

Minnesota Attorney General: Administrative Rules Proceedings

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MJM
2/4/92

RULE REVIEW CHECKLIST

File No. 1894
DATE RECEIVED 2-3-92
REVIEW DATE 2-12-92
DUE DATE 2/18/92
~~(DIS)~~APPROVED 2/12/92
WITHDRAWN _____

Docket No. 05 0009 0731
ADOPTED W/O HEARING _____
EMERGENCY RULE _____
TO REVISOR ON 2/4/92
REVISOR (DIS)APPROVED 2-4-92
FILED W/SEC. OF STATE 2-13-92
RETURNED TO AGENCY 2-13-92

✓ Rule as adopted (4 copies)

✓ Notice to Solicit Outside Information/Opinion (if applicable)
August 12, 1991 Date published in State Register
✓ Comments

_____ Petition for Adoption of a Rule

✓ Board's Authorizing Resolution
_____ Date adopted

✓ Proposed Rule
_____ Revisor's Certificate

✓ Notice of Intent to Adopt Rule
325F.20 Statutory Authority
No Statement Small Business Statement
_____ Expenditure of public money statement
~~10-28-91~~ 11-18-91 Signature

✓ Statement of Need and Reasonableness (if applicable)
✓ Small Business Statement
_____ Fees - § 16A.128

✓ Affidavit of Mailing Notice of Intent to Adopt Rule
December 6, 1991 Dated (30)/25 days before adoption
✓ Notice attached indicates it is attached
_____ Copy of rule or summary attached

✓ Publication in State Register
December 9, 1991 Date (30)/25 days before adoption

✓ 180-day deadline from:
✓ Effective date of law requiring rule (14.12) (both rules) ~~amendments don't apply~~
✓ ~~end of comment period~~ (§ 14.26) (rules without hearing)
_____ effective date of statutory authority (§ 14.29) (emergency rules)

_____ Resolution Adopting
_____ ~~Date adopted~~

✓ Findings of Fact, Conclusions & Order Adopting
January 24, 1992 Date

✓ Written Requests, Submissions or Comments

✓ Declaration of Attorney
Brent Vanderlinden Name of SAAG representing agency

_____ Notice of Submission to Attorney General (if applicable)

_____ Affidavit of Mailing Notice to Attorney General (if applicable)

Rules agl

STATE OF MINNESOTA

DEPARTMENT OF PUBLIC SERVICE

In the Matter of the Proposed Amendments to Rules of the Minnesota Department of Public Service amending the State Building Code regarding Thermal Insulation Standards (Minn. Rules ch. 7640).

STATEMENT OF NEED AND REASONABLENESS

November, 1991

I. INTRODUCTION

The Commissioner of the Minnesota Department of Public Service (department) proposes to adopt amendments to *Minnesota Rules* Chapter 7640, known as the Minnesota Thermal Insulation Standards.

The principal rule changes proposed include incorporation by reference of a new ASTM standard for spray applied cellulose and practice for installation of radiant barrier systems. Also proposed are changes to reference recently revised ASTM standards. In addition, the department proposes changes to add an accreditation agency for approving laboratories and modifying the required timing for testing.

The department began the present rule notification process on 12 August 1991, by publishing a note in the State Register (16 S.R. 272) soliciting opinions and information from the public on the rules regarding the Minnesota Thermal Insulation Standards.

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 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 principals, approved tests, and professional judgment. For purpose of this subdivision, the commissioner may adopt emergency rule, which may remain in effect for 360 days.

III. STATEMENT OF NEED

Minn. Stat. 14 (1988) requires the department to make an affirmative presentation of facts establishing the need for and reasonableness of the rules as proposed. Discussion of the need for the rule amendments follows. Although the implementation of the Minnesota Thermal Insulation Standards is going smoothly, the department believes that certain improvements are needed and is thus proposing these amendments.

Chapter 7640 needs to be changed because ASTM has both revised standards already referenced by Ch. 7640 and has adopted additional new standards that pertain to products already regulated by Ch. 7640. The Commissioner's authority to adopt these rule amendments cited above requires that specifications and any amendments to them shall conform as far as practical to federal standards or other standards generally accepted and in use throughout the United States. Thus, the department needs to adopt the current versions of ASTM standards for products regulated by Ch. 7640 that are revised or new.

Another change needed is to recognize the validity of an equivalent accreditation agency for approving laboratories. Yet another change needed is to modify the language specifying dates required for testing to assure that the intent of this chapter (e.g., for recent test results) is met. Finally, a change is needed to avoid conflict with Federal law preempting regulation of manufactured homes.

IV. STATEMENT OF REASONABLENESS

Minnesota Statutes Ch. 14 requires the department to make an affirmative presentation of facts establishing the reasonableness of the proposed rules. 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. Discussion of the need and reasonableness for the proposed rule amendments follows.

A. Part 7640.0110, APPLICABILITY

Subpart 1, Types of residential products covered

The department proposes to delete the phrase "insulation used in new mobile homes assembled outside Minnesota" from the list of insulation products not covered by chapter 7640.

This deletion was recommended by Randy E. Vogt (Department of Administration, Building Codes and Standards Division) in a November 7, 1991 letter to the department (Attachment 1). Mr. Vogt indicates that inclusion of this phrase may be contrary to the National Manufactured Housing Construction and Safety Standards Act of 1974 and *Minn. Stat.* 327.32 sec. 604(d). The deletion is needed to avoid possible conflict of this chapter with both Federal and State statutes. The deletion is reasonable because thermal insulation in new manufactured homes is already regulated by the previously cited Federal statute.

