shall include the name and address of the new owner and a written agreement between the existing and new owner specifying a date for transfer of ownership, responsibility, and liability for the Component. All provisions of this Certification shall be applicable to any new owners.

IV. RIGHTS OF THE RIDEM AND CRMC

1. The RIDEM may suspend, modify or revoke this approval for cause, including but not limited to: non-compliance with any of the conditions or provisions of this approval, mis-representation or failure to fully disclose all relevant data, or receipt of new information indicating that the use of the **Stormceptor®** system is contrary to the public interest, public health or the environment.

2. This approval does not represent an endorsement of the **Stormceptor®** system by the RIDEM, RIDOT or CRMC. This letter of approval may be reproduced only in its entirety.

3. The **Stormceptor®** General Specification and **Stormceptor®** operation and maintenance manual referenced herein are approved upon the date of approval of this Certification.

4. The RIDEM reserves the right to suspend or revoke this Certification if updated design, installation, and O&M manuals are not provided to the RIDEM within thirty (30) days of RIDEM request or one hundred and eighty (180) days prior to the expiration date of this Certification. All revisions must be reviewed and approved by the RIDEM prior to re-certification.

Eric Beck

Digitally signed by Eric Beck
Date: 2022.07.06 16:25:56 -04'00'

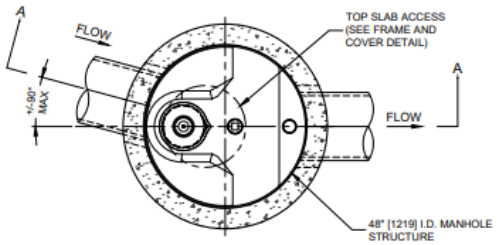
Eric A. Beck, P.E. Date
Administrator of Groundwater and Wetlands Protection
RIDEM – Office of Water Resources

ATTACHMENT

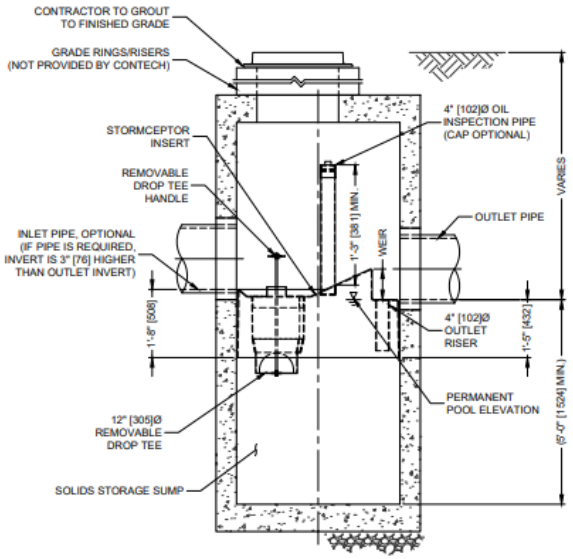
Table 1: Stormceptor Sizing Table for 75% TSS Removal

Model #	Maximum Treatment Flow Rate (cfs)	Maximum Impervious Treatment Area (acres)	Max Sediment Storage Volume (ft^3)
STC 450i	0.28	0.38	46
STC 900	0.64	0.85	89
STC 1200	0.64	0.85	127
STC 1800	0.64	0.85	207
EOS 12-590	0.64	0.85	166
STC 2400	1.06	1.06	205
STC 3600	1.06	1.06	373
STC 4800	1.77	2.38	543
STC 6000	1.77	2.38	687
STC 7200	2.47	3.33	839
STC 11000	3.53	4.75	1,086
STC 13000	3.53	4.75	1,374
STC 16000	4.94	6.66	1,677

*Impervious areas are only approximate. Actual areas will vary based on site-specific conditions.



PLAN VIEW
TOP SLAB NOT SHOWN



SECTION A-A

Stormceptor®
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP

STORMCEPTOR DESIGN NOTES

THE STANDARD STC450I CONFIGURATION WITH ROUND, SOLID FRAME AND COVER, AND INLET PIPE IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

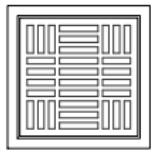
CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (cfs [L/s])			
PEAK FLOW RATE (cfs [L/s])			
RETURN PERIOD OF PEAK FLOW (yrs)			
RIM ELEVATION			
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			

NOTES / SPECIAL REQUIREMENTS:

FRAME AND COVER
(MAY VARY)
NOT TO SCALE



FRAME AND GRATE
(MAY VARY)
NOT TO SCALE

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. STORMCEPTOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STORMCEPTOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. STORMCEPTOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMCEPTOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

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STC450i
STORMCEPTOR
STANDARD DETAIL