

STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SERVICE

In the Matter of the Proposed Amendments
to Rules of the Minnesota Department of
Public Service Governing Residential
Thermal Insulation Standards, Minn.
Rules ch. 7640

STATEMENT OF NEED
AND REASONABLENESS

February, 1990

I. INTRODUCTION

The Commissioner of the Minnesota Department of Public Service (Department) proposes to adopt amendments to Minn. Rules ch. 7640, rules known as the Minnesota Residential Thermal Insulation Standards.

The principal rule revisions include modifications to criteria for cellulose spray applied and "other" insulations; modifications to criteria for products designed for exterior below ground use; and updating referenced standards. In addition, editorial changes are proposed to clarify the rule and to conform them with current style requirements.

The original rules governing the manufacture, sale, and installation of all thermal insulation for residential buildings in Minnesota were adopted in November 30, 1985. The rules have been subsequently amended three times: on June 30, 1987; April 30, 1988; and June 26, 1989. Since 1985, approximately 70 manufacturers have completed filings for insulation products with the Department.

The Department began the present rule modification process in October, 1989, by publishing a notice in the State Register (14 S.R. 979) soliciting opinions and information from the public on

the rules governing residential thermal insulation. The deadline for receiving comments was subsequently extended to January 30, 1990.

II. STATEMENT OF DEPARTMENT'S STATUTORY AUTHORITY

The Commissioner's authority to adopt the rule amendments is set forth in Minn. Stat. § 325F.20 (1988), which provides:

The commissioner shall adopt rules pursuant to chapter 14 regarding quality, information, and product safety specifications for the manufacture, labeling, installation, and thermographing of insulation. The specifications and any amendments to them shall conform as far as is practical to federal standards or other standards generally accepted and in use throughout the United States. The standards, with modifications as may be deemed necessary, may be adopted by reference. The specifications adopted and any amendments shall be based on the application of scientific principles, approved tests, and professional judgment. For purposes of this subdivision, the commissioner may adopt emergency rule, which may remain in effect for 360 days.

"Commissioner" is defined by Minn. Stat. § 325F.19, subd. 3 as the commissioner of energy and economic development. The duties of the commissioner of energy and economic development were transferred to the Department of Public Service by Minn. Laws 1987, ch. 312, art. 1, § 9.

Under these statutes the Commissioner has the necessary statutory authority to adopt the proposed rule amendments.

III. STATEMENT OF NEED

Minn. Stat. ch. 14 (1988) requires the Department to make an affirmative presentation of facts establishing the need for and reasonableness of the rules as proposed. In general terms, this means that the Department must set forth the reasons for its

proposal, and the reasons must not be arbitrary or capricious. However, to the extent that need and reasonableness are separate, need has come to mean that a problem exists which requires administrative attention, and reasonableness means that the solution proposed by the Department is appropriate. The need for the rule amendments is discussed below.

Although the implementation of the Minnesota Residential Thermal Insulation Standards has been going smoothly, the Department believes that certain improvements are needed and is thus proposing these amendments. The first reason that changes are needed is that recent research has heightened the understanding of certain applications of thermal insulation, particularly exterior below grade applications. The revisions proposed are intended to take advantage of this heightened understanding. A second reason for the need for improvement is that the Department is aware of changes in industry practices and federal regulations that relate to residential thermal insulation. Finally, in the day-to-day implementation of these rules, the Department finds that portions of the existing rules are unclear. This rule proposal is intended to clarify those portions.

IV. STATEMENT OF REASONABLENESS

The Department is required by Minn. Stat. ch. 14 to make an affirmative presentation of facts establishing the reasonableness of the proposed rules. Reasonableness is the opposite of

arbitrariness or capriciousness. It means that there is a rational basis for the Department's proposed action. The reasonableness of each section of the proposed rule amendments is discussed below.

Changes in References to ASTM Standards and Other Cross References, Located in Several Parts of the Rule Amendments

In many parts of the proposed rule amendments, the Department proposes to change the form of the references to ASTM standards and other cross references in the rules. In order to fully reference an ASTM standard, one must identify its prefix number, version, and title. Full references to ASTM standards are set forth in part 7640.0180, subp. 2 of the proposed rule amendments, which is entitled "Incorporations by Reference and Citations." However, in the other parts of the rule referencing ASTM standards, the Department proposes to identify only the prefix number, and sometimes the title. Another cross reference of this type refers to the International Conference of Building Officials (ICBO) Evaluation Service Acceptance Criteria for Foam Plastics. The full reference to this standard is set forth in part 7640.0180, subp. 3, item H. However, in the other parts of the rule referencing the ICBO standard, the version referenced is not included. A third cross reference of this type refers to the Code of the Council of American Building Officials (CABO). The full reference to this Code is found in part 7640.0180, subp. 3, item B. However, in the other parts of the rule referencing the CABO Code, the version referenced is not included.

These changes are reasonable because they will reduce the chance for error in future amendments to Minn. Rules ch. 7640, where a new version of a standard may be incorporated in part 7640.0180, subp. 2, but inadvertently overlooked in another part of chapter 7640. They are reasonable for the further reason that the full information on the incorporation by reference is easily found by looking at part 7640.0180.

