



Designation: D8173 – 23

Standard Guide for Site Preparation, Layout, Installation, and Hydration of Geosynthetic Cementitious Composite Mats¹

This standard is issued under the fixed designation D8173; 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 This guide covers directions for the installation of geosynthetic cementitious composite mat (GCCM) materials under field conditions typically present in erosion control, hydraulic structure armoring and protection, and protection applications. This guide also covers directions for the installation of a special category of GCCMs known as geosynthetic cementitious composite barrier (GCCB) materials, under field conditions typically present in geotechnical or civil engineering applications, with the purpose of reducing or preventing the flow of fluid through the construction.

1.2 The values in SI units are to be regarded as the standard. Values in inch-pound units are in parentheses for information.

1.3 This guide contains general guidelines. It is not intended to replace project-specific installation requirements. In the event of a conflict between the two, the requirements of the project specifications will supersede the requirements of this guide.

1.4 This is not an all-inclusive guide, and some projects will be beyond the scope of this guide.

1.5 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D4437/D4437M Practice for Nondestructive Testing (NDT) for Determining the Integrity of Seams Used in Joining Flexible Polymeric Sheet Geomembranes

D4439 Terminology for Geosynthetics

D5641/D5641M Practice for Geomembrane Seam Evaluation by Vacuum Chamber

D5820 Practice for Pressurized Air Channel Evaluation of Dual-Seamed Geomembranes

D7177/D7177M Specification for Air Channel Evaluation of Polyvinyl Chloride (PVC) Dual Track Seamed Geomembranes

D8364/D8364M Specification for Geosynthetic Cementitious Composite Mat (GCCM) Materials

2.2 *American Concrete Institute Standard:*³

ACI 306.1 Standard Specification for Cold Weather Concreting

2.3 Further information is available on the various GCCMs from their manufacturers. Individual GCCM manufacturer's recommendations may be more detailed with regards to specific applications or details than the information found in this standard, and should be consulted prior to undertaking any installation.

3. Terminology

3.1 *Definitions:*

3.1.1 *geosynthetic cementitious composite barrier (GCCB), n*—a composite material consisting of a geosynthetic barrier bonded to an integral GCCM protective cover layer. The geosynthetic barrier component of adjacent material must be seamed to reduce or prevent the flow of fluid through the construction.

¹ This guide is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.05 on Geosynthetic Erosion Control.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American Concrete Institute (ACI), 38800 Country Club Dr., Farmington Hills, MI 48331-3439, <http://www.concrete.org>.