

## **NMED Statement of Approval and Specification for Tire Chips as a Replacement for Drainfield Aggregate**

In accordance with Liquid Waste Disposal and Treatment Regulations, 20.7.3 NMAC, the use of tire chips is approved for use, subject to the conditions of this specification. The Wastewater Technical Advisory Committee (WTAC), in conjunction with the New Mexico Environment Department (NMED) has completed a comprehensive review and analysis of the research, testing, and performance of tire chips as a substitute for rock aggregate in the drain fields of on-site wastewater systems, including field investigations, research and testing in North Carolina and in other states. Tire chip aggregate meeting conditions of this approval have been demonstrated to have the physical and chemical properties to withstand the loads and conditions normally associated with on-site wastewater systems. Tire chip aggregate systems are found to perform in a manner equal to or superior to conventional wastewater systems using rock aggregate. This approval, including the specifications of circumstances in which use of tire chip aggregate in wastewater systems is appropriate and conditions and limitations related to its use, reflects the NMED's consideration of all data and findings reviewed, and recommendation received from the WTAC.

### **I. Permitting:**

Approved tire chip aggregate may be substituted for washed gravel or crushed stone required under 20.7.3.701 NMAC, Design: Conventional Disposal Field; Design and Construction, for soil absorption systems receiving domestic strength wastewater. Other tire chip aggregate substitutions may be made when designed by a Professional Engineer and specifically approved by NMED. A designated representative of NMED shall indicate on the operation permit that tire chip aggregate is being used and name of the approved tire processor supplying the tire chip aggregate.

### **II. Specifications:**

Tire chip aggregate used as a rock substitute in liquid waste disposal trenches shall meet the following specifications:

1. Shall be free (98% or better by weight) of balls of wire and fine rubber particles;
2. Shall be clean and free ( 98% or better by weight) of any soil particles (fines) either adhering to the chips or floating loose within the chips;
3. Shall be nominally two (2) inches in size and may range from ½ to maximum of four (4) inches in any one direction (95% or better by weight);
4. Shall be graded or sized in accordance with size numbers 2, 3, and 24 of ASTM D-448 (standard sizes of coarse aggregate);

5. Shall not contain wire protruding more than one-half inch from the sides of the chips (95% or better by weight); and
6. Tire chip aggregate shipped for use in on-site wastewater systems in New Mexico shall be supplied by a NMED, Solid Waste Bureau (SWB) approved tire processor, and accompanied by a bill of lading certifying the specifications.

### **III. Tire Processor's Approval**

1. Any tire processor wishing to provide tire chip aggregate for use in onsite sewage treatment and disposal system drain fields in the state of New Mexico shall receive written approval from NMED, SWB. Tire Processors must provide proof that they can continually produce a tire chip course aggregate in conformance with the specification in Part II of this Statement of Approval.
2. Tire processors shall submit a representative sample of tire chips to NMED, SWB.
3. Samples shall be labeled with the name, address, date and designated use.
4. The processor shall have samples analyzed by a third party laboratory qualified to conduct particle size analysis for compliance with the above specifications.
5. Approved tire processors for tire chip aggregate for subsurface wastewater systems shall be listed on the Liquid Waste Program web page. (<http://www.nmenv.state.nm.us/fod/LiquidWaste>).
6. Documentation of tire processors' product meeting the above specifications shall be submitted as requested, at least yearly, to NMED, SWB.
7. Noncompliance with this approval may subject a tire processor to suspension or revocation of their approval.

### **IV. Siting Criteria:**

The standard requirements for the siting of wastewater systems as specified in 20.7.3 NMAC shall apply, except as follows:

1. Approved tire chip aggregate may be substituted for stone or gravel in subsurface liquid waste absorption systems, required by 20.7.3.701 NMAC.
2. The minimum vertical separation required by 20.7.3.302 and 303 NMAC shall not be reduced, notwithstanding the use of any advanced wastewater treatment system.

### **V. System sizing:**

The tire chip aggregate system shall be sized by the same criteria as gravel or stone in subsurface liquid waste absorption systems as required in 20.7.3.703 NMAC.

### **V1. Installation Procedures:**

The following installation requirements of tire chip aggregate shall be met:

1. The installation requirements of 20.7.3.701 NMAC.
2. Tire chip aggregate for subsurface liquid waste effluent absorption systems shipped from approved tire processors shall be accompanied by a freight bill of lading labeled as drain field aggregate. The bill-of-lading shall certify that the material meets the

specification for drainfield use. Contractors purchasing tire chip coarse aggregate shall retain a copy of the freight 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 local field office of the Environmental Health Division prior to issuance of the operation permit, and shall be retained with the operation permit filed with the local field office.

3. 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 before backfilling to prevent closure of void with earth backfill. The fabric shall have a unit weight of at least 3.0 oz./yd<sup>2</sup> (per ASTM D-5261) a permittivity of at least 1.0 sec<sup>-1</sup> (per ASTM D-4491), a trapezoid tear strength of at least 35lbs. ( per ASTM D-4533), and have a mesh size equal to U.S. Sieve No. 70 (A.O.S) ( ASTM D-4751).
4. All tire chips not used in the disposal trench shall be removed from the site by the installer or contractor for the onsite wastewater system.
5. No soil shall contaminate the tire chips during installation.
6. For LPP systems, the orifices shall be protected from aggregate shadowing by sleeving the discharge pipe laterals within the perforated pipe typically used for conventional disposal lines.

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

Operation, maintenance and monitoring requirements for the applicable system as required in 20.7.3 NMAC shall be the same as those in all onsite wastewater systems using stone or gravel as aggregate.

#### **VIII. Repair of System:**

The provisions of 20.7.3 NMAC shall govern the repairs to malfunctioning wastewater systems.