This explanation serves as the Department's demonstration of the need and reasonableness of the amendments to the ASTM standards and other reference changes in the parts listed below:

Part 7640.0120, subp. 1
Part 7640.0130, subp. 2, item A, subitem 1
Part 7640.0130, subp. 2, item B, subitem 5
Part 7640.0130, subp. 3, item A, subitem 1
Part 7640.0130, subp. 3, item B, subitem 3
Part 7640.0130, subp. 3, item B, subitem 4
Part 7640.0130, subp. 3, item B, subitem 5
Part 7640.0130, subp. 3, item B, subitem 6
Part 7640.0130, subp. 4, item A
Part 7640.0130, subp. 4, item B
Part 7640.0130, subp. 4, item D
Part 7640.0130, subp. 5, item A
Part 7640.0130, subp. 5, item B
Part 7640.0130, subp. 5, item C
Part 7640.0130, subp. 5, item E, subitem 1
Part 7640.0130, subp. 5, item F
Part 7640.0130, subp. 5, item H
Part 7640.0130, subp. 6, item A, subitem 1
Part 7640.0130, subp. 6, item B, subitem 1
Part 7640.0130, subp. 7, item A, subitem 2
Part 7640.0130, subp. 7, item B
Part 7640.0140, subp. 2, item B
Part 7640.0140, subp. 2, item C
Part 7640.0140, subp. 4
Part 7640.0160, subp. 2, item C
Part 7640.0160, subp. 2, item D

Further references to these changes will not be made in the discussion of amendments to these specific sections.

Part 7640.0120, DEFINITIONS, subp. 1, Applicability

This subpart indicates that technical, scientific, and engineering terms undefined in the part have the meanings given them in two specific referenced documents. The Department proposes to amend this part to delete the reference to "the ASHRAE Handbook of Fundamentals." This is reasonable because the other reference in the rule, ASTM C 168, Standard Definitions of Terms Relating to Thermal Insulation Materials, contains all of the terms necessary for the purposes of part 7640.0120.

Part 7640.0120, DEFINITIONS, subp. 17, Manufacturer of insulation

The existing rule defines a "manufacturer of insulation" both in general terms (an industry member who produces insulation materials in their final form for distribution or sale to intermediate and ultimate consumers) and with reference to two specific insulation types (an industry member "who is a urea formaldehyde foam or spray urethane foam insulation manufacturer of the component resins and catalysts used for in situ foaming"). The Department proposes to amend this subpart to create items A, B, and C and to add a final paragraph to this subpart, as discussed below:

Item A

The Department proposes to delete from this part of the definition of a "manufacturer of insulation" the reference to an and industry member "who is a urea formaldehyde foam or spray urethane foam insulation manufacturer of the component resins and

catalysts used for in situ foaming." However, the Department does not intend to deregulate these manufacturers but rather includes them in the more general definitions set forth in items B and C. This deletion is reasonable because it eliminates language that would otherwise be redundant in light of the additional language of items B and C.

Item B

The Department proposes to add to the definition of a "manufacturer of insulation" an industry member who produces insulation materials and installation instructions for a product the manufacture of which is completed at the jobsite. This addition is reasonable because even though a manufacturer of insulation materials may not actually produce the insulation in its final form, the manufacturer controls the final form of the product by specifying the process for the insulation to reach its final form.

Item C

The Department proposes to add to the definition of a "manufacturer of insulation" an installer of an insulation product the manufacture of which is completed at the jobsite who prepares or modifies the product's installation instructions. This addition is reasonable because an installer who prepares or modifies the product's installation instructions controls the final form of the product.

Addition of Final Paragraph

The Department proposes to add a final paragraph to this subpart which states that an applicator, contractor, or fabricator of insulation materials who installs, applies, or uses insulation materials for their intended uses, without changing the thermal or physical properties of the insulation material is not a manufacturer of insulation. This language is reasonable to assure that installers who are merely following the installation instructions do not become subject to all of the rule requirements applicable to manufacturers. This provision, recommended by the Society of Plastics Industries, Polyurethane Foam Contractors Division (Attachment 5), is identical to the provisions of California Statutes, ch. 925, § 6(c).

Part 7640.0130, INSULATION MATERIALS STANDARDS, subp. 2, General testing requirements

The Department proposes to amend items B and C of this subpart as follows:

Item B

The Department proposes to delete the reference to "April 2, 1986" as a deadline for testing of all regulated thermal insulation materials. This is reasonable because this deadline appears in subitem 1 of item B, and this language is thus redundant. Additional grammatical changes are made in this item; these changes are reasonable because they shorten the rule without changing its meaning.

Item C

The Department proposes to amend subitems (1) through (3) of this item, which establishes requirements for thermal performance tests on insulation.

The Department proposes to amend subitem (1) to require only one thermal conductivity (R-value) test at only one temperature, 75 degrees Fahrenheit (F). This amendment is reasonable because it will prevent unnecessarily duplicative testing of products at many different temperatures. Selecting 75 degrees F as the temperature is reasonable because Minn. Stat. § 325F.19, subp. 8 defines the R-value of residential thermal insulation as being determined at 75 degrees F.

The Department proposes to delete the reference to the Federal Trade Commission in subitem (2) and replace the language with a reference to 40 C.F.R. Part 460. This is reasonable because it is more specific than the former reference to "the requirements of the United States Federal Trade Commission" and will thus aid the reader in locating those requirements.

