



Designation: C 726 – 00

Standard Specification for Mineral Fiber Roof Insulation Board¹

This standard is issued under the fixed designation C 726; 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 the composition and physical properties of mineral fiber insulation board used principally above structural roof decks as a base for built-up roofing in building construction.

1.2 The use of thermal insulation materials covered by this specification may be regulated by building codes or other agencies that address fire performance, or both. The fire performance of the material should be addressed through standard fire test methods established by the appropriate governing documents.

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

1.4 *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 the regulatory limitations prior to use.*

2. Referenced Documents

2.1 The following standards, of the issue in effect on the date of material purchase, form a part of this specification to the extent specified herein:

2.2 ASTM Standards:

C 165 Test Method for Measuring Compressive Properties of Thermal Insulations²

C 168 Terminology Relating to Thermal Insulating Materials²

C 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded Hot Plate Apparatus²

C 203 Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation²

C 209 Test Methods for Cellulosic Fiber Insulating Board²

C 236 Test Method for Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box²

C 390 Criteria for Sampling and Acceptance of Preformed

Thermal Insulation Lots²

C 518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus²

C 976 Test Method for Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box²

D 312 Specification for Asphalt Used in Roofing³

D 450 Specification for Coal-Tar Pitch Used in Roofing, Dampproofing, and Waterproofing³

D 2126 Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging⁴

E 84 Test Method for Surface Burning Characteristics of Building Materials⁵

3. Terminology

3.1 *Definitions*—Terms used in this specification are defined in Terminology C 168.

4. Ordering Information

4.1 Orders for material purchased under this specification shall include:

4.1.1 Designation of this specification,

4.1.2 Product name,

4.1.3 Board dimensions,

4.1.4 Quantity of material, and

4.1.5 Special packaging or marking, (13.1 and 13.2) if required.

5. Materials and Manufacture

5.1 Mineral fiber roof insulation board shall consist of mineral fibers with an organic resin or other suitable binder. It shall be faced during manufacture on one surface with a cover adequate for the application of Specification D 312 asphalt or Specification D 450 coal-tar pitch built-up roofing.

6. Physical Properties

6.1 The average thermal resistance, R , of specimens sampled in accordance with Criteria C390 shall be as specified by the manufacturer.

6.2 Nominal thickness required to obtain the specified

¹ This specification is under the jurisdiction of ASTM Committee C-16 on Thermal Insulation, and is the direct responsibility of Subcommittee C16.20 on Homogeneous Inorganic Thermal Insulations.

Current edition approved Jan. 10, 2000. Published April 2000. Originally published as C 726 – 72. Last previous edition C 726 – 93.

² *Annual Book of ASTM Standards*, Vol 04.06.

³ *Annual Book of ASTM Standards*, Vol 04.04.

⁴ *Annual Book of ASTM Standards*, Vol 08.01.

⁵ *Annual Book of ASTM Standards*, Vol 04.07.

resistance or conductance shall be as stated by the manufacturer.

6.3 Roof insulation boards shall have the limiting property values shown in Table 1.

7. Dimensions and Tolerances

7.1 The dimensions shall be as agreed upon between the purchaser and manufacturer. Tolerances shall be as follows:

	Tolerance, in. (mm)
Long dimension	$\pm 1/4$ (6)
Short dimension	$\pm 1/4$ (6)
Thickness	$\pm 1/8$ (3)

The long and short dimension tolerances in this section are for individual boards. The tolerance for long and short dimension averages for at least 20 boards shall be $\pm 1/8$ in. (3 mm).

7.2 Board squareness shall be within required tolerance if the two diagonal measurements of the board differ by no more than 1/4 in. (6 mm).

7.3 Board flatness shall be within required tolerance if, when board is placed concave side up, the average distance between a flat supporting surface and the bottom board surface at the corners does not exceed 5/16 in. (8 mm) over a temperature range from 20 to 140°F (-7 to 60°C). Maximum distance at an individual corner shall not exceed 9/16 in. (14 mm).

7.4 The thermal resistance of any single specimen shall not be more than 10 % below the value specified by the manufacturer.