B. Part 7640.0120, DEFINITIONS

Subp. 3, Approved Laboratory

The department proposes to add item C to the list of accreditation agencies that are acceptable for accrediting laboratory testing facilities of approved laboratories. The accreditation agency added is the Standards Council of Canada.

This change is needed because Canadian manufacturers of thermal insulation products may use laboratories accredited by this agency. The addition is reasonable because the technical requirements under the Standards Council of Canada and the NVLAP programs are essentially the same (see attachment 2).

Subp. 26, UBC

The department proposes to repeal the definition of "UBC" because it is only used once in chapter 7640, and the department is proposing to delete that single use (see item B, below). This change is both needed and reasonable to simplify the rules for the convenience of users of this chapter.

C. Part 7640.0130, INSULATION MATERIAL STANDARDS, subp. 2, General testing requirements, Item B, Testing

Subitem 1

The department proposes to delete the existing subitem 1 and the date identified in the existing subitem 2, thereby removing the dates identified. The department further proposes to replace these fixed dates for testing with the words "within two years of the filing of the initial report required by part 7640.0150."

The specific date requirements included when this chapter was first adopted in 1986 intended to assure that only recent testing results were provided. As time has progressed, however, the intent is no longer met because the dates were fixed. The proposed change is to maintain the original intent of this part to require recent testing results.

The proposed change is reasonable because a manufacturer with a new thermal insulation product would have current (less than 2 years old) test results for the product.

Subitems 3, 4 and 5 are renumbered for numbering consistency.

Subitem 4

Subitem 4 is proposed to be modified by simply spelling out "Uniform Building Code." This change is both needed and reasonable for the convenience of the users of this chapter.

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

Item B, spray-applied

The department proposes to delete much of the specific requirements of this item and in their place adopt the new ASTM C 1194, Standard Specification for Self-Supported Spray Applied Cellulosic Thermal/Acoustical Insulation. It is proposed to retain three elements of the existing item relating to the acceptability of tests performed on loose-fill product.

In part, the need to adopt this national consensus standard appears in the Commissioner's authority to adopt these rule amendments that specifications and any amendments to them shall conform as far as practical to federal standards or other standards generally accepted and in use throughout the United States. Correspondence received from International Cellulose Corporation (see Attachment 3) states another need for this change. Spray type cellulosic materials need to be self supporting to assure that the product will maintain integrity and stay in place without settling or falling, leaving uninsulated areas. The proposed change is reasonable because the cellulose spray products that currently have completed filings as required by part 7670.0150 meet this new standard.

The replacement of the references for the testing of corrosion, odor emission and fungi resistance is needed because the standards referenced for spray cellulose is proposed to be replaced. These changes are reasonable because the tests in the proposed references are essentially identical to those in the references deleted.

E. Part 7640.0130, INSULATION MATERIALS STANDARDS, subd. 8, Other Insulation

Item E, odor emission

The department proposes to add ASTM C 553 section 15 as an acceptable test for odor emission for "other" insulation products. Standard C 553 is the standard specification for mineral fiber thermal insulation.

The addition of this standard is needed to be able to test the odor of mineral fiber-like products that fall into the "other" insulation category. This change is reasonable because ASTM C 553 is already incorporated by this rule for use with mineral fiber insulation products.

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

Item E, Installation of radiant barrier systems

The department proposes to add a requirement that installation of radiant barrier

systems be in accordance with the new ASTM C 1158, Practice for Use and Installation of Radiant Barrier Systems (RBS) in Building Construction.

In part, the need to adopt this national consensus standard appears in the Commissioner's authority to adopt these rule amendments that specifications and any amendments to them shall conform as far as practical to federal standards or other standards generally accepted and in use throughout the United States. This new requirement is needed to assure that radiant barrier systems are installed correctly.

The change is reasonable because the standard only requires the installer to install the product for safe and effective operation. It is also reasonable because this part also requires installers of cellulose and mineral fiber in loose-fill form and installers of reflective insulation to follow similar ASTM installation practices.

Items F and G are renumbered for numbering consistency.

G. Part 7640.0180, INCORPERATIONS BY REFERENCE AND CITATIONS

Subpart 2, ASTM references

The department proposes to amend this subpart to update the references to ASTM standards (items A, C, E, F, G, L, M, N, P, R, and S) and to add references to two new ASTM standards (proposed items V and W). These revisions update the list of ASTM standards to conform with the most recent versions published by ASTM. In addition, the department proposes to delete references to two standards (existing items Y and Z).

The need to update existing references and to adopt new references appears in the Commissioner's authority to adopt these rule amendments that specifications and any amendments to them shall conform as far as practical to federal standards or other standards generally accepted and in use throughout the United States.

These changes are reasonable because they bring the requirements of *Minn. Rules* ch. 7640 up-to-date with current knowledge and practice in the thermal insulation field.

Existing items Y and Z are deleted because the only references to these standards

in this chapter are deleted by the current proposed amendment to part 7640.0130, subpart 2, item B (spray cellulose). This change is both needed and reasonable for clarification of this chapter for the convenience of users.

Subpart 4, Availability

The department proposes to delete the James J. Hill reference library from the list of locations where the standards incorporated by reference by this chapter are available.

This change is both needed and reasonable because we understand the James J. Hill reference library no longer carries ASTM standards. The change is to assure that the listing of availability of standards adopted by reference is correct.

