



Standard Test Method for Resin Binder Distribution and Binder Penetration Analysis of Polyester Nonwoven Fabrics¹

This standard is issued under the fixed designation D 5908; 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 test method covers the analysis of polyester highloft nonwoven fabrics for resin binder distribution and binder penetration.

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

1.3 *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

D 123 Terminology Relating to Textiles

2.2 *ASTM Adjuncts:*

ADJD5908 Photographic Standards³

3. Terminology

3.1 *Definitions:*

3.1.1 *batting, n*—a textile filling material consisting of a continuous web of fibers formed by carding, garnetting, air laying or other means.

3.1.2 *highloft nonwoven fabric, n*—a low density fiber network structure characterized by a high ratio of thickness to mass per unit area.

3.1.3 *needle-punched batting, n*—a textile filling material that is stabilized by mechanically entangling the fibers.

3.1.4 *resin binder, n*—emulsion polymer used for bonding.

3.1.5 *resin bonded batting, n*—a textile filling material that is stabilized by spraying it with an acrylic, polyvinyl acetate, or other suitable resin emulsion after which the batting is dried and cured.

3.1.6 *thermal bonded batting, n*—a textile filling material that contains low-melting point fibers or polymer which, when heated, fuse the batting materials together.

3.1.6.1 *Discussion*—Thermal bonded batting may also contain a resin binder.

3.1.7 For definitions of other textile terms refer to Terminology D 123.

4. Summary of Test Method

4.1 A specimen of batting, either manufactured or from an end use product, is dyed with a dye that subjectively stains the resin binder. The stained specimen is examined for binder distribution on the batting surface and binder penetration through the batting by comparison to photographic rating standards.

5. Significance and Use

5.1 This test method is used in the trade for acceptance testing of commercial shipments.

5.1.1 In case of a dispute arising from differences in reported test results when using this test method, the purchaser and the supplier should conduct comparative tests to determine if there is a statistical bias between their laboratories. Competent statistical assistance is recommended for the investigation of bias. As a minimum, the two parties should take a group of test samples that are as homogeneous as possible and are from a material lot of the type in question. The test samples should then be randomly assigned in equal numbers to each laboratory for testing. The average results from the two laboratories should be compared using a statistical test for unpaired data and an acceptable probability level chosen by the two parties before the testing is begun. If a bias is found, either its cause must be found and corrected or the purchaser and the supplier must agree to interpret future test results with consideration of the known bias.

5.2 This test method is used to assess the distribution of resin binder application. The distribution of resin binder relates to batting performance.

6. Apparatus and Materials

6.1 *Dyebath Container*, plastic or metal, of sufficient volume for dyebath.

6.2 *Dye*, C.I. Basic Red 14.

¹ This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.64 on Non-Woven Fabrics.

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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 Two sets of five color photographic standards illustrating changes in binder distribution and penetration are available from ASTM Headquarters. Request ADJD5908.