Designation: D6884 – 03

Standard Practice for Installation of Articulating Concrete Block (ACB) Revetment Systems[1]

This standard is issued under the fixed designation D6884; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 The purpose of this standard is to provide recommended guidelines for the proper installation of articulating concrete block (ACB) revetment systems.

1.2 This practice offers a set of instructions for performing one or more specific operations. This document cannot replace education or experience and should be used in conjunction with professional judgment. Not all aspects of this practice may be applicable in all circumstances. This ASTM standard is not intended to represent or replace standard of care by which adequacy of a given professional service must be judged, nor should this document be applied without considerations of a project's many unique aspects. The word "standard" in the title of this document means only that the document has been approved through the ASTM consensus process.

1.3 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:* [2]

C33 Specification for Concrete Aggregates [3]

C698 Test Methods for Chemical, Mass Spectrometric, and Spectrochemical Analysis of Nuclear-Grade Mixed Oxides ($(U, Pu)O_2$)

3. Terminology

3.1 *Definitions:*

3.1.1 *articulating concrete block (ACB) revetment system, n*—a matrix of interconnected concrete block units for erosion protection. Units are connected by geometric interlock, cables, ropes, geotextiles, geogrids, or a combination thereof, and typically include a geotextile underlayment for subsoil retention.

4. Summary of Practice

4.1 The proper installation of articulated concrete block revetment systems is essential to the adequate functioning and performance of the system during the design hydrologic event. This standard provides guidelines for maximizing the correspondence between the design intent and the actual field-finished conditions of the project.

4.2 This standard addresses the preparation of the subgrade, geotextile placement, block system placement, backfilling and finishing, and inspection.

5. Significance and Use

5.1 This standard is intended for use by designers and contractors to assist in understanding the importance of proper installation of articulating concrete block revetment systems in order to achieve suitable hydraulic performance and maintain stability against the erosive force of flowing water.

5.2 An articulating concrete block system is comprised of a matrix of individual concrete blocks placed together to form an erosion-resistant overlay with specific hydraulic performance characteristics. The system includes a geotextile underlay compatible with the subsoil that allows hydraulic infiltration and exfiltration to occur while providing particle retention. The blocks within the matrix shall be dense and durable and the matrix shall be flexible and porous.

5.3 Articulating concrete block systems are used to provide erosion protection to underlying soil materials from the forces of flowing water. The term "articulating," as used in this standard, implies the ability of individual blocks of the system to conform to changes in the subgrade while remaining interconnected by virtue of block interlock and/or additional system components such as cables, ropes, geotextiles, or geogrids.

5.4 The definition of articulating concrete block systems does not distinguish between interlocking and non-interlocking block geometries, between cable-tied and non-cable-tied systems, between vegetated and non-vegetated systems or between methods of manufacturing or placement. Furthermore,

[1] This practice is under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.25 on Erosion and Sediment Control Technology.

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[2] *Annual Book of ASTM Standards*, Vol 04.02.

[3] *Annual Book of ASTM Standards*, Vol 12.01.