V. SMALL BUSINESS CONSIDERATIONS IN RULEMAKING

Minnesota Statue § 14.115, subdivision 2 (1988) requires the department, when proposing rules that may affect small business, to consider the following methods for reducing the impact on small businesses:

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

(b) the establishment of less stringent schedules or deadlines for compliance or reporting requirements for small business;

(c) the consolidation or simplification of compliance or reporting requirements for small business;

(d) the establishment of performance standards for small businesses to replace design or operational standards required in the rule;

(e) the exemption of small businesses from any or all requirements of the rule. The adoption of these rule amendments will not 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.

Concerning item (a) above, the department has adopted national consensus ASTM standards throughout chapter 7640. Less stringent standards could not be adopted for small businesses because the department's enabling legislation requires that standards

adopted shall conform as far as practical to federal standards or other standards generally accepted and in use throughout the United States.

Regarding Item (b) above, part 7640.0150 contains reporting requirements, but these are not different for small business. One deadline requirement in Chapter 7640 is the annual filing due June 1; the other is that the initial report be filed 30 days before the product is offered for sale in the State. In the administration of this chapter the department has simplified both initial and annual filing procedures for all manufacturers. For the annual filing procedure, the department provides each manufacturer a pre-printed form listing the product. If there are no changes to a product, the manufacturer simply signs, dates and returns the form. Thus, the reporting requirements have been made less stringent to the extent possible, and it may not be possible to make further reductions in stringency for small businesses without compromising the effectiveness of the statutory mandate. The annual filing deadline date is not at all stringent because all that is required by manufacturers is to sign and return forms provided (generally with 30 day lead time) by the department. Similarly, the 30 day deadline for the initial report is not stringent because the information required in this report is generally available at least 30 days before products are offered for sale. Thus, less stringent schedules for small businesses would not reduce the impact on these business.

Minn. Rules ch. 7640 requires performance standards for all insulation product types in conformance with *Minn. Stat.* § 14.115, subd. 2(d) (1988).

In regard to item (e) above, 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) November 7 1991 letter from Randy E. Vogt, Department of Administration, Building Codes and Standards Division to Bruce Nelson, Department of Public Service.

2) Memorandum of Understanding Between the Standards Council of Canada and National Institute of Standards and Technology, September 7, 1988.

3) October 8 1991 Letter from International Cellulose Corporation.

VII. CONCLUSION

Based on the foregoing, the proposed amendments to Minnesota Rules Chapter 7640 are both needed and reasonable.

Krista L. Sanda

Krista L. Sanda, Commissioner
Department of Public Service

11/18/91

Dated

ATTACHMENT "1"

STATE OF MINNESOTA
Department of Administration

BUILDING CODES AND STANDARDS

408 Metro Square
7th and Robert Sts.
Saint Paul, Minnesota 55101
Phone: (612) 296-4639
FAX: (612) 297-1973

November 7, 1991

RECEIVED
NOV 8 1991
DEPT. OF PUBLIC SERVICE

Mr. Bruce Nelson
Minnesota Department of Public Service
Energy Information Center
150 E. Kellogg Boulevard #790
St. Paul, MN 55101

RE: Chapter 7640, Thermal Insulation Standards

Dear Mr. Nelson:

Chapter 7640 "Thermal Insulation Standards" appears to have wording that is either in violation of the National Manufactured Housing Construction and Safety Standards Act of 1974 and/or Minnesota Statute 327.32. Section 604(d) of "The Act" states:

> "Whenever a Federal manufactured home construction and safety standard established under this title is in effect, no State or political subdivision of a State shall have any authority either to establish, or to continue to effect, with respect to any manufactured home covered, any standards regarding construction or safety applicable to the same aspect of performance of such manufactured home which is not identical to the Federal manufactured home construction and safety standard."

Minnesota Statute 327.32 in effect for homes bearing a construction seal manufactured after July 1, 1972 stated in Subdivision 5:

> "Effect of compliance. No manufactured home which bears a seal or label as provided in this section shall be required by any agency or political subdivision of this state to comply with any other building, plumbing, heating, or electrical code or any construction standards other than the manufactured home building code nor be subject to any other state or local building inspection, except as the commissioner shall, by rule, provide in the case of alterations, manufactured home accessory structures and installations, or except as otherwise provided by federal or state law. No manufactured home installation or manufactured

> home accessory structure shall be required by any agency or political subdivision of this state to comply with any installation standards other than those adopted and promulgated by the commissioner. Nothing in this section shall be construed to inhibit the application of zoning, subdivision, architectural, or esthetic requirements pursuant to chapter 462."

Chapter 7640.0100 Subpart 1, last paragraph contains wording:

> "Not included are insulation used in manufactured appliances, windows, and doors, and insulation used in new manufactured homes assembled outside Minnesota."

The part "new manufactured homes" should be eliminated as the Minnesota Energy Code would not apply to manufactured homes built after July 1, 1972 bearing a State Construction Seal or HUD Construction Label. The part "manufactured home assembled outside Minnesota" would also be incorrect.

Please review the wording in Chapter 7640 for changes to meet state and federal laws. If you have any questions, please contact me at 612/296-9927.

Respectfully,
BUILDING CODES AND STANDARDS DIVISION

Randy E. Vogt
Building Codes Representative

REV/kk

ATTACHMENT "2"

RECEIVED
SEP 30 1991
DEPT. OF PUBLIC SERVICE

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
STANDARDS COUNCIL OF CANADA
AND
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
UNITED STATES OF AMERICA

I. Purpose

The purpose of this Memorandum of Understanding (MOU) is to provide for the mutual recognition, by the Parties to this MOU, of the testing laboratory accreditation systems administered by the Standards Council of Canada (SCC) for testing laboratories located in Canada and by the National Institute Of Standards and Technology (NIST) for testing laboratories located in the territorial United States of America. This MOU does not cover accreditation of calibration laboratories.

