



## **Armoring Spillways and Embankments with Articulating Concrete Blocks**

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Over the past 36 years numerous embankment dams and earth-cut spillways in the United States have been armored using Articulating Concrete Blocks (ACBs) to provide erosion protection. Several dams and spillways armored with ACBs have been overtopped and performed satisfactorily with overtopping flow depths and velocities exceeding 4 feet and 30 feet per second, respectively. Much has been learned about what works and what does not work. Of the ACB installations that have failed or experienced damage, the underlying issues have been attributed to one of several possible failure modes that were not understood or adequately addressed during the design. This presentation will share information on several recent ACB embankment armoring projects completed in the Northeastern region of the United States. ACB spillway armoring failures will be discussed that have been attributed to one of several potential failure modes that may not have been understood or adequately addressed during design. State of the practice design features to address these potential failure modes will be presented. This information is important for engineers to consider during their designs, and for regulators reviewing ACB armoring designs, so that future failures and unnecessary damage resulting in costly maintenance can be prevented.