The Department proposes several changes to subitem (3). First, the Department has replaced the words "polyurethane, polyisocyanurate, and extruded polystyrene" with the term "foam plastic insulations that incorporate blowing agents other than air or pentane." This change is needed to assure that aged R-value testing is required for foam plastics in addition to polyurethane, polyisocyanurate, and extruded polystyrene. This

is reasonable because foam plastic insulations incorporating blowing agents other than air or pentane may lose a significant percentage of their initial R-value with aging. All other changes in the rules have the effect of deleting the reference to 40 C.F.R. § 460.5 and making the language of the rule identical to ASTM C 578, section 11 (Attachment 1). It is reasonable to update this portion of the rule to be consistent with current national standards.

Part 7640.0130, INSULATION MATERIALS STANDARDS, subp. 3,
Cellulose insulation

The Department proposes to amend subitems 3 through 8 of item B and to add three new subparts to the item.

Subitem 3

The Department proposes to amend subitem 3 by replacing the references to four ASTM standards with a reference to subpart 2, item C. This change is reasonable because it eliminates duplication and reduces the potential for error in future rulemaking if further changes in references are made to subpart 2, item C. Because the thermal performance provisions of part 7640.0130, subp. 2, item C are identical to the deleted ASTM references, the amendments do not result in any change in the requirements of the rule.

Subitem 4

The Department proposes to amend subitem 4 to delete the reference to section 7 of ASTM C 605. This is reasonable because section 7 does not contain the complete requirement of that ASTM standard.

Subitem 5

The Department proposes to amend subitem 5 to delete the words "tested for" in the first sentence, so that the first sentence will state: "Critical radiant flux and smoldering combustion must be in accordance with" certain standards. It is reasonable to delete these two words because their presence suggested that one only needed to test for the elements of critical radiant flux and smoldering combustion, when the true intention of the rule is that those elements meet specified standards. The amended language clarifies the rule.

The Department also proposes to amend the reference to ASTM C 739 to delete the specific reference to part 5 of that standard. This is reasonable because part 5 does not contain all of the requirements of the standard. The Department also proposes to amend the second sentence in the existing rule, which states that values achieved must not exceed those established by the CPSC (Consumer Products Safety Commission). It is reasonable to delete this language because it is redundant in light of the change in the first sentence.

Finally, the Department proposes to amend this subitem to state that if the product in loose-fill form meets the criteria for critical radiant flux, then a test of the product in spray-applied form for critical radiant flux is unnecessary. This is reasonable because a product in loose-filled form that passes the test would certainly pass the test in spray-applied form. This is the opinion expressed in telephone conversations by Mr. Robert Smith of United States Testing Company in Tulsa, Oklahoma, and Mr. Ray Hillier of the California Bureau of Home Furnishings and Thermal Insulation in Sacramento, California. Therefore this exemption is reasonable because it eliminates the requirement for unnecessary testing.

Subitem 6

The Department proposes to amend subitem 6 to replace a reference to section 15 of ASTM C 553 with a reference to section 14 of that standard. This change is reasonable because it corrects an error that was made in previous rulemaking. Section 15 of ASTM C 553 pertains to odor emission, while section 14 pertains to moisture absorption, the subject of this subitem.

Subitems 7 and 8, renumbered as subitem 7

The Department proposes to combine existing subitems 7 and 8, and renumber them as subitem 7. The Department proposes to delete the general language requiring product compliance with test standards for air erosion, bond strength, and bond deflection that have been accepted by the ASTM or a federal or

state government. It is reasonable to delete this general language because standard procedures now exist for testing adhesive/cohesive bond strength.

The Department also proposes to require products to have a minimum adhesive/cohesive bond strength per unit area of five times the weight of the material under the test plate when tested in accordance with ASTM E 736. The addition of the criterion (of five times the product's weight) is needed in order to provide a pass/fail standard for this procedure; the criterion selected is reasonable because it is identical to the requirement for spray-applied mineral fiber established by ASTM C 1014, section 5.2 (referenced in part 7640.0130, subp. D). The adoption by reference of ASTM E 736 is reasonable because it is a national standard.

Finally, the Department proposes to amend the last sentence of renumbered subitem 7 to modify the exception language. The existing rule exempts products from testing if they are "installed so that physical restrictions imposed by the construction elements preclude any possibility of subsequent delamination, erosion, or dusting." The Department proposes to change this language to exempt products from testing if they are "intended only for installation in enclosed cavities." This change is reasonable because it is a shorter and clearer way of stating the same idea. All other language changes in the rule

are grammatical in nature and are reasonable because they result in clear rule language.

New subitems 8, 9 and 10

The Department proposes to add new subitems 8-10, which state that corrosion, odor, and fungi resistance must be in accordance with ASTM C 739, or the CPSC Interim Safety Standard for Cellulose Insulation, 16 C.F.R. Part 1209. This new language is reasonable because it will ensure that the installed product is safe and effective and in compliance with national standards. The Department proposes to exempt the product in spray-applied form from testing for the elements of corrosion, odor emission, and/or fungi resistance if the product in loose-fill form meets the criteria for the corresponding element. This is reasonable because a product in loose-filled form that passes the test for any of these elements would certainly pass the test in spray-applied form for the corresponding element. This is the opinion expressed in telephone conversations by Mr. Robert Smith of United States Testing Company in Tulsa, Oklahoma, and Mr. Ray Hillier of the California Bureau of Home Furnishings and Thermal Insulation in Sacramento, California. Therefore this exemption is reasonable because it eliminates the requirement for unnecessary testing.

