

## **15A NCAC 02K .0206 CONDUITS**

- (a) A conduit shall be provided to drain each reservoir. The conduit design shall include the computation of the minimum time required to drain the reservoir.
- (b) All pipe conduits shall convey water at the design velocity without damage to the interior surface.
- (c) Protection shall be provided to prohibit unsafe seepage along conduits through the dam, abutments, and foundation. The specific design for seepage protection along conduits shall be shown in the drawings and specifications.
- (d) Adequate allowances shall be incorporated in the design to compensate for differential settlement and possible elongation of the pipe conduit.
- (e) Trash racks shall be installed at the intake of conduits to prevent clogging the conduit.
- (f) Pipe Conduit Spillway Materials
  - (1) Pipe conduits shall be designed to support the total external loads in addition to the total internal hydraulic pressure without leakage.
  - (2) Reinforced or Prestressed Concrete Pipe Conduits
    - (A) All conduits are to be designed and constructed to remain watertight under maximum anticipated hydraulic pressure and maximum probable joint opening, including the effects of joint rotation and extensibility.
    - (B) Provisions for safe movement of the barrel are to be provided at each joint in the barrel and at the junction of the barrel and riser or inlet. Cradles are to be articulated if constructed on a yielding foundation.
    - (C) The engineer shall submit the final design details of the proposed pipe to be used for all class A dams where the height of the dam exceeds 35 feet and all class B and C dams.
  - (3) Corrugated Metal Pipe Conduits
    - (A) Corrugated metal pipe shall not be used in class A dams over 35 feet high or in class B and C dams, except for special cases when the design engineer can adequately demonstrate satisfactory performance.
    - (B) Corrugated metal pipe may be used in class A dams which are less than 35 feet high.
    - (C) Corrugated metal conduits shall have watertight connecting bands designed and installed to remain watertight under maximum anticipated hydrostatic head and joint rotation.
    - (D) Flange type couplings shall not be used for corrugated metal pipe or corrugated steel pipe where the diameter exceeds 12 inches unless the applicant produces computations to verify that the flanges and the pipe conduit are of such design to safely support the total external loads in addition to the total internal hydraulic pressure without leakage.
- (g) Dissipating Devices. All gates, valves, conduits and concrete channel outlets shall be provided with a dissipator designed and constructed to control erosion and prevent damage to the embankment or the downstream outlet or channel.
- (h) In the case of repair to an existing dam, the engineer may determine that the conduit should not be repaired or replaced and shall submit reasoning to support this determination in the application for the Certificate of Approval to repair. The Director shall approve, disapprove, or approve in part this determination.

*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.*