

CHAPTER 7640
DEPARTMENT OF COMMERCE
THERMAL INSULATION STANDARDS

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7640.0100 AUTHORITY; PURPOSE; INCORPORATIONS BY REFERENCE.

Subpart 1. **Authority.** The commissioner of the Department of Commerce is authorized by Minnesota Statutes, sections 325F.20, subdivision 1, and 325F.21, subdivisions 1 and 2, to establish standards for the product quality, safety, installation, and labeling of thermal insulation products, and to establish test programs and procedures to ensure that standards established by this chapter are met.

Subp. 2. **Purpose.** This chapter applies to the manufacture, distribution, sale, and installation of thermal insulation material in residential buildings within Minnesota. This chapter sets minimum standards for the product quality and safety of thermal insulation materials specified in this chapter, minimum procedures for the testing of insulation materials under these standards, and minimum standards for installation of those products.

Subp. 3. **Incorporations by reference.** This chapter incorporates numerous standards by reference that are published by ASTM, Conshohocken, Pennsylvania. This chapter also incorporates an ANSI/ISO/ASQ standard by reference, published by the American Society for Quality, Milwaukee, Wisconsin. This chapter also incorporates an ICC-Evaluation Services standard by reference, published by the ICC-Evaluation Service, Whittier, California. This chapter also incorporates an ASHRAE standard by reference, published by ASHRAE, Atlanta, Georgia. The standards and tests incorporated by reference are all an integral part of current insulation industry testing procedures. All manufacturers and testing laboratories presently possess or have access to each referenced incorporation.

All of the incorporated standards are subject to frequent change. Copies of all standards incorporated by reference are available in the Office of the Commissioner of Commerce.

Statutory Authority: *MS s 45.023; 325F.20; 325F.21*

History: *10 SR 1208; L 1987 c 312 art 1 s 9; 13 SR 532; 32 SR 2213; 39 SR 1167*

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7640.0110 APPLICABILITY AND CONDUCT.**Subpart 1. Residential insulation products regulated.**

A. This chapter applies to thermal insulation products for use in residential buildings within Minnesota. Residential buildings covered are those that are not more than three stories in height and contain no conditioned common space that is shared between dwellings, and each dwelling unit contains a separate means of egress.

Exception: insulation installed in manufactured buildings constructed in accordance with Code of Federal Regulations, title 24, part 3280.

B. Insulation products regulated by this chapter include:

(1) insulation for walls, ceilings, floors, and foundation walls; pipe insulation; insulation beneath slabs; duct insulation; and retrofit water heater blanket insulation; and

(2) any material or assembly of materials designed to provide resistance to heat flow in residential building structures, including but not limited to mineral fibrous, mineral cellular, organic fibrous, organic and plastic cellular and reflective materials, whether in loose fill, flexible, rigid, or semirigid form, and any material advertised for use in residential buildings as having energy-saving value by virtue of its thermal resistance (R value) or emissivity properties.

Exception: insulation used in manufactured buildings constructed in accordance with Code of Federal Regulations, title 24, part 3280, and appliances and doors.

Subp. 2. Conduct.

A. Thermal insulation materials sold, distributed, or installed in Minnesota residential buildings must be demonstrated by test to conform with the standards set forth in part 7640.0130.

B. Industry members installing thermal insulation shall follow manufacturer's written application instructions.

C. Insulation used for exterior below-grade application must be recommended by the manufacturer for exterior below-grade application.

D. Industry members must comply with the requirements of the United States Federal Trade Commission in Code of Federal Regulations, title 16, part 460.

E. Any false, misleading, or unsubstantiated statements in a sales presentation, or on any label, product literature, or product intended for the purchaser, as identified in Minnesota Statutes, section 325F.22, 325F.67, or 325F.69, subdivision 1, are subject to the state's remedies provided in Minnesota Statutes, sections 325F.24 and 325F.70.

F. If any representation is made that a product to be installed in Minnesota residential buildings will affect heat flow or energy savings, the representation must be based on the building envelope climate criteria set forth in the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 90.1-2010.

Subp. 3. **Retail sales.** Retailers of residential thermal insulation products for do-it-yourself installation must make available to each purchaser the manufacturer's written instructions describing the product's recommended use, proper application methods, and required or recommended installation safety measures. "Make available to each purchaser" means either providing the required materials, a conspicuous posting located where customers procure products stating that the manufacturer's written instructions describing the product's recommended use, proper application methods, and required or recommended installation safety measures are immediately available on request, or identifying a website where these instructions can be found.