Part 7640.0130, INSULATION MATERIALS STANDARDS, subp. 4, Mineral fiber insulation, item C

The Department proposes to amend item C to replace the detailed requirements items in existing subitems 1 and 2 with a

reference to ASTM C 612, Standard Specification for Mineral Fiber Block and Board Thermal Insulation. This change is reasonable because the adoption of the ASTM standard will ensure that mineral fiber insulation in Minnesota conforms with national standards.

Part 7640.0130, INSULATION MATERIALS STANDARDS, subp. 5,
Foam plastic Insulation

The Department proposes to delete the language in subitem 3 of item E which requires manufacturers and installers of urea formaldehyde foam insulation to comply with statutes and rules, including parts 4620.1600 to 4620.2100, and Minn. Stat.

§ 325F.10. At the same time, the Department has proposed to insert this requirement into part 7640.0160, subp. 2, Application and inspection, item E. Moving this language to the application and inspection portion of part 7640.0160 is reasonable because the language of the item relates to installation requirements and not material specifications. This change clarifies the rule.

The Department also proposes to add new language labeled item G and to amend the language in the item relabeled item H.

The new language in item G requires rigid cellular phenolic insulation to comply with ASTM C 1126, Standard Specification for Faced or Unfaced Rigid Cellular Phenolic Thermal Insulation. This requirement is reasonable because it will ensure that rigid cellular phenolic insulation installed in Minnesota will conform to national standards.

The Department also proposes to amend item H to delete the general language referring to "the Minnesota testing standards in this subpart" and replace that language with "requirements of part 7640.0130. This change is reasonable because it makes the rule more specific and thus more clear.

Part 7640.0130, INSULATION MATERIALS STANDARDS, subp. 7, Reflective foil insulation

The Department proposes to amend item C of this part to make grammatical changes and to make more specific the test requirements applicable to a single sheet reflective insulation system. The proposed amendments delete the option to use "another test method that provides comparable results" to those provided by a test conducted in accordance with ASTM E 408. This is reasonable because there is no other test for determining the emissivity of foil. The Department also proposes to replace the general reference to "the tables in the most recent edition of the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)" with a reference to "Table 2 in Chapter 22 of the ASHRAE Handbook of Fundamentals." This change is reasonable because it makes the testing requirement more specific and thus clarifies the rule.

Part 7640.0130, INSULATION MATERIALS STANDARDS, subp. 8, Other insulation

The Department proposes to amend the first sentence of the rule to delete the words "to be sold, marketed, or advertised for use in residential structures in Minnesota" with reference to

insulation other than insulation specified in subparts 1 to 7. This is reasonable because this language is unnecessary in light of parts 7640.0110, subp. 2 and 7640.0130 which provide that the requirements of the rule relate to the distribution and sale of residential insulation material within Minnesota.

The Department proposes to amend item B to replace the phrase "Results of moisture tests must be reported" with the requirement that water or moisture absorption be determined according to one of four tests: ASTM C 272; ASTM C 553, section 14; ASTM C 739, section 12; or ASTM D 2842. This amendment is needed to identify specific test methods for water or moisture absorption. It is reasonable because the water or moisture percentage of all thermal insulation materials can be determined by one of these methods.

The Department also proposes to delete the language of item E requiring the initial report to include a description of other tests applied. This deletion is reasonable because the sentence is redundant with the reporting requirements of part 7640.0150. The Department proposes to replace the deleted language with a requirement that the product must not produce a detectable odor that is classified as objectionable and strong or very strong by two or more panel members when tested in accordance with ASTM C 739, section 13. This requirement is identical to that established for cellulose products (part 7640.0130, subp. 3) and mineral fiber products (part 7640.0130, subp. 4). It is

reasonable to use the results of this type of odor testing as a standard against which to judge other insulations because approved testing laboratories are familiar with the test method for odor described in ASTM C 739, section 13.

Part 7640.0140, REQUIREMENTS FOR INSULATION FOR SPECIAL APPLICATIONS, subp. 1, Physical requirements for insulation materials designed for exterior, underground use

Subpart 1 of this part relates to physical requirements for insulation materials designed for exterior, underground use. The science of exterior below ground insulation is not well understood. There are no national consensus standard specifications for insulation materials used in this application. Thus, specific pass/fail criteria are not included in subpart 1. Rather, the proposed amendments require the manufacturer to show, on the basis of test results and analysis of physical characteristics, that the material is suitable for exterior foundation application.

A research project was conducted by the Department in 1988 with the intent to find out how specific materials were doing in this application two to eight years after installation. The report of this research, "A Survey of Minnesota Home Exterior Foundation Wall Insulation: Moisture Content and Thermal Performance," was published in November, 1988. The Executive Summary of this report is Attachment 2. A major conclusion of this research was that a much better job is needed to protect the

above grade exposed portion of exterior foundation wall insulation.

A meeting was held on November 15, 1989, with representatives of all the types of insulations currently used for this application to discuss this issue. The notes from this meeting (Attachment 3) are frequently referred to in this portion of the Statement of Need and Reasonableness. These notes were distributed to industry members producing and installing insulation materials used in this application. The Department subsequently received opinions and facts that resulted in some of the proposed rule changes that may appear to be in conflict with some of these meeting notes.

The Department proposes to change the title of subpart 1 from "Application testing requirements for exterior, underground insulation" to "Physical requirements for insulation materials designed for exterior, underground insulation." This is reasonable because the new title more clearly indicates the subject content of subpart 1.

