



Alternative/Experimental OWTS Technology Program

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Technology Name

Perc-Rite® Drip Dispersal System

Series	Model	Description
ABD	WD-15 Washdown	15 GPM Pretreated Effluent 1-4 zones
ABD	WD-25 Washdown	25 GPM Pretreated Effluent 1-4 zones
ASD	ASD-15	15 GPM Septic Tank Effluent & Pretreated Effluent 1-8 zones
ASD	ASD 25-250	25, 40, 60, 90, 120, 150, 200, & 250 GPM Septic Tank Effluent & Pretreated Effluent 2-64(+) zones

Technology Approval Type:

Alternative Leachfield Component – Class Two

Design Authority

Class II & Class III RI Designers

Certification Dates:

Issued: January 9, 2012
 Revised: August 24, 2022
 Expires: August 24, 2027

CERTIFICATION

The Rhode Island Department of Environmental Management (RIDEM) has reviewed the Alternative Technology renewal application for the Perc-Rite® Drip System a subsurface drip dispersal leachfield component, hereafter referred to as the “Component”. Based upon information contained in the application the RIDEM hereby accepts the Component for listing on the RIDEM Alternative and Experimental (A/E) Technology List as a Class Two Leachfield Component.

The Component receives time-dosed effluent from a final dosing tank after either a septic tank or a RIDEM approved pre-treatment system and following 115-micron disc filtration, disperses effluent below the soil surface. Continuously self-cleaning pressure compensating emitters (Bioline-brand as manufactured by Netafilm) are located every one or two feet on-center inside the polyethylene drip tubing (Netafilm ½”). The Component is automatically forward flushed, and the disc filters are automatically backwashed at the beginning of each cycle.

Design and installation of the Component shall be in accordance with the following terms and conditions:

I. General Design Requirements

1. The Component approval is for the Perc-Rite® Drip System only.

2. Vendor Review of Designs
 - a. Until a designer is certified by the Vendor, all designs are to be reviewed by the Vendor.
 - b. All designs, including those prepared by a vendor-certified designer, must be reviewed by the Vendor when the design meets the following criteria:
 - i. Designs proposing seven or more bedrooms,
 - ii. Designs with a design flow greater than 700 gpd,
 - iii. All commercial designs, and
 - iv. When the design hydraulic loading rate is greater than or equal to 0.4 gal/ft²/per day.
3. For residential use, the dosing tank volume must be equal to two times the design flow. Flow equalization volume utilized to time dose an upstream pretreatment component may be used as a portion of the drip dose equalization volume requirements.
4. For high-strength wastewater and for systems with a design flow of 2,000 gallons per day (gpd) or larger, the volume of the dosing tank must be two-times the design flow, two-times the average daily flow, or 1.5 times the peak flow, whichever is greater. Flow equalization volume utilized to time dose an upstream pretreatment component may be used as a portion of the drip dose equalization volume requirements.
5. The drip dispersal tubing shall be installed at a depth of six to 24-inches below grade.
6. The drip dispersal field shall be sized in accordance with this approval. Within the required footprint area, the tubing shall be located one or two feet on center.
7. Automatic field flushing and a flow meter are required on every installation, with backwash returned to the inlet of the septic tank, or to the inlet of the treatment system if it is not preceded by a septic tank.
8. The maximum grade on which the Component may be proposed for use is thirty percent.
9. Top feed manifolds are required with slopes greater than 3-percent.
10. A minimum five (5) foot horizontal separation distance shall be provided between the outer edge of the dripline and any ground surface elevation less than the elevation of the invert of the dripline. The adjacent side slope shall not be steeper than 3:1 (horizontal: vertical) for a twenty-five (25) foot minimum distance from the edge of the Component.
11. Each installation must incorporate pressure gauges or air/vacuum relief valves with air tank valves to measure pressure, unless the system is pre-engineered.
12. Wastewater delivered to the Component must be time dosed.
13. The control panel must incorporate an event counter and elapsed-time meter.
14. The Component must be designed with a septic tank that includes a septic tank effluent filter or a pretreatment unit with a screened pump vault.
15. The Component is not approved for H-20 loading.
16. Design and installation shall be in strict conformance with the RIDEM-approved “RI Perc-Rite Drip Dispersal Design Guide” dated: **February 10, 2015**.
17. Design of the Component shall only be performed by a Rhode Island licensed designer who has received training and is authorized in writing by the Vendor to design the Component.
18. Installation of the Component shall only be performed by a Rhode Island licensed installer who has received training and is authorized in writing by the Vendor to install the Component.
19. Each Component design shall meet all other applicable OWTS standards and receive prior approval by the RIDEM pursuant to the regulations in effect at the time of application.