Subp. 4. [Repealed, 32 SR 2213]

Subp. 5. [Repealed, 14 SR 2633]

Statutory Authority: *MS s 45.023; 325F.20; 325F.21*

History: *10 SR 1208; L 1987 c 312 art 1 s 9; 13 SR 532; 13 SR 2982; 16 SR 2026; 32 SR 2213; 39 SR 1167*

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7640.0120 DEFINITIONS.

Subpart 1. **Applicability.** For the purposes of this chapter, the following definitions of terms apply. Technical, scientific, and engineering terms undefined by this part have the meanings given in ASTM C168-13, Standard Definitions of Terms Relating to Thermal Insulation Materials.

Subp. 2. [Repealed, 32 SR 2213]

Subp. 3. **Approved laboratory.** "Approved laboratory" means any testing facility, including a facility owned or operated by a manufacturer, that has been accredited by one or more of the following agencies to perform the required test:

A. United States Department of Commerce, National Voluntary Laboratory Accreditation Program, Gaithersburg, Maryland;

B. Standards Council of Canada, Ottawa, Ontario, Canada;

C. International Accreditation Service, Inc.; or

D. other accreditation body that is a signatory to the Mutual Recognition Arrangement of the International Laboratory Accreditation Cooperation.

Exception: In the event that an approved laboratory program is temporarily delayed or is not capable of being accredited to perform a test or tests, a testing laboratory possessing the appropriate equipment, facilities, and qualified personnel to perform the required testing is an approved laboratory.

Subp. 4. [Repealed, 32 SR 2213]

Subp. 5. [Repealed, 32 SR 2213]

Subp. 6. [Repealed, 32 SR 2213]

Subp. 7. [Repealed, 32 SR 2213]

Subp. 8. [Repealed, 32 SR 2213]

Subp. 9. [Repealed, 32 SR 2213]

Subp. 10. [Repealed, 13 SR 2982]

Subp. 11. **ICC-Evaluation Services Report.** ICC-Evaluation Services Report means an evaluation service report prepared in accordance with an acceptance criteria approved by the ICC-Evaluation Service, Whittier, California.

Subp. 12. **Industry members.** "Industry members" means:

- A. manufacturers of insulation, wholesalers, and retailers of insulation;
- B. contractors and applicators who sell and install residential insulation;
- C. those engaged in the marketing of insulation who are, or who purport to act as, agents of manufacturers or suppliers of insulation; and
- D. installers of insulation the manufacture of which is completed at the jobsite who do not follow the manufacturer's installation instructions. These installers are considered manufacturers for the purpose of this chapter.

Subp. 13. [Repealed, 32 SR 2213]

Subp. 14. [Repealed, 32 SR 2213]

Subp. 15. [Repealed, 32 SR 2213]

Subp. 16. [Repealed, 32 SR 2213]

Subp. 17. **Manufacturer of insulation.** "Manufacturer of insulation" means:

- A. an industry member who produces insulation materials in their final form for distribution or sale to intermediate and ultimate consumers;
- B. an industry member who produces insulation materials or installation instructions for a product the manufacture of which is completed at the jobsite; or
- C. an installer of an insulation product the manufacture of which is completed at the jobsite who does not follow the product's installation instructions.

An applicator, contractor, or fabricator of insulation materials who installs, applies, or uses insulation materials for their intended uses and follows the manufacturer's installation instructions, without changing the thermal or physical properties of the insulation material is not a manufacturer of insulation.

Subp. 18. [Repealed, 32 SR 2213]

Subp. 19. [Repealed, 32 SR 2213]

Subp. 19a. **Quality assurance program.** "Quality assurance program" means the collective set of plans, activities, and events that are provided to ensure that the product or service will satisfy given needs. A quality assurance program must conform to ANSI/ISO/ASQ Q9001-2000: "Quality Management Systems Requirements, " ICC-ES AC10, "Acceptance Criteria for Quality Documentation," or an equivalent standard.

Subp. 20. **R or R value.** "R" or "R value" means the measure of resistance to heat flow through a material or assembly of materials. It may be stated as the reciprocal of the heat flow through a material expressed in British thermal units per hour, per square foot, per degree Fahrenheit. R value indicates "thermal performance."