II. Background

1. Within their respective jurisdictions, SCC and NIST operate ongoing testing laboratory accreditation systems to grant formal recognition to testing laboratories that are found competent to carry out specific tests.

2. Rather than attempt to accredit testing laboratories in each other's country, it seems appropriate to find a way for each of the Parties to recognize the testing laboratory accreditations granted by the other's testing laboratory accreditation system. This MOU has been devised for this purpose. Such an MOU is in harmony with the provisions of the General Agreement on Tariffs and Trade (GATT) Agreement on Technical Barriers to Trade.

3. The testing laboratory accreditation system administered by each of the Parties is voluntary in the sense that participation by the testing laboratories being accredited is not mandated by law in either country. SCC and NIST base their decisions to accredit a testing laboratory on broadly similar criteria but the implementation of these is somewhat different in each country. Staff members responsible for the administration of each system have analyzed the evaluation criteria and operating procedures used in each system and have participated in assessment visits to testing laboratories seeking accreditation under each other's system.

IV. Harmonization

The Parties agree to cooperate in eliminating or minimizing differences between the systems within five years of the signing of this MOU.

V. Resolution of Complaints

Each Party will investigate complaints about its accredited testing laboratories that the other Party brings forward and the Parties will work together to seek satisfactory resolution of such complaints.

VI. Duration and Termination

This MOU will become effective on the date of signature. It will remain in effect for a period of five (5) years and may be extended by mutual consent. This MOU may be terminated at any time by either Party upon twelve (12) months written notice to the other Party.

APPROVED AND ACCEPTED FOR THE STANDARDS COUNCIL OF CANADA

By: _____

Title: Executive Director
Standards Council of Canada

Date: 88.9.7

Designated Liaison Officer

Manager, Testing Program
STANDARDS COUNCIL OF CANADA
Ottawa, Ontario K1P 6N7
Canada
Telephone 613-238-3222

APPROVED AND ACCEPTED FOR THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

By: _____

Title: Director
National Institute Of
Standards and Technology

Date: Sept. 7, 1988

Designated Liaison Officer

Manager, NVLAP
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
Gaithersburg, MD 20899
Telephone 301-975-4017

5. Laboratory Records

NIST requires retention of data for at least one year with the option to extend this period. SCC does not specify a minimum retention period but recommends a minimum of three years.

6. Test Reports

The SCC criteria do not specify the contents of test reports, but this element is covered by the detailed checklists used to prepare for and conduct the on-site assessment. NIST requires specified documentation in the report, and requires designated "approved signatories" for each laboratory. SCC checks the qualifications of the staff members who issue test reports and interviews each of them.

7. Proficiency Testing

Proficiency testing programs are encouraged and supported in practice, under the SCC program. Proficiency testing is obligatory in each program now operated by NIST.

8. On-Site Visits

NIST uses an assessor, usually acting alone, who is expert in the field of testing for which accreditation is to be granted; if there is more than one field involved, the assessors act independently and may visit the laboratory at different times. SCC uses a team approach with a staff member as leader-coordinator, a representative of the Testing Accreditation Sub-Committee for managerial and financial matters, and as many technical experts as are required for the scope of testing to be accredited. While a typical NIST assessment visit lasts two days and could take longer, SCC usually takes only one day and not more than one and a half days. The NIST assessor leaves a signed copy of an on-site assessment report, while SCC sends a written report later which lists the items discussed at the exit interview.

NIST formally requests a response by the laboratory within 30 days as to the corrective actions/plans for each itemized deficiency. A lack of response is followed up and failure to act in a reasonable time leads to denial, revocation or lapse of accreditation. SCC requests a schedule for follow-up actions to correct non-compliances and the staff member follows up. When the assessors agree on the resolution of deficiencies, a final report of the assessment is submitted to the Testing Accreditation Sub-Committee (TASC).

9. Accreditation Process

SCC has a five stage process:

(1) The Assessment Team approves the Evaluation Report and recommends accreditation to TASC; (2) TASC reviews the report, the application and any other relevant documents and recommends accreditation to the Advisory

ATTACHMENT "3"

INTERNATIONAL CELLULOSE CORPORATION
Innovative Fiber Technology

October 8, 1991

OCT 1 1991
DEPT. OF PUBLIC SERVICE

Mr. Bruce Nelson
Minnesota Energy Commission
900 American Center
150 E. Kellogg Blvd.
St. Paul, MN 55101

Re: ASTM C-1149 - Standard Specification for Self-Supported Spray Applied Cellulose Thermal/Acoustical Insulation

Dear Bruce,

As the title of the standard indicates, all spray type cellulose materials should be self-supporting and evaluated in all test procedures in the form and consistency of the end product.

The rational behind this "self-supporting" requirement is the potential that some contractors may apply product less than full cavity thick, as a result, the product could not depend upon the wall board on each side as support.

If the product demonstrates the ability to support its own weight without support on both sides during the tests, it is demonstrating the ability to maintain integrity and remain in place without settling or falling, leaving some uninsulated areas.

Hope the above explanation will be of some help to you. If you need further information, please let me know.

