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Standard Practice for Non-destructive Testing (NDT) for Determining the Integrity of Seams Used in Joining Flexible Polymeric Sheet Geomembranes[1]

This standard is issued under the fixed designation ~~D4437;~~D4437/D4437M; 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 practice is intended for use as a summary of nondestructive quality control test methods for determining the integrity of seams used in the joining of flexible sheet materials in a geotechnical application. This practice outlines the test procedures available for determining the quality of bonded seams. Any one or combination of the test methods outlined in this practice can be incorporated into a project specification for quality control. These test methods are applicable to manufactured flexible polymeric membrane linings that are scrim reinforced or nonreinforced. This practice is not applicable to destructive testing. For destructive test methods look at other ASTM Standards and Practices.

1.2 The types of seams covered by this practice include the following: Thermally Bonded Seams, Hot Air, Hot Wedge (or Knife), Extrusion, Solvent Bonded Seams, Bodied Solvent Bonded Seams, Adhesive Bonded or Cemented Seams, Taped Seams, Waterproofed Sewn Seams.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values ~~given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered~~ 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.

1.4 *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]

~~D5641~~D5641/D5641M Practice for Geomembrane Seam Evaluation by Vacuum Chamber

D5820 Practice for Pressurized Air Channel Evaluation of Dual Seamed Geomembranes

D6365 Practice for the Nondestructive Testing of Geomembrane Seams using the Spark Test

D7006 Practice for Ultrasonic Testing of Geomembranes

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

3. Significance and Use

3.1 The use of geomembranes as barrier materials to restrict liquid migration from one location to another in soil and rock, and the large number of seam methods and types used in joining these geomembrane sheets, has created a need for standard tests by which the various seams can be compared and the quality of the seam systems can be non-destructively evaluated. This practice is intended to meet such a need.

3.2 The geomembrane sheet material shall be formulated from the appropriate polymers and compounding ingredients to form a plastic or elastomer sheet material that meets all specified requirements for the end use of the product. The sheet material

[1] This practice 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.