Subp. 20a. [Repealed, 32 SR 2213]

Subp. 20b. [Repealed, 32 SR 2213]

Subp. 21. [Repealed, 32 SR 2213]

Subp. 22. [Repealed, 32 SR 2213]

Subp. 23. [Repealed, 32 SR 2213]

Subp. 24. [Repealed, 32 SR 2213]

Subp. 25. [Repealed, 32 SR 2213]

Subp. 26. [Repealed, 16 SR 2026]

Statutory Authority: *MS s 45.023; 325F.20; 325F.21*

History: *10 SR 1208; L 1987 c 312 art 1 s 9; 13 SR 532; 13 SR 2982; 14 SR 2633; 16 SR 2026; L 2001 1Sp4 art 6 s 1; 32 SR 2213; 39 SR 1167*

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7640.0130 STANDARDS FOR INSULATION MATERIALS AND INSTALLATION.

Subpart 1. [Repealed, 32 SR 2213]

Subp. 2. **General requirements.**

A. All regulated thermal insulation materials must be tested for compliance with the standards according to subpart 3, 4, 5, 6, 7, or 8. An insulation product that has been tested for compliance with another version of an ASTM standard for the product type and is composed of the identical material, for example the same chemical make-up, composition, or physical properties, but that has different dimensional characteristics, such as width, length, or thickness, does not need to undergo additional testing.

B. When the ASTM amends, reorganizes, or modifies a standard test method and the manufacturer or testing laboratory desires to use the new version, the department may be petitioned to adopt the new test method version. Until the department adopts or decides not to adopt the new

version, the petitioner may request a temporary variance, pursuant to Minnesota Statutes, sections 14.055 and 14.056, to use the new test method version.

C. Manufacturers shall have a quality assurance program in place for all regulated thermal insulation products. A quality assurance program must be in place for installers of products whose manufacture is completed at the job site.

Manufacturers and other industry members must maintain an in-house quality assurance program in order for products to meet the required standards.

If a manufactured product fails to meet those required standards, the department shall notify the industry member to pursue corrective measures.

D. Installers must follow manufacturer's installation instructions.

Subp. 3. Cellulose insulation.

A. Cellulose insulation must comply with item B, C, or D and meet the following requirements:

(1) The product must comply with the United States Consumer Product Safety Commission Interim Safety Standard for Cellulose Insulation, Code of Federal Regulations, title 16, part 1209 subpart B.

(2) All manufacturers shall contract with an approved laboratory for a follow-up agreement to accomplish the following:

(a) The laboratory shall conduct unannounced inspections.

(b) The inspections must be:

i. monthly, if production is 350,000 pounds or more per month; or

ii. quarterly, if production is less than 350,000 pounds per month.

(c) The inspector shall conduct tests on a sample at the plant laboratory for settled density, smoldering combustion, critical radiant flux, and corrosiveness (ph).

(d) The inspector shall examine the manufacturer's quality assurance program.

(3) Containers of cellulose insulation products must carry the label identifying the laboratory performing the follow-up program required by subitem (2).

B. Cellulose fiber in loose-fill form must comply with ASTM C739-11, Standard Specification for Cellulosic Fiber Loose-Fill Thermal Insulation. Cellulose loose-fill insulation must be installed in accordance with ASTM C1015-06(2011)e1, Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation.

C. Cellulose fiber spray-applied must comply with either:

(1) Type II requirements of ASTM C1149-11, Standard Specification for Self-Supported Spray Applied Cellulosic Thermal Insulation; or

(2) ASTM C739-11, Standard Specification for Cellulosic Fiber Loose-Fill Thermal Insulation. Design density and thermal resistance must be determined for specimens prepared as spray-applied according to manufacturer's installation instructions.

D. Cellulose fiber stabilized must comply with ASTM C1497-12, Standard Specification for Cellulosic Fiber Stabilized Thermal Insulation.

E. Cellulosic fiber insulating board must comply with ASTM C208-12, Standard Specification for Cellulosic Fiber Insulating Board.

F. Industry members and other persons may not engage in the mobile manufacture of cellulose insulation, which means the simultaneous on-site production and installation of cellulose insulation as an integral mechanical and manufacturing process.

Subp. 4. Mineral fiber insulation.