Regards,

INTERNATIONAL CELLULOSE CORPORATION

Harold Boyer
V.P. Technical/Engineering

HB/gh

P.O. BOX 450006 • HOUSTON, TX. 77245-0006 • 713/433-6701 • FAX 713 433-2029

DEPARTMENT: Office of the Attorney General **STATE OF MINNESOTA**

OFFICE MEMORANDUM

DATE: February 13, 1992

TO: BRUCE D. NELSON
Senior Engineer
Department of Public Service, Energy Division
900 American Center Building
150 East Kellogg Boulevard
St. Paul

FROM: MARY JO MURRAY
Special Assistant Attorney General
525 Park Street, Suite 500 (55103)

PHONE: 296-3258

SUBJECT: In the Matter of the Adopted Rule Relating to Thermal Insulation Standards

The above-referenced rule has been approved as to its legality by the Attorney General on February 12, 1992.

Enclosed is your copy of the approved rule. This office has already filed two copies with the Secretary of State, who will forward one copy to the Revisor of Statutes. The fourth is being retained by this division of the Attorney General's Office for its records.

Also enclosed are any petitions, requests, submissions or comments along with any extra copies of documents which you submitted to the Attorney General.

Your next step is to arrange for publication of the Notice of Adoption in the State Register. In a day or two, you should receive from the Revisor's Office three copies of the notice of adoption of your rule. You should submit two copies of the Notice of Adoption to the State Register for publication. A permanent rule without a hearing does not become effective until five days after a notice of adoption is published in the State Register in accordance with Minn. Stat. § 14.27. An emergency rule becomes effective five working days after approval by the Attorney General; however, the agency must publish a notice in the State Register in accordance with Minn. Stat. § 14.34.

If you have any questions in this regard, please contact me.

MJM:jj
Enclosures
cc: Brent Vanderlinden
William Brown, Chief Judge
MaryAnn Hruby

Department of Public Service

Adopted Permanent Rules Relating to Thermal Insulation Standards

Rules as Adopted

7640.0110 APPLICABILITY.

Subpart 1. **Types of residential insulation products covered.** This chapter applies to insulation products for use in residential buildings. These include insulation for walls, ceilings, floors, foundation walls, pipe insulation, duct insulation, and retrofit water heater blanket insulation.

Not included are insulation used in manufactured appliances, windows, and doors.

[For text of subps 2 to 4, see M.R.]

7640.0120 DEFINITIONS.

[For text of subps 1 and 2, see M.R.]

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 (NVLAP), Gaithersburg, Maryland;

B. American Association for Laboratory Accreditation, Gaithersburg, Maryland; or

C. Standards Council of Canada, Ottawa, Ontario, Canada.

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.

[For text of subps 4 to 25, see M.R.]

Subp. 26. [See repealer.]

Approved by Revisor

7640.0130 INSULATION MATERIALS STANDARDS.

[For text of subpart 1, see M.R.]

Subp. 2. **General testing requirements.** General testing requirements for regulated thermal insulation materials in this part are as follows:

[For text of item A, see M.R.]

B. All regulated thermal insulation materials must be tested for compliance with the standards according to subitems (1) to (4).

(1) Required testing must be performed by an approved laboratory within two years of the filing of the initial report required by part 7640.0150.

(2) The thermal insulation material chosen for testing must be representative of material produced by the manufacturer during normal production runs.

(3) Testing for each type of insulation must be performed in accordance with the methods specified in subparts 3 to 8.

(4) Insulation must have flammability characteristics in accordance with the Uniform Building Code, sections 1712 and 1713, for its intended uses.

[For text of items C and D, see M.R.]

Subp. 3. **Cellulose insulation.**

[For text of item A, see M.R.]

B. Cellulose fiber spray-applied must comply with ASTM C 1149.

(1) If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.8, for corrosion, then a test of the product in spray-applied form is unnecessary.

(2) ~~If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.10, for odor emission, then a test of the product in spray-applied form is unnecessary.~~

~~(3)~~ If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.7, for fungi resistance, then a test of the product in spray-applied form is unnecessary.

Approved
by Revisor _____

[For text of subps 4 to 7, see M.R.]

Subp. 8. **Other insulation.** Insulation other than insulation specified in subparts 1 to 7 must comply with the requirements in items A to F.

[For text of items A to D, see M.R.]

E. 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, or ASTM C 553, section 15.

[For text of item F, see M.R.]

7640.0160 APPLICATION AND INSTALLATION STANDARDS.

[For text of subpart 1, see M.R.]

Subp. 2. **Application and inspection.**

[For text of items A to D, see M.R.]

E. Installation of radiant barrier systems must be in conformance with ASTM C 1158.

F. Installers of urea formaldehyde foam insulation shall conform with Minnesota Statutes, section 325F.18, and Minnesota Rules, parts 4620.1600 to 4620.2100.

G. State and local agencies using appropriated federal funds and persons contracting with state or local agencies with respect to work performed under the contracts shall comply with Code of Federal Regulations, title 40, part 248, Guideline for Federal Procurement of Building Products Containing Recovered Materials.

[For text of subp 3, see M.R.]

7640.0180 INCORPORATIONS BY REFERENCE AND CITATIONS.

[For text of subpart 1, see M.R.]

Subp. 2. **ASTM.** The following ASTM standards are incorporated by reference:

A. ASTM C 168-90, Terminology Relating to Thermal Insulating Materials.

[For text of item B, see M.R.]

C. ASTM C 236-89, Standard Test Method for Steady State Thermal Performance of Building Assemblies by Means of a

Approved
by Revisor _____

Guarded Hot Box.

[For text of item D, see M.R.]

E. ASTM C 516-80 (reapproved 1990), Standard Specification for Vermiculite Loose-Fill Thermal Insulation.

F. ASTM C 518-91, Standard Test Method for Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

G. ASTM C 549-81 (reapproved 1986), Standard Specification for Perlite Loose Fill Insulation.

[For text of items H to K, see M.R.]

