



Designation: D 4873 – 042

Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples¹

This standard is issued under the fixed designation D 4873; 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 provides guidelines for the identification and packaging of rolled geosynthetics by the manufacturer and for the handling and storage of geosynthetics by the end user. This guide is not to be considered as all encompassing since each project involving geosynthetics presents its own challenges and special conditions. Geosynthetic samples are often taken at manufacturer, supplier, or at the job site primarily for the purpose of conformance testing and verification. These samples should be properly labeled for identification purposes.

1.2 This guide is intended to aid manufacturers, suppliers, purchasers, and users of geosynthetics for identification, handling, and storage.

1.3 This guide is not applicable for factory fabricated panels due to a different set of identifications for the panel by the fabricator.

1.4 This guide is also applicable to geosynthetic samples.

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:*

D 123 Terminology Relating to Textiles²

¹ This guide is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.02 on Endurance Properties. Current edition approved ~~Feb. Jan.~~ 10, 2004². Published ~~March 2001~~ April 2002. Originally published as D 4873 – 88. Last previous edition D 4873 – 9701.

D 4354 Practice for Sampling of Geosynthetics for Testing³

D 4439 Terminology for Geosynthetics³

3. Terminology

3.1 Definitions:

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

3.1.2 *geotextile, n*—a permeable geosynthetic comprised solely of textiles.

3.1.3 For definitions of other geosynthetic terms, refer to Terminology D 4439.

3.1.4 For definitions of textile terms, refer to Terminology D 123.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *core, n*—a mandrel of cardboard, foam or other material on which geosynthetics are rolled during manufacturing to facilitate handling.

3.2.2 *supplier, n*—the person or organization from whom a geosynthetic is purchased or otherwise obtained.

3.2.2.1 *Discussion*—The supplier is frequently the manufacturer of the geosynthetic, but need not be. A supplier who is not the manufacturer is expected to ensure that the responsibilities of the manufacturer are fully met.

3.2.3 *sample, n*—(1) a portion of material which is taken for testing or for record purposes. (see also sample, lot; sample, laboratory; and specimen.) (2) a group of specimens used, or of observations made, which provide information that can be used for making statistical inferences about the population(s) from which the specimens are drawn.

4. Significance and Use

4.1 For a geosynthetic to be properly used it must be adequately identified and packaged. It must be handled and stored in such a way that its physical property values are not degraded. Failure to follow good practice may result in the unnecessary failure of the geosynthetic in a properly designed application.

4.2 This guide is not intended to replace project-specific storage, handling, identification, packaging, or installation requirements or quality assurance programs.

5. Procedure

5.1 Packaging and Identification:

5.1.1 When cores are required, use those that have a crushing strength sufficient to avoid collapse or other damage in normal use.

5.1.2 For geotextiles and geotextile composites, cover each roll with a wrapping material for protection from damage due to shipment, water, sunlight, or contaminants while being stored or handled in accordance with this guide.

5.1.3 Identify each roll with a durable, gummed label, or equivalent, either clearly readable on the roll packaging, on the outer wrap when no packaging is required, or on the inside of the core. Roll identification should include, at minimum, the name of the manufacturer or supplier, product or style number, and the unique roll number. Identification should also include the width and length of the geosynthetic roll. Any other unique characteristics should be clearly identified. For rolls with no identification on the inside of the core, once the roll is unwrapped or samples taken, labels on the outer wrap or the roll packaging should be removed and placed inside the roll for traceability. All designations should be readable for clear identification.

NOTE 1—Rolls bundled or strapped as a single unit could be regarded as a single roll for identification purposes provided all the rolls remain as a single unit received by the end user.

5.2 Receiving and Storing at the Job Site:

5.2.1 While unloading or transferring the geosynthetic from one location to another, prevent damage to the wrapping and to the geosynthetic itself. If practicable, use fork lift trucks fitted with poles that can be inserted into the cores of rolls. Be sure that the poles are at least two thirds the length of the rolls to avoid breaking the cores and possibly damaging the geosynthetic. Slings may be used to carry relatively rigid rolls of geosynthetics, such as geonets or geomembranes, provided that the slings do not cause damage to the rolls. Do not drag the rolls as damage may result.

5.2.2 Geosynthetics, when possible, should be stored while elevated off of the ground and covered to ensure adequate protection from the following:

5.2.2.1 Precipitation (because geotextile roll goods saturation leads to handling difficulties),

5.2.2.2 Ultraviolet radiation,

5.2.2.3 Undesirable chemicals for any extended period of time,

5.2.2.4 Flames, including welding sparks,

5.2.2.5 Temperatures in excess of 71°C (160°F) and below 0°C (32°F) (see Note 2), and

² Annual Book of ASTM Standards, Vols 07.01.

³ Annual Book of ASTM Standards, Vol-04.09; 04.13.

5.2.2.6 Any other environmental condition that may damage the physical property values of the geosynthetic.

NOTE 2—Geotextiles may contain enough moisture to cause them to stiffen when frozen which interferes with placement.

5.3 *On-Site Handling:*

5.3.1 While transferring geosynthetics from one location to another, prevent damage to the wrapping and to the geosynthetic itself. Follow the cautions specified in 5.2.1.

5.3.2 Before unrolling a roll of geosynthetic at the job site, verify its identification. While unrolling the geosynthetic, inspect it for damage or defects.

5.3.3 Follow all applicable site or project specifications and manufacturer's recommendations for handling and installation of geosynthetics.

5.3.4 Correct any damage that occurs during storage or installation as directed by the project specifications and the engineer in charge of installation.

5.4 *Sample Identification:*

5.4.1 If samples are to be taken at job site follow removal of wrap and identification of roll according to 5.1.3. Outer layer of geosynthetic should be removed before sample is taken following sampling procedures as prescribed in Practice D 4354. Cut sample according to specified test method(s).

5.4.2 Identify each sample with a durable, gummed label, or equivalent including at a minimum, the sample designation, the name of the manufacturer or supplier, product or style number, the lot number and/or roll number, location sampled or project name or project identification number, sampled by, and date sampled. If third party is responsible for sampling, include with the name, the address and telephone number.

5.4.3 Sample should be suitably packaged for shipping to prevent distortion. Sample should be packaged in suitable wrapping material for protection from damage due to shipping, water, sunlight, or contaminants.

6. **Keywords**

6.1 geosynthetics; identification; labeling; quality assurance; storage

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).