

## 15A NCAC 18E .0909 FILL SYSTEMS

(a) Both new and existing fill systems are a system in which all or part of the dispersal field media is installed in fill material. The system includes both the basal area of dispersal field and the toe slope in all directions.

(b) New fill systems may be installed on sites that meet the following requirements:

- (1) a minimum of the first 18 inches below the naturally occurring soil surface consists of suitable soil with the exception that no SWC exists within the first 12 inches below the naturally occurring soil surface and a groundwater lowering system is not used to meet this requirement;
- (2) systems shall be installed only on sites with uniform slopes less than 15 percent;
- (3) stormwater diversions, subsurface interceptor drains, or swales shall be required as needed upslope of the system to divert surface runoff or lateral flow from passing over or into the system; and
- (4) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe slope in all directions.

(c) New fill system design and installation shall be in accordance with the following criteria:

- (1) trenches shall be installed with a minimum of 24 inches separating the infiltrative surface and any LC for gravity distribution and pressure dosed gravity distribution, except for any SWC that requires 18 inches of separation. If pressure dispersal is used, the minimum separation distance shall be 18 inches between the infiltrative surface and any LC and 12 inches to a SWC. This separation requirement may be met with the use of a groundwater lowering system only in Soil Groups I and II with suitable structure;
- (2) fill systems with a DDF greater than 480 gpd shall use pressure dispersal systems;
- (3) fill material soil texture shall be classified as Group I up to the top of the trenches. The final six inches of fill used to cover the system shall have a finer texture, such as Group II or III soils, for the establishment of a vegetative cover;
- (4) minimum cover shall be six inches after settling;
- (5) additional fill may be added to facilitate drainage and accommodate final landscaping requirements at the site necessary to stabilize the fill, shed surface water, and establish a vegetative cover. The additional fill may be provided if the infiltrative surface is less than 30 inches below the finished grade;
- (6) where fill material is added, the fill material and the existing soil shall be mixed to a depth of six inches below the interface. Vegetative cover, organic litter, and the O horizon shall be removed before the additional fill material is incorporated;
- (7) the fill system shall be constructed as an elongated berm with the long axis parallel to the ground elevation contours of the slope;
- (8) the side slope of the fill system shall not exceed a rise to run ratio of 1:4. If the first 18 inches below the naturally occurring soil surface is Group I soil, the side slope of the fill shall not exceed a rise to run ratio of 1:3;
- (9) the outside edge of the trench shall be located a minimum of five feet horizontally from the top of the side slope;
- (10) the fill system shall be shaped to shed surface water and shall be stabilized with a vegetative cover;
- (11) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with PIA Approval; and
- (12) the setback requirements shall be measured from the projected toe of the slope. If this setback cannot be met, the setback requirements shall be measured five feet from the nearest edge of the trench if the following conditions are met:
  - (A) slope of the site does not exceed two percent;
  - (B) the first 18 inches of soil beneath the naturally occurring soil surface shall consist of Group I soils; and
  - (C) the lot or tract of land was recorded on or before December 31, 1989.

(d) An existing pre-July 1, 1977 fill site that does not meet the requirements of Paragraph (b) of this Rule may be utilized for a wastewater system if the following requirements are met:

- (1) substantiating data are provided by the lot owner indicating that the fill material was placed on the site prior to July 1, 1977;
- (2) the fill material shall have Group I soil texture for a minimum depth of 24 inches below the existing ground surface;

- (3) the fill material shall have no more than 10 percent by volume of fibrous organics, building rubble, or other debris, and shall not have discreet layers containing greater than 35 percent of shell fragments;
  - (4) if a minimum of 24 inches of Group I fill material is present, additional fill with soil texture classified Group I may be added to comply with the separation requirements of Subparagraph (e)(5) of this Rule;
  - (5) SWC is 18 inches or greater below the ground surface of the fill. This requirement shall be met without the use of a groundwater lowering system; and
  - (6) the area of suitable soil shall be large enough to include the basal area of dispersal field and the toe slopes in all directions.
- (e) Existing fill system design and installation shall be in accordance with Paragraph (c) of this Rule and the following criteria:
- (1) the DDF shall not exceed 480 gpd;
  - (2) pressure dispersal shall be used. LPP systems shall meet the requirements of Rule .0907(d) and (e) of this Section. Drip dispersal systems shall meet the requirements of Rule .0908(d) and (f) of this Section;
  - (3) the LTAR shall not exceed 0.5 gpd/ft<sup>2</sup> for pressure dispersal systems;
  - (4) existing fill sites with 48 inches of Group I soils may use conventional trenches with a maximum LTAR of 1.0 gpd/ft<sup>2</sup> in lieu of a pressure dispersal system;
  - (5) the minimum vertical separation to any LC shall be 24 inches for pressure dispersal systems and 48 inches for conventional systems. This vertical separation requirement may be met by adding additional Group I soil, but shall not be met with the use of a groundwater lowering system;
  - (6) where additional Group I fill is to be added, the side slope of the fill shall not exceed a side slope ratio of 1:3; and
  - (7) trench products approved under Section .1700 of this Subchapter shall be installed in accordance with their PIA Approval.
- (f) The LTAR for new and existing fill systems shall be determined in accordance with Rule .0901(c) of this Section and the following:
- (1) the LTAR shall be based on the most limiting, naturally occurring soil horizon within 18 inches of the ground surface or to a depth 12 inches below the infiltrative surface, whichever is deeper;
  - (2) the lowest LTAR for the applicable Soil Group shall be used for systems installed in accordance with this Rule; and
  - (3) for sites with a minimum of 18 inches of Group I soils below the naturally occurring soil surface or to a depth of 12 inches below the infiltrative surface, whichever is deeper, the LTAR shall not exceed 1.0 gpd/ft<sup>2</sup> for gravity or pressure dosed gravity distribution or 0.5 gpd/ft<sup>2</sup> for pressure dispersal systems.
- (g) The authorized agent or Department may approve other fill system designs on a site-specific basis in accordance with a PIA Approval or Rule .0509(c) of this Subchapter.

*History Note: Authority G.S. 130A-335(e) and (f); S.L. 2024-49, s.4.35;  
Eff. January 1, 2024;  
Amended Eff. June 1, 2026.*