L. ASTM C 727-90, Standard Recommended Practice for Use of Reflective Insulation in Building Constructions.

M. ASTM C 739-91, Standard Specification for Cellulosic Fiber (wood-base) Loose-Fill Thermal Insulation.

N. ASTM C 764-91, Standard Specification for Mineral Fiber Loose-Fill Thermal Insulation.

[For text of item O, see M.R.]

P. ASTM C 976-90, Standard Test Method for Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box.

[For text of item Q, see M.R.]

R. ASTM C 1015-84 (reapproved 1990), Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation.

S. ASTM C 1029-90, Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation.

[For text of items T and U, see M.R.]

V. ASTM C 1149-90, Specification for Self-Supported Spray-Applied Cellulosic Thermal, or Acoustical Insulation, or Both.

W. ASTM C 1158-90, Practice for Use and Installation of Radiant Barrier Systems (RBS) in Building Constructions.

X. ASTM D 2842-69 (reapproved 1975), Standard Test Method for Water Absorption of Rigid Cellular Plastics.

Y. ASTM E 84-84 Revision A, Surface Burning Characteristics of Building Materials.

Approved by Revisor _____

Z. ASTM E 408-71 (reapproved 1985), Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection Meter Techniques.

[For text of subp 2a, see M.R.]

Subp. 3. **Other incorporation and citations.** The following non ASTM standards are also incorporated by reference:

[For text of items A to E, see M.R.]

F. Uniform Building Code (1988 Edition), by the International Conference of Building Officials.

[For text of items G to L, see M.R.]

Subp. 4. **Availability.** The standards incorporated by reference are available for public inspection as follows:

A. All documents incorporated by reference in this chapter are available at the Minnesota State Law Library.

[For text of item B, see M.R.]

REPEALER. Minnesota Rules, part 7640.0120, subpart 26, is repealed.

Approved
by Revisor _____

APPROVED AS TO FORM AND LEGALITY
Feb 12 92
HUBERT H. HUMPHREY, III
ATTORNEY GENERAL
BY _____
ASSISTANT ATTORNEY GENERAL

STATE OF MINNESOTA
DEPARTMENT OF STATE
FILED

FEB 13 1992

Joan Anderson Growe
Secretary of State

9:30 AM
PRB

Stat Authority

325F. 20

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.

325F. 21 subd 1 and 2 Testing of Insulation

Upon the adoption of specifications under section 325F. 20 all insulation ...

End of comment period January 16, 1992

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

DECLARATION OF
COUNSEL

I, Brent Vanderlinden, Special Assistant Attorney General, do hereby declare that I have examined the above-captioned rule, and the supporting rulemaking record, and that, based on my examination, the Administrative Procedure Act and Minnesota Rules, chapter 2010 have been followed. Any exceptions are listed below. For Attorney General billing purposes, the four-digit client code is 0730.

Dated: February 4, 1992.

Respectfully submitted,
HUBERT H. HUMPHREY, III
Attorney General

Brent Vanderlinden

BRENT VANDERLINDEN
Special Assistant
Attorney General

1100 Bremer Tower
Seventh Place and Minnesota St.
St. Paul, Minnesota 55101
(612) 296-8115

.ac4

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 1
To Patricia Nolte	From Brent Vanderlinden
Co.	Co. TED
Dept.	Phone #
Fax #	Fax #

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

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Special Assistant
Attorney General

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Seventh Place and Minnesota St.
St. Paul, Minnesota 55101
(612) 296-8115

.ac4

STATE OF MINNESOTA

OFFICE OF THE ATTORNEY GENERAL

HUBERT H. HUMPHREY, III
ATTORNEY GENERAL

BUSINESS REGULATION SECTION
1100 BREMER TOWER
SEVENTH PLACE & MINNESOTA ST.
ST. PAUL, MN 55101
TELEPHONE: (612) 296-9412
FACSIMILE: (612) 296-7438

January 31, 1992

Patricia Nolte
Legal Assistant
Public Finance Division
Suite 500
525 Park Street
St. Paul, Minnesota 55103

Re: In the Matter of the Proposed Amendments to Rules Governing Thermal Insulation Standards, Minn. Rules Chapter 7640

Dear Ms. Nolte:

On January 24, 1992, the Minnesota Department of Public Service adopted the above-captioned rules governing thermal insulation standards. Enclosed for your review are the following:

1. Rule Amendments as adopted (original and three copies).

2. Findings of Fact, Conclusions, and Order Adopting Rule Amendments (two copies).

3. Notice of Intent to Solicit Outside Opinion (16 S.R. 272, August 12, 1991).

4. Copies of written comments received pursuant to Notice of Intent to Solicit Outside Opinion.

5. Notice of Intent to Amend Rules Without a Public Hearing and Rules as Proposed (16 S.R. 1430, December 9, 1991).

6. Comments received pursuant to notice of intent to adopt rule amendments without a public hearing.

7. Notice of Intent to Amend Rules Without a Public Hearing, as mailed.

8. Affidavit of Mailing and mailing list.

9. Affidavit of Certificate of mailing list.

Equal Opportunity Employer

Printed on Recycled Paper

10. Affidavit of Additional Discretionary Notice.

11. Rules as proposed.

12. Statement of Need and Reasonableness.

13. Declaration of Counsel.

Sincerely,

Brent Vanderlinden

BRENT VANDERLINDEN
Special Assistant
Attorney General

BV:kkw:ac1

STATE OF MINNESOTA

DEPARTMENT OF PUBLIC SERVICE

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

FINDINGS OF FACT, CONCLUSIONS AND ORDER ADOPTING RULE WITHOUT PUBLIC HEARING

The above entitled matter came before Krista L. Sanda, Commissioner of the Department of Public Service, on January 24th, 1992. In accordance with statutory requirements regarding adoption of noncontroversial rules, after considering the Statement of Need and Reasonableness, after considering all of the evidence in the rulemaking record, the Commissioner hereby adopts the following Findings of Fact, Conclusions and Order:

