



Standard Guide for Mechanical Attachment of Geomembrane to Penetrations or Structures¹

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^{ε1} NOTE—Designation was changed to dual, units information was corrected and 2.1 was inserted editorially in June 2015.

1. Scope

1.1 This guide covers procedures that can be employed to mechanically attach fabricated geomembranes to structures, pipes, etc.

1.2 This guide does not address all problems or situations a geomembrane installer or design engineer may face in the attachment of geomembranes to structures, pipes, etc. The sole purpose of this standard guide is to point out typical problems with geomembrane attachments and clearly state objectives of each component of the geomembrane attachment(s).

1.3 This guide has been generated for geomembrane application(s); however, a geomembrane installer or design engineer, or both, may find portions of this guide applicable to other geosynthetics.

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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

2. Referenced Documents

2.1 ASTM Standards:²

C717 Terminology of Building Seals and Sealants

C822 Terminology Relating to Concrete Pipe and Related Products

D4439 Terminology for Geosynthetics

D4848 Terminology Related to Force, Deformation and Related Properties of Textiles

F118 Definitions of Terms Relating to Gaskets

2.2 *EPA Document:*³

Quality Assurance and Quality Control for Waste Containment Facilities, Technical Guidance Document, United States Environmental Protection Agency, EPA/600/R-93/182, September 1993

3. Terminology

3.1 Definitions:

3.1.1 *banding strap, n*—a flexible narrow strip of metal, plastic or other material, which compresses the geomembrane around a penetration by acting as a clamp around the penetration.

3.1.2 *batten, n*—a rigid narrow strip of metal, wood, plastic or other material which distributes the forces to compress the geomembrane against a penetration or structure.

3.1.3 *boot, n*—a factory or field fabricated geomembrane wrap used to seal around a pipe penetration prior to attachment (see Fig. 1).

3.1.4 *clamp, n*—a flexible narrow strip of metal, plastic or other material, which compresses the geomembrane against a penetration by tightening the bolt(s) or screw(s) of the clamp (see Fig. 2).

3.1.5 *concrete, n*—a homogeneous mixture of portland cement, aggregates, and water which may contain admixtures. **(C822)**

3.1.6 *gaskets, n*—a material, which may be clamped between contact surfaces that acts as a static seal. Gaskets are cut, formed, or molded into the desired configuration. They may consist of any of the following construction: one or more plies of a sheet material; composites of dissimilar materials; and materials applied as a bead or other form to one or both mating faces prior to assembly. **(F118)**

¹ This guide is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.10 on Geomembranes.

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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 U.S. Government Publishing Office, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.gpo.gov>.