A. Mineral fiber in loose fill form must comply with ASTM C764-11, Standard Specification for Mineral Fiber Loose Fill Thermal Insulation.

(1) Mineral fiber loose fill must achieve not less than stated performance at winter design conditions as shown by ASTM C1373/C1373M-11, Standard Practice for Determination of Thermal Resistance of Attic Insulation Systems Under Simulated Winter Conditions.

(2) Mineral fiber loose fill must be installed in accordance with ASTM C1015-06(2011)e, Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation.

B. Mineral fiber in batts and blankets form must comply with ASTM C665-12, Standard Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing. Mineral fiber in batts and blankets must be installed in accordance with ASTM C1320-10, Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction.

C. Mineral fiber in board form must comply with ASTM C612-10, Standard Specification for Mineral Fiber Block and Board Thermal Insulation.

D. Spray applied mineral fiber must comply with ASTM C1014-08(2013), Standard Specification for Spray Applied Mineral Fiber Thermal and Sound Absorbing Insulation.

Subp. 5. Foam plastic insulation. All foam plastic insulation must achieve stated performance at 75 degrees Fahrenheit mean temperature. For foam plastic insulations that incorporate blowing agents other than air or pentane, R-value tests must be done on specimens that have been treated in accordance with either the test method identified for the product in items A to F or the Federal Trade Commission R-Value rule, Code of Federal Regulations, title 16, part 460, to fully reflect the effect of aging on the product's R-value.

A. Rigid, cellular polystyrene insulation must comply with either ASTM C578-12b, Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation, or item F.

B. Faced polyisocyanurate in board form must comply with either ASTM C1289-14a, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board, or item F.

C. Field-applied urea formaldehyde foam must meet the following requirements:

(1) Field-Applied Urea Formaldehyde Based, Foam in Place Insulation and its installation must conform with Minnesota Statutes, section 325F.18, and part 4620.1800.

(2) Resin and foaming agent containers must be marked with conditions of proper storage and the derated R-value and shrinkage of the prepared foam as certified by the manufacturer.

D. Closed-cell spray-applied polyurethane foam must comply with either ASTM C1029-13, Standard Specification for Spray Applied Rigid Polyurethane Thermal Insulation, or item F.

E. Rigid cellular phenolic insulation must comply with either ASTM C1126-13, Standard Specification for Faced or Unfaced Rigid Cellular Phenolic Thermal Insulation, or item F.

F. Foam plastic insulation products are deemed to meet the requirements of this subpart if they have:

(1) a current ICC-Evaluation Services Report prepared according to ICC-ES AC12, Acceptance Criteria for Foam Plastic Insulation, or ICC-ES AC377, Acceptance Criteria for Spray-applied Foam Plastic Insulation; or

(2) a comparable independent evaluation report certifying compliance with applicable Minnesota building codes.

Subp. 6. Perlite and vermiculite insulation.

A. Perlite loose fill insulation must meet the following requirements:

(1) The product must comply with ASTM C549-06, Standard Specification for Perlite Loose Fill Insulation.

(2) The manufacturer shall disclose to the department any chemical treatment of the perlite material and the purpose of the treatment.

B. Vermiculite in loose fill form must meet the following requirements:

(1) The product must comply with ASTM C516-08, Standard Specification for Vermiculite Loose Fill Thermal Insulation.

(2) The manufacturer shall disclose to the department any chemical treatment of the vermiculite material and the purpose of the treatment.

Subp. 7. **Reflective insulation.**

A. Reflective insulation for building applications must meet the requirements of either ASTM C1224-11, Standard Specification for Reflective Insulation for Building Applications, or ICC-AC02, Acceptance Criteria for Reflective Foil Insulation.

Reflective insulation must be installed according to ASTM C727-12, Standard Practice for Installation and Use of Reflective Insulation in Building Constructions.

B. Radiant barrier products must meet the requirements of either ASTM C1313/C1313M-13, Standard Specification for Sheet Radiant Barriers for Building Construction Applications, or ICC-EG220, Evaluation Guideline for Sheet Radiant Barriers. Radiant barriers must be installed according to ASTM C1158-05, Standard Practice for Installation and Use of Radiant Barrier Systems (RBS) in Building Construction.

Subp. 7a. **Cotton fiber insulation products.** Cotton fiber insulation products must meet the criteria of ICC-EG81, Evaluation Guideline for Cotton Fiber Insulation.