FINDINGS OF FACT

(1) 1. Notice of the Department of Public Service's intent to adopt the above-entitled rule amendments without a public hearing was published in the State Register on 9 December, 1991 (16 S.R. 1430), and was sent by United States mail to all persons on the list maintained by the Department pursuant to Minn. Stat. §§ 14.14, subd. 1a and § 14.22 (1988) on 6 December, 1991. In accordance with Minn. Stat. § 14.115 (1988), additional discretionary notice was mailed to thermal insulation manufacturers in order to provide an opportunity for small businesses to participate in the rulemaking process.

(2) 2. The Statement of Need and Reasonableness was prepared prior to mailing and publication of the notice and was made available to the public.

(4) 3. All persons were given the opportunity to submit comment on the rule amendments for 30 days after notice of proposed rulemaking. The 30 day comment period expired on January 16, 1992.

4. During the comment period, agency received zero (0) requests for a public hearing. Therefore, the agency did not receive requests for a public hearing from 25 or more persons which were not withdrawn.

5. Zero (0) requests for notice of submission to the Attorney General were received by the Department.

6. The Department received one written comment following publication of the proposed rules. The department finds that the following modification to the proposed rule amendments are justified by the record in this proceeding:

Part 7640.0130, subp. 2, Cellulose fiber spray-applied, item 2

The department proposed to retain the substance of this item while adopting the new ASTM standard for cellulose fiber spray-applied. The department received comment from T.C. Grether challenging the retention of this item. A reexamination of the ASTM standard test procedure for odor emission indicated that water is not added during this test procedure as previously supposed. The addition of water changes the composition, and possibly the odor emission characteristics of the product. Thus, a test of the spray-applied product for odor emission is needed even if a test of this characteristic has been performed on loose-fill product. Therefore, the department has modified the rule as proposed to delete this item.

The modification does not constitute a substantial change because it does not introduce new subject matter into the rule nor does it make a major substantive change that was not raised by the proposed rule as originally noticed in such a way as to invite reaction.

7. The Department adopts the Statement of Need and Reasonableness, in its entirety, as the factual basis for the proposed rules. The Department hearby incorporates the Statement of Need and Reasonableness into these findings.

8. The above-captioned rule amendments are needed and reasonable.

CONCLUSIONS

1. The Minnesota Department of Public Service duly acquired and has jurisdiction over this proceeding.

2. The Department published and served due, timely, and adequate notice of the intent to adopt the rules without a public hearing.

3. All relevant legal and procedural requirements of statute and rule have been complied with.

ORDER

NOW, THEREFORE, IT IS ORDERED that the attached amendments to rules amending the State building code regarding heat loss, illumination and climate control are adopted this 24th day of January, 1992, pursuant to authority vested in me by Minn. Stat. §§ 325F.20 subd. 1 and 325F.21 subdivisions 1 and 2.

(9)

Krista L. Sanda

Krista L. Sanda, Commissioner
Department of Public Service

STATE OF MINNESOTA

DEPARTMENT OF PUBLIC SERVICE

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

FINDINGS OF FACT, CONCLUSIONS AND ORDER ADOPTING RULE WITHOUT PUBLIC HEARING

The above entitled matter came before Krista L. Sanda, Commissioner of the Department of Public Service, on January 24th, 1992. In accordance with statutory requirements regarding adoption of noncontroversial rules, after considering the Statement of Need and Reasonableness, after considering all of the evidence in the rulemaking record, the Commissioner hereby adopts the following Findings of Fact, Conclusions and Order:

FINDINGS OF FACT

1. Notice of the Department of Public Service's intent to adopt the above-entitled rule amendments without a public hearing was published in the State Register on 9 December, 1991 (16 S.R. 1430), and was sent by United States mail to all persons on the list maintained by the Department pursuant to Minn. Stat. §§ 14.14, subd. 1a and § 14.22 (1988) on 6 December, 1991. In accordance with Minn. Stat. § 14.115 (1988), additional discretionary notice was mailed to thermal insulation manufacturers in order to provide an opportunity for small businesses to participate in the rulemaking process.

2. The Statement of Need and Reasonableness was prepared prior to mailing and publication of the notice and was made available to the public.

3. All persons were given the opportunity to submit comment on the rule amendments for 30 days after notice of proposed rulemaking. The 30 day comment period expired on January 16, 1992.

4. During the comment period, agency received zero (0) requests for a public hearing. Therefore, the agency did not receive requests for a public hearing from 25 or more persons which were not withdrawn.

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The modification does not constitute a substantial change because it does not introduce new subject matter into the rule nor does it make a major substantive change that was not raised by the proposed rule as originally noticed in such a way as to invite reaction.

7. The Department adopts the Statement of Need and Reasonableness, in its entirety, as the factual basis for the proposed rules. The Department hearby incorporates the Statement of Need and Reasonableness into these findings.

8. The above-captioned rule amendments are needed and reasonable.

CONCLUSIONS

1. The Minnesota Department of Public Service duly acquired and has jurisdiction over this proceeding.

2. The Department published and served due, timely, and adequate notice of the intent to adopt the rules without a public hearing.