A. Septic Tank Effluent (“ASD” system packages)

1. Where the Component is proposed for dispersal of **septic tank effluent**, an ASD series system package must be used.
2. The Component shall be sized using the hydraulic loading rates for septic tank effluent in Table 1 below.
3. Where the Component is used to disperse septic tank effluent, separation to the seasonal high-water table is three (3) feet statewide unless otherwise specified by permit; separation to an impervious layer shall be five (5) feet statewide unless otherwise specified.
4. Where the Component is proposed for use with septic tank effluent with a design flow of 2,000 gpd or greater, the design must incorporate telemetry.

B. Pre-treated Effluent (“ASD” or “WD” system packages)

1. Where the Component is proposed for dispersal of pre-treated effluent, either an ASD or WD system package may be used.
2. Where the Component is proposed for use to disperse pre-treated effluent, it shall be preceded by a RIDEM approved A/E treatment technology, which achieves a minimum treated effluent quality of TSS and BOD of 30 mg/L each and FOG of 5 mg/L.
3. The Component shall be sized using the hydraulic loading rates for pre-treated effluent in Table 1 below.
4. Where the Component is used to disperse pre-treated effluent, separation to the seasonal high-water table is two (2) feet statewide unless otherwise specified by permit; separation to an impervious layer shall be four (4) feet statewide unless otherwise specified by permit.

TABLE 1

Loading rates shall be based upon texture, structure, and consistence of the most restrictive horizon within 1.5 feet below the proposed base of the Perc-Rite® Drip System.

Soil Category¹	Soil Texture	Soil Structure	Soil Consistence In-Hand Using Soil Clods	Perc-Rite® Loading Rate Septic Tank Effluent (gal/ft²/day)	Perc-Rite® Loading Rate Pre-Treated² Effluent (gal/ft²/day)
1 (1m)	cos lcos s,ls cosl,fs	structureless-single grain subangular blocky	loose friable	0.70 (0.61)	2.3
2	vfs, lvfs	structureless- single grain	loose	0.61	2.7
3	ls sl l	granular, subangular blocky	very friable to friable	0.70	3.5
4 (4m)	lfs, fsl lvfs, vfs	granular, subangular blocky	very friable to friable	0.61 (0.70)	3.1
5	vfsl sil, si	subangular blocky	very friable to friable	0.52	2.7

6 (6m)	lcos, ls lfs cosl, sl, l	structureless massive	very friable to friable	0.61 (0.70)	2.3
7 (7m)	vfs fsl, vfsl sil, si	structureless-massive	very friable to friable	0.52 (0.61)	2.1
8 (8m)	all textures	structureless-massive	firm to very firm	0.46 (0.48)	1.9
9 (9m)	all textures	platy, structureless-massive	firm to very firm	0.40 (0.43)	1.5
10	all textures	platy, structureless-massive	extremely firm	Not Allowed	Not Allowed

- Notes:
1. "m" means soil has gravelly or channery coarse fragment modifiers.
 2. RIDEM A/E treatment technology, which achieves a minimum treated effluent quality of TSS and BOD of 30 mg/L each and FOG of 5 mg/l.

II. Training

1. The Vendor shall make training available for designers, installers, and service providers. Installer training may be held via webinar, classroom, or field training. Designer certification from the Vendor must follow collaboration on design plans and demonstration of proficiency.
2. The Vendor shall make available to the public, a means of verifying individuals, by name and category, who have received training and are authorized in writing by the Vendor to design, install, and maintain the Component.