7.5 Mass per unit area of any board, lb/ft² (kg/m²) shall be within 10 % of the value specified by the manufacturer. Average mass per unit area of at least 20 boards shall be within 5 % of the value specified by the manufacturer.

8. Workmanship, Finish, and Appearance

8.1 Insulation boards shall not have visible defects that will adversely affect service qualities.

9. Sampling

9.1 Sampling for qualification tests, if required, shall be in accordance with Criteria C390. Qualification tests will be conducted on the physical requirements in 6.1 and Table 1.

9.2 Sampling for inspection tests, if required, shall be in accordance with Criteria C390. Inspection requirements are dimensions (Section 7) plus any other properties as agreed upon between the purchaser and manufacturer.

10. Specimen Preparation

10.1 Specimens for all tests shall include any factory-

TABLE 1 Physical Properties

Property	Requirement
Compressive resistance at 25 % deformation, min, psi (kPa)	12 (83)
Tensile strength perpendicular to board surface, min, lbf/ft ² (kPa)	100 (4.8)
Breaking load, min, lbf (N)	20 (89)
Water absorption, max, volume %	10 ^A
Response to thermal and humid aging, linear dimensional change, max, %	length and width: 5 thickness: 7

^A There shall be no delamination during the water absorption test.

applied cover. Take care that the cover is not partially detached in the process of cutting specimens.

10.2 Unless otherwise specified, condition samples prior to cutting specimens for at least 12 h at 73 \pm 2°F (24 \pm 1°C), 50 \pm 5 % relative humidity before testing.

11. Test Methods

11.1 *Thermal Resistance*—Test Method C 177, C 518, C 236, or C 976 at a mean temperature of 75 \pm 2°F (24 \pm 1°C) and 40°F (22°C) minimum temperature gradient or at a mean temperature agreed upon between the purchaser and manufacturer.

11.2 *Compressive Resistance*—Test Method C 165, Procedure A. Crosshead speed shall be 0.1 \pm 0.01 in. (2.5 \pm 0.25 mm) for each 1 in. (25.4 mm) of specimen thickness.

11.3 *Tensile Strength Perpendicular to the Board Surface*—Test Methods C 209, see Test Conditions and Tensile Strength Perpendicular to Surface, except that the specimens shall be 6 in. by 6 in. (150 mm by 150 mm).

11.4 *Breaking Load*— Test Methods C 203, Method I, Procedure D. Specimen width shall be 6 in. (152 mm) and support span shall be 10 in. (254 mm).

11.5 *Water Absorption*— Test Methods C 209 (see Water Absorption section). When material is thicker than 1.0 in., split the material to give a specimen thickness of 1.00 \pm 0.03 in. The test specimen shall include the faced side of the material if applicable. Immerse the specimen with the faced surface down.

11.6 *Response to Thermal and Humid Aging*—Test Method D 2126. Expose 12 by 12 in. (305 by 305 mm) by actual thickness specimens to 158 \pm 4°F (70 \pm 2°C), 97 \pm 3 % relative humidity for 168 \pm 2 h.

11.7 *Surface Burning Characteristics* (if required)—Test Method E 84 with the bottom surface exposed to the test flame.

11.8 *Dimensions*—Test Methods C 209, see Test Conditions, Thickness, and Size of Finished Board.

12. Rejection

12.1 Failure to conform to the requirements in this specification shall constitute cause for rejection. In case of rejection, the manufacturer shall have the right to reinspect the rejected shipment and resubmit the lot after removal of that portion not conforming to requirements.

13. Packaging and Marking

13.1 *Packaging*—Unless otherwise specified, the insulation shall be supplied in the manufacturer’s standard commercial packages.

13.2 *Marking*—Unless otherwise specified, each package shall be marked with the material name, manufacturer’s name or trademark, board dimensions, number of pieces, coverage area of the material in the package, and thermal resistance or conductance.

14. Keywords

14.1 board; insulation; mineral fiber; roof

 **C 726**

The American Society for Testing and Materials 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 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, 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).