Department proposes to amend items A through F in a manner that results in new items A through D. The discussion below addresses the proposed amendments by referring to the new item label.

Item A

The existing item A requires service testing in a testing facility designed to duplicate actual underground testing, with

winter weather moisture and soil conditions, for the purpose of determining aged R-value performance. The discussion at the November 15 meeting (Attachment 3) led to the conclusion that even though there are no exact standards for insulation in an exterior, underground application, field testing continues to be a good idea. However, there is a need for this item to have some more specific parameters.

The Department proposes to add the following specific parameters to item A: the insulation system must be installed in accordance with the manufacturer's recommendations; the test may be conducted at either a testing facility or an actual house; the test must be conducted for a period of one continuous year; the testing environment must have historical winter weather conditions no less than 8,000 Fahrenheit heating degree days; and the testing environment must have soil conditions classified as poor in Table 7-4 of the Building Foundation Design Handbook (Attachment 4).

Each of these specific parameters is reasonable. It is reasonable to require the insulation to be installed in accordance with the manufacturer's recommendations or else the test results will not be representative of the product as envisioned by the manufacturer. It is reasonable to allow the option of doing testing at an actual house, because in the past the Department has accepted test results at an actual house and has found them to be reliable. It is reasonable to require that

the test be conducted for a period of one continuous year because the product will thus have been exposed to the weather conditions of all four seasons. It is reasonable to require the testing environment to have historical winter weather conditions no less than 8,000 Fahrenheit heating degree days because this condition is approximately representative of weather conditions measured at the St. Paul - Minneapolis International Airport and thus assures that the testing will be done under Minnesota-like weather conditions. It is reasonable to require the testing environment to have "poor" soil conditions because this will ensure that test results will be representative of the likely poorest conditions that would be found in an actual installation; if the product is effective in the poorest soil conditions, it should be effective in better soil conditions.

The Department also proposes to amend item A to delete language requiring the submission of test results to the Department. This is reasonable because this language is redundant of the reporting requirements in part 7640.0150.

The Department also proposes to amend item A to add an exception, stating that in-service testing is not necessary if the manufacturer demonstrates that a product of the same material specification with equal or less durability in this application has been successfully in-service tested. The manufacturer is required by this exception to demonstrate the equal or less durability test by comparing laboratory test results of the

physical characteristics listed in part 7640.0140, subp. B.1(4). This exception is reasonable because it will prevent duplicative testing of a product which has already been proven to be of equal or greater durability in this type of application.

Item B (formerly items B, C, and D)

The Department proposes to delete the language of the existing item B, which allows as an alternative to the testing requirements of item A a test by an approved laboratory. This is reasonable because, as indicated at page 2 of Attachment 3, there are no "approved" laboratories who do this type of testing.

The new item B consists of an amended version of existing item C, which provides for a review of the physical characteristics of an insulation product. The amended language requires the manufacturer to demonstrate that the product will exhibit less than a ten percent loss in R-value when installed. This pass/fail criterion is reasonable because the Minnesota research on exterior foundation wall insulation (Attachment 2) indicates that most of the 59 specimens examined had less than 10 percent loss of R-value due to moisture absorption. The amended language also requires the manufacturer to demonstrate the combined effect of assumed conditions on the physical characteristics listed in subitems 1 through 5. This requirement is reasonable because manufacturers will know the effects of a limited range of assumed conditions on products that they manufacture.

The Department also proposes to change the wording of one of the physical characteristics in the listed subitems and to delete another. It is reasonable to change "flexural strength or compression" to "compressive strength" because flexural strength is not a significant parameter for products used in this application, while the material specifications of nearly all insulation products identify procedures for determining compressive strength. It is reasonable to delete "vapor drives to to high low pressure gradients" because although the moisture diffusion properties of material of insulation material may affect its thermal performance in an underground application, there is no published research indicating what this effect might be. It would therefore be unreasonable to require manufacturers to make this determination.

Finally, the Department proposes to delete the language of existing item D, which states: "The initiator seeking the listing shall state the appropriate tests that best address the conditions stated in item C." This is reasonable because, as the discussion at the November 15 meeting indicated (Attachment 3), manufacturers should be subject to uniform requirements and not be permitted to choose which requirements their products should meet. In place of the deleted sentence, the Department proposes to add a final sentence to item C that states: "The manufacturer shall state the assumed conditions in the initial report filed pursuant to part 7640.0150, subp. 2." This requirement is

reasonable because, in order to evaluate the demonstration, the Department needs to know the conditions that were assumed.

Item C (formerly items D and E)

Item C relates to the ability of a trade association or representative to apply to get an insulation product listed for below grade use. The Department proposes to change the first sentence of the rule to specify that the trade association or representative may conduct tests and prepare a filing on behalf of its constituency. This change is reasonable because it clarifies what must be done to initiate the process.

The Department proposes to amend the second sentence of this item to replace a requirement of submitting samples for testing with a requirement to conduct the test in accordance with subpart 1, item A, on at least three specimens of the product. In selecting three tests as the requirement, the Department is exercising its judgment that three tests would be more reliable than one; however, requiring three tests of an individual could be too costly, whereas an association of manufacturers can take advantage of its greater resources to pay for three tests. Therefore, this requirement is reasonable.

Finally, the Department proposes to amend the third sentence of the rule to change the requirement that the association have an internal certification procedure to determine constituency conformity to the representative samples submitted by the association. This is changed to a requirement that the

association must demonstrate that the manufacturers' products for which the tests and filing would apply are representative of the tests and filing performed by the association. This is reasonable because the quality of the representative samples is not as important as the quality of the manufacturers' products.