III. General Certification Requirements

1. The Vendor shall submit a guidance document detailing design, installation, operation and maintenance requirements for the Component.
2. The Vendor is responsible for providing any revisions to the design, installation, operation and maintenance guidance document(s) to RIDEM for review and approval within thirty (30) days of RIDEM request. All manuals must be provided to the RIDEM in electronic portable document format (pdf).
3. The Vendor shall notify the RIDEM in writing of any changes to the Component, including its discontinuation. Modifications deemed by the RIDEM to be substantial, may require re-application to the alternative/experimental program.
4. This Class Two approval shall be effective until the expiration date of this Certification.
5. If the Vendor wishes to extend this Class Two approval beyond its expiration date, they shall apply for and obtain a renewal of this approval. The Vendor shall submit a renewal application in accordance with the RIDEM Onsite Wastewater Treatment System Rules.
6. The Vendor shall notify the RIDEM at least thirty (30) days prior to 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 technology. All provisions of this approval shall be applicable to any new owners.
7. The Vendor shall provide any purchaser of the Component with a copy of this approval letter prior to the sale of the Component.

IV. Operation and Maintenance Requirements

1. Operation and maintenance of the Component shall be performed in strict conformance with the RIDEM approved “Routine Operation and Maintenance Procedure for Perc-Rite® Drip Dispersal System for Models: ASD, QM, WD” dated January 2020.
2. The RIDEM approved “Routine Operation and Maintenance Procedure for Perc-Rite® Drip Dispersal System for Models: ASD, QM, WD” dated January 2020 shall be provided to the Owner/Operator.
3. The Component shall be maintained according to the Vendor’s specifications.
4. The Vendor must offer for sale a minimum two-year service contract that must include service to the Component and provide as an option, service to all A/E elements of the treatment train in addition to the Component, as applicable.
5. Vendor trained homeowners may perform O&M on their own Component; training must have been received for all components of the treatment train on which a homeowner wishes to perform O&M.
6. The Applicant/Owner shall record copies of the OWTS construction permit issued by the RIDEM and a copy of the executed O&M contract(s) for the Component, and all other A/E components in the treatment train, in the land evidence records of the applicable city or town prior to the RIDEM issuing the Certificate of Conformance for each installation.
7. a.) A public or private maintenance entity (service provider) shall be retained continuously for the life of the Component and all other A/E components of the treatment train, unless a Vendor-authorized homeowner is functioning as service provider for their own Component and all other A/E components of their system.
b.) An O&M contract must be held and filed in the land evidence records for any component(s) of the system for which the homeowner is not authorized by the applicable Vendor to perform O&M.
c.) The service provider shall be available to perform needed preventative maintenance, perform repairs as authorized, respond to emergency calls and conduct performance monitoring when required by this Certification or permit.
d.) The service provider shall perform an inspection of the Component at least quarterly for design flows of 2,000 gpd or more, and at least twice annually for smaller design flows.
e.) The service provider shall report to the system owner and Vendor, all inspections and maintenance calls conducted, and all problems or failures observed with a summary of the cause and remedial measures.
f.) No agreement with a maintenance entity shall be for less than two years.
8. The Vendor shall maintain a list of at least two trained, approved, and qualified service providers at all times. The list of Vendor approved Service Providers shall be made available to the public.
8. The Vendor shall have an inventory of Component parts available locally.

V. Rights of the RIDEM

1. The RIDEM may suspend, modify or revoke this approval for cause, including but not limited to: non-compliance with any of the provisions or conditions of this Certification, misrepresentation or failure to disclose fully all relevant data, or receipt of new information indicating that the use of the Component is contrary to the public interest, public health or the environment.
2. The “RI Perc-Rite Drip Dispersal Design Guide” dated: **February 10, 2015**, referenced herein is approved upon the date of approval of this Certification.

3. 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.
4. This approval does not represent an endorsement of the Component by the RIDEM. This letter of approval may be reproduced only in its entirety.

For - Mohamed J. Freij, PE, PLS
Supervising Sanitary Engineer, OWTS Program

Issuance Date