Designation: D 3453 – 96

Standard Specification for Flexible Cellular Materials—Urethane for Furniture and Automotive Cushioning, Bedding, and Similar Applications[1]

This standard is issued under the fixed designation D 3453; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers flexible cellular urethane materials intended for such uses as inserts for furniture cushions, mattresses, and similar applications.

1.2 This specification provides material and dimensional requirements and methods of tests for specific properties of load bearing, compression set, humid age resistance, and dynamic fatigue resistance.

1.3 This specification includes references to government regulations for burning characteristics of flexible cellular material used in specified applications.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

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.*

NOTE 1—There is no equivalent ISO standard.

2. Referenced Documents

2.1 *ASTM Standards:*

D 3574 Test Methods for Flexible Cellular Materials—Slab, Bonded, and Molded Urethane Foams[2]

D 3675 Test Method for Surface Flammability of Flexible Cellular Materials Using a Radiant Heat Energy Source[2]

2.2 *Other Documents:*

CFR Title 16, Part 1632, (Previously DoC FF4-72), Standard for the Flammability of Mattresses[3]

DOT MVSS 302 DoT Motor Vehicle Safety Standard[3]

DOT Federal Aviation Regulation (FAR), Part 25.853, Paragraph (b), and Appendix F[3]

Simplified Practice Recommendations R2-62 Bedding Products and Components (Mattresses, Springs, Bedsteads, and Cots)[4]

3. Classification

3.1 This specification covers six grades of flexible cellular material that may be selected for use according to load bearing and general physical properties, Table 1; four grades based on dynamic fatigue properties, Table 2; three grades based on static fatigue properties, Table 3.

4. Basis of Purchase

4.1 Any product represented as complying with this specification shall meet all the requirements listed herein for its particular classification.

5. Burning Characteristics

5.1 Table 4 lists applicable government regulations on burning characteristics of material used in specified applications.

6. Dimensions

6.1 *For Use as Mattress Inserts*:

6.1.1 *Sizes*—The standard thickness and tolerance are specified in Table 5. These sizes have been adopted for mattress inserts to coordinate the insert with mattress ticking and other bed constructions. The other dimensions are specified in Table 7A of Simplified Practice Recommendations R2-62.

6.1.2 *For Use as Furniture Cushion Inserts*—The allowable tolerances on dimensions of furniture cushion inserts shall be as shown in Table 6.

7. Test Methods

7.1 The physical tests shall be in accordance with Test Methods D 3574.

8. Physical Requirements

8.1 The material shall conform to the requirements for

[1] This specification is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.22 on Cellular Plastics and Elastomers.

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Modifications to the current edition include the following: addition of a safety caveat and ISO equivalency statement to the scope, correction of title changes in referenced documents, additions to keywords, and better test method references in the tables.

[2] *Annual Book of ASTM Standards*, Vol 09.02.

[3] Available from the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

[4] Available from the Clearing House for Federal Scientific and Technical Information, 5285 Port Royal Rd., Springfield, VA 22151.