Designation: D 6213 – 97 (Reapproved 2003)

Standard Practice for Tests to Evaluate the Chemical Resistance of Geogrids to Liquids[1]

This standard is issued under the fixed designation D 6213; 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 covers the procedures for testing of geogrids for chemical resistance to liquids.

1.2 This practice describes methods for measuring changes in physical and mechanical properties caused by immersion in test solutions that may be representative of anticipated end-use conditions.

1.3 This practice describes procedures for required and recommended testing of geogrids.

1.4 Evaluation or interpretation of test data is beyond the scope of this practice.

1.5 This practice is intended to be used in conjunction with D 5322, or D 5496, or both. The scope of this practice is limited to testing and reporting procedures for unexposed and exposed geogrid coupons.

1.6 *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.* Specific precautionary statements are given in Section 7.

2. Referenced Documents

2.1 *ASTM Standards:*

D 76 Specifications for Tensile Testing Machines for Textiles[2]

D 883 Terminology Relating to Plastics[3]

D 1238 Test Method for Flow Rates of Thermoplastics by Extrusion Plastomer[3]

D 1600 Terminology for Abbreviated Terms Relating to Plastics[3]

D 4439 Terminology for Geosynthetics[4]

D 4595 Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method[4]

D 4603 Test Method for Determining the Inherent Viscosity of Poly(ethylene terephthalate) (PET)[5]

D 5322 Practice for Immersion Procedures for Evaluating the Chemical Resistance of Geosynthetics to liquids[4]

D 5496 Practice for In-Situ Immersion Procedures for Evaluating the Chemical Resistance of Geosynthetics to Liquids[4]

3. Terminology

3.1 *Definitions:*

3.1.1 *chemical resistance*, *n*—for geosynthetics, the extent to which a material or product retains its original physical and chemical characteristics as a function of immersion in, or contact with, a foreign substance. **(D 5747, D-35)**

3.1.2 *coating*, *n*—a liquid, liquefiable or mastic composition that is converted to a solid protected, decorative, or functional adherent film after application as a thin layer. **(D 16, D-1)**

3.1.3 *coupon*, *n*—a portion of a material or laboratory sample, from which multiple specimens can be taken for testing. **(D 5747, D-35)**

3.1.4 *composite*, *n*—a material made up of distinct parts which contribute, either proportionately, or synergistically, to the properties of the combination. **(E 375, D-20)**

3.1.5 *geogrid*, *n*—a reinforcing geosynthetic comprised of integrally connected elements with in-plane apertures between elements. **(D 4439, D-35)**

3.1.6 *geosynthetic*, *n*—a planar product manufactured from polymeric material used with soil, rock, earth, or other geotechnical engineering related material as an integral part of a man made project, structure, or system. **(D 4439, D-35)**

3.1.7 *inherent viscosity*—the quotient of the natural logarithm of relative viscosity by the concentration, that is in η_{rel}/c. **(D 1695, D-1)**

3.1.8 *integral*, *adj*—in geosynthetics, forming a necessary part of the whole; a constituent. **(D 4439, D-35)**

3.1.9 *relative viscosity*—the ratio of the viscosity of a solution to that of the pure solvent. **(D 1695, D-1)**

3.1.10 *melt index*, *n*—the flow rate of PE material when measured in accordance with Test Method D 1238.

3.1.11 *polyester*, *n*—a polymer in which the repeated structural unit in the chain is of the ester type. **(D 883, D-20)**

[1] This practice is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.02 on Endurance Properties.

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[2] *Annual Book of ASTM Standards*, Vol 07.01.

[3] *Annual Book of ASTM Standards*, Vol 08.01.

[4] *Annual Book of ASTM Standards*, Vol 04.13.

[5] *Annual Book of ASTM Standards*, Vol 08.03.

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