

15A NCAC 02K .0207 SEEPAGE CONTROL

(a) All dams shall be designed and constructed to prevent the development of instability due to excessive seepage forces, uplift forces, or loss of materials in the embankment, abutments, spillway areas, or foundation. Seepage analysis for design shall identify areas having high internal uplift or exit gradients.

(b) The design may include an embankment internal drainage system, a zoned embankment, a foundation cut-off, an upstream blanket, a sufficiently wide homogeneous section, or other methods to protect against instability from excessive seepage forces or high hydraulic gradients.

(c) For class C dams, a flow net analysis shall be made to determine the location of the phreatic surface, flow lines, and equipotential lines within the embankment and its foundation. This analysis may be based on graphical construction, electrical or liquid analogs, soil prototype methods, or other accepted methods. The flow net and stability analysis shall use the maximum operating pool level with not less than five feet of clear water at the surface. Possible fluctuations in tail water elevation shall be included in the analysis. The flow net and seepage analysis shall be documented in the final design report, as required by .0201(d)(4) of this Section.

(d) Piezometers for confirming the location of the phreatic surface assumed for seepage and slope stability analyses should be considered by the design engineer for class A and class B dams and shall be required for class C dams. Where piezometers are required, their design, depths, and locations shall be provided as required in .0201(d) and .0212(b) of this Section.

*History Note: Authority G.S. 143-215.26; 143-215.27; 143-215.31;
Eff. June 15, 1980;
Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. December 23, 2017.*