Item D (formerly item F)

The Department proposes to delete the sentence requiring a summary of test results to be submitted to the Department. This is reasonable because this sentence is redundant with the filing requirements of part 7640.0150. The Department proposes to add a requirement that mineral fiber board for exterior below ground application be manufactured to facilitate downward drainage. This language is the substantially the same as the language in existing part 7640.0140, subp. 3, item C, subitem 1. It is reasonable to move this language to this location because it more appropriately fits under the subject matter of subp. 1 of this rule.

Part 7640.0140, REQUIREMENTS FOR INSULATION FOR SPECIAL APPLICATIONS, subp. 2, Requirements for installation instructions for underground use

This part governs installation instructions for underground use. The proposes to delete the phrase "at a minimum" which currently precedes the list of subjects that must be addressed in instructions. This deletion is reasonable because this phrase adds nothing to the clarity or substance of the rule.

The Department also proposes to add language to the first phrase of the rule requiring instructions or information "for vertical and, if recommended, horizontal application." At the same time, the Department proposes to delete the very last sentence of the rule, which now states: "Manufacturers that recommend a product for underground use in the vertical or horizontal position shall provide complete instructions for its respective applications." The net effect of these two amendments is to move the language concerning vertical and horizontal applications from the last sentence to the first phrase. This amendment is reasonable because it improves the organization of clarifies the rule without changing its substantive requirements.

The Department also proposes to amend items A through G of this subpart. The Department proposes to delete the word "optimal" after the phrase "application techniques in item A. This is reasonable because there is neither a common nor a specific definition of the word "optimal" in this context; the language of item A is sufficient without this word.

The Department proposes to amend items B and C relating to drainage, waterproofing, or dampproofing to add the phrase "if required for the insulation." This amendment is reasonable because drainage, waterproofing, or dampproofing are not required for all types of insulation products used in this application. It is reasonable to only require instructions on these parameters where those parameters apply.

The Department proposes to amend item D to replace the words "varying soil and soil moisture conditions" with "chemical resistance information." This amendment is reasonable because there are no standards for determining compatibility of insulation products with soil and moisture conditions. On the other hand, manufacturers are including chemical resistance information in their installation instructions. That information is much more valuable in making a determination as to the appropriateness of the application.

The Department proposes to amend item E by amending the phrase to read: "ambient temperature range permitted during application." This change is reasonable because it clarifies that the ambient temperature is a consideration during application of the product.

The Department proposes to amend item F by deleting the word "optimal" before the phrase "backfill techniques." This deletion is reasonable because there is neither a common nor a specific definition of the word "optimal" in this context, and the phrase is sufficiently clear without it. In addition, the Department proposes to amend the phrase so that it states: "backfill techniques and backfill materials for prevention of damage to the insulation material and below grade protective coating." The participants in the November 15 meeting (Attachment 3) pointed out that the rule should address not only backfill procedures but also backfill material. The amended rule is reasonable because

it clarifies that instructions must address these two items in view of the need to protect them from damage once the insulation has been installed.

The Department proposes to delete item G. The discussion at the November 15 meeting (Attachment 3) indicated that this provision was not needed. Minn. Stat. § 325G.17 - 325G.19 pertaining to consumer warranties requires that, unless specifically disclaimed, all products sold have an implied warranty of fitness. The deleted item established further requirements if the product was warranted for below ground use; the problem is that there is no standard method for determining compliance with these requirements. Thus the requirements applicable to the warranty were unenforceable, and deleting them is reasonable.

Part 7640.0140, REQUIREMENTS FOR INSULATION FOR SPECIAL APPLICATIONS, subp. 3, Installation requirements for exterior above ground and underground use

The Department proposes to amend subpart 3 to delete the introductory applicability sentence. This deletion is reasonable because items A through C of the subpart, as amended, are full sentences and speak for themselves.

The Department proposes to amend existing items A through D in a manner that results in new items A through C. The discussion below will refer to the new item labels.

Item A (formerly items A and B)

The Department proposes to delete the language of existing item A, which states that the installation and application of insulation in the vertical or horizontal position must conform to the manufacturers' instructions and recommendations. It is reasonable to delete this language because it is redundant of the language in the amended part 7640.0140, subp. 2.

The Department proposes to amend former item B in two respects. First, the words "above the ground line" are changed to state "above grade." This is reasonable because it makes the language of the rule consistent with the State Building Code. Second, the phrase "protect the insulation from ultraviolet sunlight, moisture absorption, freeze thaw durability, air erosion, and general weather conditions" is replaced with the phrase "protect the insulation from deterioration due to sunlight and physical abuse." Participants at the November 15 meeting (Attachment 3) indicated that the purpose of above grade protective coating is to protect insulation from sunlight and physical abuse only. The exterior foundation wall insulation research study (Attachment 2) found damage due to physical abuse and sunlight but not due to general weather conditions or wind erosion. Therefore these changes are reasonable because they accurately reflect the purpose of the protective coating.

Item B (formerly item C)

The Department proposes to delete the modifier "spray applied" from the phrase concerning polyurethane or polyisocyanurate application. This deletion is reasonable because both polyurethane and polyisocyanurate are available for application in both spray applied and pre-formed board form.