Subp. 7b. **Polyester loose-fill and blanket insulation products.** Polyester loose-fill and blanket insulation products must meet the criteria of ICC-AC187, Acceptance Criteria for Polyester Loose-Fill and Blanket Insulations.

Subp. 7c. **Vacuum insulation panel insulation.** Vacuum insulation panel insulation must meet the requirements of ASTM C1484-10, Standard Specification for Vacuum Insulation Panels.

Subp. 8. **Other insulation.** Insulation other than insulation specified in subparts 1 to 7c must comply with the requirements of this subpart. The thermal insulation material chosen for testing must be representative of material produced by the manufacturer during normal production runs.

A. Thermal performance characteristics must be determined in accordance with this item.

(1) One of the following test methods must be used: ASTM C177-13, ASTM C518-10, ASTM C1199-12, or ASTM C1114-06. Manufacturers shall select the appropriate test method for the material unless a specific method or procedure is referenced within a materials specification.

(2) For foam plastic insulations that incorporate blowing agents other than air or pentane, R-value tests must be done on specimens that have been treated in accordance with the Federal Trade Commission R-Value rule, Code of Federal Regulations, title 16, part 460, to fully reflect the effect of aging on the product's R-value.

(3) Thermal conductivity measurement must be performed at 75 degrees Fahrenheit mean temperature.

B. Water or moisture absorption must be determined according to one of the following methods: ASTM C272/C272M-12; ASTM C553-11, section 14; ASTM C739-11, section 12; or ASTM D2842-12.

C. If the material is foam in place, a test must be conducted to determine the response to thermal and humid aging in accordance with ASTM C1029-13, section 10.6.

D. If the material contains formaldehyde, the product and installation must conform with Minnesota Statutes, section 325F.18, and part 4620.1800.

E. The product must not produce a detectable odor that is classified as objectionable and strong or very strong by ASTM C1304-08, Standard Test Method for Assessing the Odor Emission of Thermal Insulation Materials.

F. Surface burning characteristics must be determined in accordance with ASTM E84-13a, "Standard Test Method for Surface Burning Characteristics of Building Materials," or Underwriters Laboratories Standard UL 723, "Standard for Fire Tests of Building Construction and Materials."

G. The manufacturer shall provide a statement that the insulation and its intended uses are safe and effective and do not pose a threat to human health. The manufacturer shall disclose any known or reasonably suspected attributes of the product that will adversely affect its safety or effectiveness.

Statutory Authority: *MS s 45.023; 325F.20; 325F.21*

History: *10 SR 1208; 11 SR 2285; L 1987 c 186 s 15, c 312 art 1 s 9; 13 SR 532; 13 SR 754; 13 SR 2982; 14 SR 2633; 16 SR 2026; 32 SR 2213; 39 SR 1167*

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7640.0140 [Repealed, 32 SR 2213]

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7640.0150 REPORTING REQUIREMENTS.

Subpart 1. [Repealed, 39 SR 1167]

Subp. 2. **Reporting.** Upon request by the commissioner, an industry member who offers for sale in this state any products subject to this part shall provide the following information:

- A. the manufacturer's name, address, phone number, and contact person;
- B. product names, including any and all generic, trade, and brand names the product may be identified by;
- C. type of product;
- D. product literature, including installation instructions and promotional materials, a copy of the label affixed to the product, a copy of the product's material safety data sheet, and a list of the intended uses of the product, including whether the product is recommended for exterior below-grade application;
- E. a fact sheet as required by FTC R value rule, identified in Code of Federal Regulations, title 16, part 460;
- F. a report demonstrating the performance of the product, including:

- (1) results of initial tests, as required by part 7640.0130, identifying tests performed, name of laboratory, testing dates, and test results; or
- (2) a current ICC-Evaluation Services Report for the product.
- G. a statement that each product meets or exceeds the test standards required by this chapter;
- H. if follow up agreement is required by part 7640.0130, the:
- (1) scope of material characteristics of the product encompassed by this agreement;
- and
- (2) frequency of unannounced inspections; and
- I. a description of the quality assurance program.

Subp. 3. [Repealed, 39 SR 1167]

Statutory Authority: *MS s 45.023; 325F.20; 325F.21*

History: *L 1987 c 312 art 1 s 9; 13 SR 532; 13 SR 2982; 14 SR 2633; 32 SR 2213; 39 SR 1167*

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