

**NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES  
DIVISION OF PUBLIC HEALTH  
ENVIRONMENTAL HEALTH SECTION  
ON-SITE WATER PROTECTION BRANCH**

**INNOVATIVE WASTEWATER  
SYSTEM APPROVAL**

Innovative Wastewater System Approval Number: IWWS 2002-03-R4

For: Tire Chip Substitution for Rock Aggregate in Dispersal Fields

Approval Date: October 24, 2002  
July 15, 2004  
August 4, 2008  
November 5, 2008  
December 31, 2024 Updated for 18E and renewed for 2025

In accordance with G.S. 130A-343 and 15A NCAC 18E Section .1700, an approval for the use of tire chips has been renewed and found to meet the requirements of an innovative when the following conditions are met.

I. Permitting

Approved tire chip aggregate may be substituted for washed gravel or crushed stone used in accordance with 15A NCAC 18E .0902 for dispersal fields receiving domestic strength effluent. Other tire chip aggregate substitutions may be made when designed by a North Carolina Professional Engineer and approved by the Department. The local health department (LHD) shall indicate on the Operation Permit (OP) that tire chip aggregate is being used and the name of the approved tire processor supplying the tire chip aggregate.

II. Specifications

Tire chip aggregate used as a rock substitute in dispersal fields shall meet the following specifications.

- A. Shall be free, 98 percent or better by weight, of balls of wire and fine rubber particles less than two mm in size.
- B. Shall be clean and free, 98 percent or better by weight of any soil particle fines either adhering to the chips or floating loose within the chips.
- C. Shall be nominally two inches in size and may range from ½ inch to a maximum of four inches in any one direction, 95 percent or better by weight.

- D. Shall not contain wire protruding more than one inch from the sides of the chips, 85 percent or better by weight.
- E. Tire chip aggregate shipped for use in on-site wastewater systems shall be supplied by a Department approved tire processor and accompanied by a bill of lading certifying that the above specifications have been met.

### III. Approval of Tire Chip Processors

- A. Any tire chip processor wishing to provide tire chip aggregate for use in on-site wastewater systems in North Carolina shall receive written approval from Department.
- B. Applications for approval must include the tire chip processor contact person, facility name and address, and facility location if different from the address.
- C. Tire chip processors must agree in writing to manufacture tire chips meeting the specifications in Part II of this Approval.
- D. Approved tire processors for tire chip aggregate for subsurface wastewater systems shall be listed on the On-Site Water Protection Branch web page.
- E. Noncompliance with this approval may subject a tire processor to suspension or revocation of their approval.
- F. Approvals are not transferable.
- G. The tire chip processor shall provide written instructions for the installation of systems using tire chip aggregate, including approved specifications, safety guidelines, and cleanup obligations for their customers.

### IV. Siting Criteria

The standard requirements for the siting of wastewater systems as specified in 15A NCAC 18E shall apply, except as follows:

- A. Approved tire chip aggregate may be substituted for washed stone or gravel in dispersal systems including bed systems.
- B. Approved tire chip aggregate may be used as a substitute for washed stone or gravel in repairs or extensions of dispersal field trenches.
- C. The minimum vertical separation required by Rule 15A NCAC 18E .0901(g)(2) shall not be reduced, unless preceded by an advanced pretreatment system meeting TS-I or TS-II effluent quality in accordance with 15A NCAC 18E .1201(a), Table XXV.

### V. System sizing

Tire chip aggregate may be substituted for rock or gravel aggregate on a one-to-one basis volumetrically based on 15A NCAC 18E.

#### VI. Installation Procedures

The following installation requirements shall be met when tire chip aggregate is used in whole or part of the dispersal system:

- A. All installation requirements in 15A NCAC 18E.
- B. Tire chip aggregate for on-site wastewater systems shipped from approved tire processors shall be accompanied by a freight bill of lading labeled as drainfield aggregate. Installers purchasing tire chip aggregate shall retain a copy of the bill-of-lading as documentation of the tire chip aggregate size and quality. A copy of the bill of lading shall be provided to the LHD prior to issuance of the OP and shall be retained with the operation permit filed with the LHD.
- C. The tire chip aggregate shall be covered with a single and continuous layer of non-woven filter fabric extending across the top of the tire chip aggregate prior to backfilling. The fabric shall have a unit weight of at least 3.0 oz./yd<sup>2</sup> in accordance with ASTM D-5261, a permittivity of at least 1.0 sec<sup>-1</sup> in accordance with ASTM D-4491, a trapezoid tear strength of at least 35 lbs. in accordance with ASTM D-4533 and have a mesh size equal to U.S. Sieve No. 70 in accordance with ASTM D-4751.
- D. All tire chips not used in the dispersal field trench shall be removed from the site by the installer. Any tire chips placed on top of the filter fabric after system inspection shall be covered adequately to prevent persons or pets from being punctured by the wires.
- E. For low pressure pipe systems, the orifices shall be protected from aggregate shadowing by sleeving the discharge pipe laterals within perforated pipe which meets the requirements of 15A NCAC 18E .0703(d).
- F. The installer shall be certified at a minimum as a Level II installer and shall be listed as receiving written instruction from the approved tire chip aggregate processor.

#### VII. Operation, Maintenance and Monitoring Requirements

Tire chip aggregate systems shall have a classification in accordance with Table XXXII of 15A NCAC 18E .1301.

#### VIII. Repair of System

The provisions of 15A NCAC 18E .1306 shall govern the repairs to malfunctioning wastewater systems.

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