The Department also proposes to delete subitem 1, which requires manufacturers to recommend the type of urethane systems to be used for underground use and requires applicators to use only a recommended system. Deletion of this subitem is reasonable because the language is redundant of the requirement in part 7640.0160, subp. 2, item A. Editorial changes are also proposed to turn the remaining language into a sentence. This is reasonable because it clarifies the rule. Finally, the Department proposes to delete from this item the requirement for a protective coating above ground. This is reasonable because this issue is adequately covered by item A of this subpart.

Item C (formerly item D)

The Department proposes to delete subitem 1 of this item, which requires drainage boards to be manufactured to facilitate proper downward drainage, or in the alternative, manufactured in such a manner that moisture will not substantially penetrate horizontally toward the foundation wall. It is reasonable to delete this requirement from this part of the rule because the language relates to manufacture, not installation of insulation

products. Any concern about installation with respect to drainage is adequately covered by part 7640.0140, subp. 2, item D, which requires installation instructions to address the application considerations of varying soil and soil moisture conditions. The Department is also proposing editorial changes to make the remaining language of item C into a logical sentence. These amendments are reasonable because they clarify the rule.

Part 7640.0150, REPORTING REQUIREMENTS, subp. 2 Initial report

This subpart lists the items that must be included in an initial report of an industry member that must be filed at least 30 days before offering for sale in the state any new products, significant changes to a product already filed, or changes to product installation instructions to a product already filed. The Department proposes to add to item F the requirement that the report for "other" insulation products regulated by part 7640.1030, subp. 7640.0130, subp. 8 must also include the products' Material Safety Data Sheet (MSDS). This requirement is needed because materials classified as "other" insulation products are not described by an ASTM standard specification. If the Department receives a request from the public for information on this type of product, the MSDS is a valuable source of that information. It is reasonable to require the filing of the MSDS because 29 C.F.R. section 1900.1200 requires all manufacturers in SIC codes 20 through 39 (which includes thermal insulation manufacturers) to have MSDS for thermal insulation products or

chemicals, and thus it is not burdensome to require inclusion of the MSDS with the initial report.

Part 7640.0160, APPLICATION AND INSTALLATION STANDARDS, subp. 1, Applicability

The Department proposes to combine the three paragraphs of the existing rule into one sentence without changing the meaning of the rule. This is reasonable because it shortens the rule without altering its requirements.

The Department also proposes to add a statement that an installer of insulation the manufacture of which is completed at the jobsite becomes a manufacturer for the purposes of Minn. Rules ch. 7640. This addition is reasonable because it clarifies the rule and makes it consistent with the definition of "manufacturer or insulation" in part 7640.0120, subp. 17.

Part 7640.0160, APPLICATION AND INSTALLATION STANDARDS, subp. 2, Application and inspection

The Department proposes to amend items A through F of the rule, as discussed below.

As amended, item B now consists of language identical to part 7640.0110, subp. 5, second sentence, of the existing rules, setting forth requirements relating to installation of insulation in attic areas. At the same time, part 7640.0110, subp. 5, which is within the "Applicability" section of the rules, is proposed to be repealed. It is reasonable move this language to the "Application and installation standards" of part 7640.0160 because the requirements in the repealed language do not address the

applicability of the rule but rather addresses product application. This change improves the clarity of the rules.

Along with this change, the Department proposes to amend item A of the rule to delete a sentence cross referencing part 7640.0110, subp. 5. This modification is reasonable in light of the proposed repeal of that subpart.

The Department proposes to amend items C and D of the rule to change the word "comply" to the phrase "be in conformance." This change is reasonable because it conforms the rule with current style requirements of the Revisor of Statutes. The Department also proposes to amend these items to update the references to ASTM standards. This is reasonable because it makes the rule consistent with current national standards.

New item E concerns installers of urea formaldehyde foam insulation. The Department proposes to move the language of Minn. Rules pt. 7640.0160, subd. 3, item C of the existing rule to item E. In addition, cross reference in that language to Minn. Rule pt. 7620.2100 is changed to "parts 4620.1600 to 4620.2100." This amendment is reasonable because it clarifies the rule without changing the requirements applicable to installers of urea formaldehyde foam insulation.

New item F provides that state and local agencies who use appropriated federal funds and persons contracting with state and local agencies with respect to work performed under the contracts shall comply with the Guideline for Federal Procurement of

Building Products Containing Recovered Materials, 40 C.F.R. Part 248 (Attachment 6). This requirement is reasonable because it is already required by federal law; adding it to this rule will increase awareness of the need to comply with this federal requirement.

Part 7640.0160, APPLICATION AND INSTALLATION STANDARDS, subp. 3, Manufacturer's installation or application instructions

The Department proposes to amend item C of this rule to replace the existing language with new language. The deleted language required urea formaldehyde foam insulation to conform with Minn. Stat. § 325F.18 and Minn. Rules pt. 4620.2100. As discussed above, this requirement was moved to part 7640.0160, subp. 2, item E; therefore it is reasonable to delete it here in order to avoid redundancy.

The new language of the item provides that installation instructions for products whose manufacture is completed at the jobsite must address the quality assurance program required by part 7640.0130, subp. 2, item D; ambient temperature during application; and actions necessary to facilitate curing or drying. It is reasonable to require the instructions to include information on these items because this information is essential for proper completion of the manufacturing process for insulation products. Requiring a discussion of ambient temperature and curing in the instructions is not burdensome because the manufacturer should know the range of conditions that will assure suitable completion of the manufacturing process on site.

