This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: D7016/D7016M – 20

Standard Test Method to Evaluate Edge Binding Components Used in Mattresses After Exposure to An Open Flame[1]

This standard is issued under the fixed designation D7016/D7016M; 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.

INTRODUCTION

Evaluation of raw material components is a vital and ongoing part of any manufacturing operation, especially when each item can contribute to the technical performance of the final product. Components used in a mattress construction govern the ultimate product performance, its comfort and durability, and also affect its flammability behavior.

The textile components used on the exterior of the mattress—mattress tape and sewing thread—are critical for holding the structure together. These components contribute to the aesthetics of the structure, and they are also susceptible to ignition when exposed to an open flame hazard. Data which indicate that these two components are able to meet minimum performance criteria when exposed to an open flame provides the mattress manufacturers with valuable information.

The value of these data increases when the behavior of components in a small scale test correlate to the behavior of these components in a full scale mattress burn test. The performance criteria require that: *(1)* the components do not support the combustion of the afterflame and, *(2)* that these components demonstrate post flame exposure characteristics which contribute to the retention of structural integrity and prevent seam rupture. This test method can be used as a quality control technique in a supplier quality assurance program.

1. Scope

1.1 This test method measures the flammability characteristics of mattress edge bindings and sewing threads during and after exposure to an open flame ignition source.

1.1.1 This test method is used to evaluate these components either independently or in combination for use in mattresses designed with a fire barrier fabric.

1.1.1.1 The test method is used to evaluate mattress edge binding and sewing thread when the design requires the use of these components.

1.1.2 This test method can be used as a screening test method to determine how sewing thread and mattress edge binding component combinations will perform.

1.2 *This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire hazard or fire risk assessment of the materials, products, or assemblies under actual fire conditions.*

1.3 Fire testing of products and materials is inherently hazardous, and adequate safeguards for personnel and property shall be employed in conducting these tests.

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 are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

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

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

[1] This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.52 on Flammability.

Current edition approved Aug. 1, 2020. Published September 2020. Originally approved in 2004. Last previous edition approved in 2018 as D7016–18. DOI: 10.1520/D7016_D7016M-20.

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. United States