Part 7640.0180, INCORPORATIONS BY REFERENCE AND CITATIONS,
subp. 2, ASTM

The Department proposes to amend this subpart to update the references to ASTM standards; to add six new references to ASTM standards (renumbered items D, K, U, V, W and X); and to delete one reference (existing item Q). These revisions update the list of ASTM standards to conform with the most recent versions published by ASTM. This is reasonable because it brings the requirements of Minn. Rules ch. 7640 up to date with current knowledge in the thermal insulation field.

Part 7640.0180, INCORPORATIONS BY REFERENCE AND CITATIONS,
subp. 3, Other incorporation and citations

The Department proposes to amend this subpart to modify items A and B and to add new items K and L.

The Department has modified item K to change the reference to the ASHRAE Handbook of Fundamentals to make it specific to Chapter 22, Tables 1 and 2 of that document. This modification is reasonable because it makes the incorporation by reference consistent with the reference to the ASHRAE Handbook cited in part 7640.0130, subp. 7, item C.

The Department proposes to modify the reference in item C to delete the reference to the Federal Trade Commission and to add the title of the regulations set forth in 16 C.F.R. Part 460, specifically, "Labeling and Advertising of Home Insulation." This change is reasonable because it clarifies the reference for the reader.

The Department proposes to add new items K and L to reference 40 C.F.R. Part 248 and the Building Foundation Design Handbook of the University of Minnesota Underground Space Center. These additions are reasonable because these documents are incorporated by reference in parts 7640.0160, subp. 2, item F and in part 7640.0140, subp. 1, item A, respectively.

Repealer, part 7640.0110, APPLICABILITY, subp. 5,
Installation, generally

The Department proposes to repeal part 7640.0110, subp. 5, which imposes certain requirements for installation insulation. It is reasonable to repeal the first sentence of subpart 5 because it is redundant; part 7640.0160, subp. 2, item A contains identical language. As to the second sentence of the rule, the Department has proposed to insert the same requirements in part 7640.0160, subp. 2, item B. It is reasonable to move the language from the applicability section to part 7640.0160 because the requirements in the repealed language do not address the applicability of the rule but rather addresses product application. This change improves the clarity of the rules.

V. SMALL BUSINESS CONSIDERATIONS IN RULEMAKING

Minn. Stat. § 14.115, subd. 2 (1988) requires the Department, when proposing rules which may affect small businesses, to consider the following methods for reducing the impact on small businesses:

- (a) the establishment of less stringent compliance or reporting requirements for small businesses;

- (b) the establishment of less stringent schedules or deadlines for compliance or reporting requirements for small businesses;
- (c) the consolidation or simplification of compliance or reporting requirements for small businesses;
- (d) the establishment of performance standards for small businesses to replace design or operational standards required in the rule; and
- (e) the exemption of small businesses from any or all requirements of the rule.

The adoption of these rule amendments will affect small businesses in Minnesota. The Department has evaluated the effect of the proposed rules on small businesses and has considered each of the methods listed above for reducing the impact of the rules on small businesses.

Small businesses would benefit from the proposed amendments to Minn. Rules pts. 7640.0130 and 7640.0140 relating to cellulose spray applied insulation and insulation for exterior below ground use, respectively. New language is proposed to be added to Part 7640.0130, subp. 3, item B, clauses 5, 8, 9, and 10 which does not require testing of a cellulose spray-applied product if that product meets the respective requirements in loose fill form. The proposed rule will simplify some reporting requirements. Specifically, the language of part 7640.0140, subps. 1, 2, and 3 regarding insulation used in exterior below ground applications is considerably clarified so that filing for a product for this use is simplified.

Minn. Rules ch. 7640 requires performance standards for all insulation product types in conformance with Minn. Stat.

§ 14.115, subd. 2(d) (1988).

Minn. Stat. § 14.115, subd. 2(e) requires the Department to consider exempting small businesses from any or all requirements of the rules. In this regard, the proposed rule amendments modifies the definition of a manufacturer of insulation (at part 7640.120, subp. 17) to specifically exclude applicators, contractors, or fabricators of insulation materials who installs, applies, or uses insulation materials for their intended uses without changing the thermal or physical properties of the insulation material. However, since Minn. Stat. § 325F.19 broadly defines "industry members" to whom this rule must apply, the Department concludes that manufacturers who are small businesses cannot be exempted from any or all requirements of these statutes.

VI. ATTACHMENTS

The following attachments are incorporated by reference into this Statement of Need and Reasonableness:

1. ASTM C 578-87A, Standard Specification for Preformed, Cellular Polystyrene Thermal Insulation
2. A Survey of Minnesota Home Exterior Foundation Wall Insulation: Moisture Content and Thermal Performance, November, 1988; Executive Summary
3. Notes from the meeting to discuss revision of the Minnesota Insulation Standards Rules relating to exterior foundation wall insulation held on November 15, 1989.
4. Building Foundation Design Handbook; May, 1988; Table

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5. Letter from SPI, Polyurethane Foam Contractors Division, dated August 30, 1989
6. Code of Federal Regulations, title 40, part 248, Guideline for Federal Procurement of Building Products Containing Recovered Materials

VII. CONCLUSION

Based on the foregoing, the proposed amendments to Minn. Stat. ch. 7640 are both needed and reasonable.

Dated: Feb 23, 1990



TONY PERPICH
Commissioner