3. All relevant legal and procedural requirements of statute and rule have been complied with.

ORDER

NOW, THEREFORE, IT IS ORDERED that the attached amendments to rules amending the State building code regarding heat loss, illumination and climate control are adopted this 24th day of January, 1992, pursuant to authority vested in me by Minn. Stat. §§ 325F.20 subd. 1 and 325F.21 subdivisions 1 and 2.

Krista L. Sanda

Krista L. Sanda, Commissioner
Department of Public Service

Public Employees Retirement Association

Notice of Meeting of Board of Trustees

The next regular monthly meeting of the Board of Trustees of the Public Employees Retirement Association (PERA) is scheduled to be held on Thursday, August 15, 1991, at 9:30 a.m. in the Association offices, 514 St. Peter Street, Suite 200—Skyway Level, St. Paul, Minnesota.

Department of Public Service

Energy Division

Notice of Intent to Solicit Outside Opinion Regarding Proposed Rule Amendments Governing Residential Thermal Insulation Standards

NOTICE IS HEREBY GIVEN that the Department of Public Service is seeking information or opinions from sources outside the agency in preparing proposed amendments to the *Minnesota Rules* Chapter 7640 governing Residential Thermal Insulation Standards. The adoption of this rule is authorized by *Minnesota Statutes*, section 325F.20 subdivision 1 and 325F.21 subdivisions 1 & 2.

Interested persons or groups may submit data or views on the subject of concern in writing or orally. Written statements should be addressed to:

Bruce D. Nelson, Senior Engineer
Department of Public Service, Energy Division
900 American Center Building, 150 East Kellogg Boulevard
St. Paul, Minnesota 55101
Phone: (612) 297-2313 fax (612) 297-1959

Oral statements will be received during regular business by telephone or in person at the above address.

All statements of information and opinions will be accepted until October 1, 1991. Any written material received by the State Department of Public Service shall become part of the rulemaking record to be submitted to the attorney general or administrative law judge in the event that the rule is adopted.

Dated: 31 July 1991

Krista L. Sanda
Commissioner

Office of the Secretary of State

Notice of Vacancies in Multi-Member Agencies

NOTICE IS HEREBY GIVEN to the public that vacancies have occurred in multi-member state agencies, pursuant to *Minnesota Statutes* 15.0597, subdivision 4. Application forms may be obtained from the Office of the Secretary of State, Open Appointments, 180 State Office Building, St. Paul, MN 55155-1299; (612) 297-5845, or in person at Room 174 of the State Office Building. More specific information about these vacancies may be obtained from the agencies listed below. The application deadline is September 3, 1991.

Consumer Advisory Council on Vocational Rehabilitation
390 N. Robert, 5th Floor, St. Paul 55101. 612-296-1822
Minnesota Statutes 129A.02

APPOINTING AUTHORITY: Commissioner of Jobs and Training. COMPENSATION: $55 per diem.
VACANCY: One member.

The council advises the assistant commissioner of vocational rehabilitation on policy matters relating to vocational rehabilitation services.

The council consists of a maximum of thirteen members, the majority shall be persons with a disability, current or former recipients of vocational rehabilitation services or who represent consumer/advocacy groups serving vocational rehabilitation clients. If qualified persons are available, one member is appointed from each of the following: business, labor, education, medicine, and private not for profit rehabilitation industry. Monthly meetings.

INTERNATIONAL CELLULOSE CORPORATION
Innovative Fiber Technology

RECEIVED
SEP 06 1991
DEPT. OF PUBLIC SERVICE

September 3, 1991

Mr. Bruce Nelson
MINNESOTA ENERGY OFFICE
150 E. Kellogg Blvd. Rm. 790
St. Paul, Minnesota 55101

Dear Bruce:

Enclosed is a copy of the ASTM-1149 that you requested.

Good to hear from you, please let me know if we can be of further help.

Yours truly,

INTERNATIONAL CELLULOSE CORPORATION

Harold Boyer
V.P. Technical Engineering

HB/ps

P.O. BOX 450006 • HOUSTON, TX. 77245-0006 • 713/433-6701 • FAX 713 433-2029

Designation: C 1149 - 90

Standard Specification for Self-Supported Spray Applied Cellulosic Thermal/Acoustical Insulation[1]

This standard is issued under the fixed designation C 1149; 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.

1. Scope

1.1 The specification covers the physical properties of self-supported spray applied cellulosic fibers intended for use as thermal or acoustical insulation, or both.

1.2 This specification covers chemically treated cellulosic materials intended for pneumatic applications where temperatures do not exceed 82.2°C (180°F) and where temperatures will routinely remain below 65.6°C (150°F).

1.2.1 *Type I*—Material applied with liquid adhesive and suitable for either exposed or enclosed applications.

1.2.2 *Type II*—Materials containing a dry adhesive that is activated by water during installation and intended only for enclosed or covered applications.

1.3 This is a material specification only and is not intended to deal with methods of application that are supplied by the manufacturer.

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

1.5 When the installation or use of insulation materials, accessories, and systems may pose safety or health problems, the manufacturer shall provide the user appropriate current information regarding any known problems associated with the recommended use of the company's products, and shall also recommend protective measures to be employed in their safe utilization. The user shall establish appropriate safety and health practices and determine the applicability of regulatory requirements prior to use.

1.6 *This standard does not purport to address the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

C 168 Terminology Relating to Thermal Insulating Materials[2]

C 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus[2]

C 236 Test Method for Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box[2]

C 518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus[2]

C 739 Specification for Cellulosic Fiber (Wood-Base) Loose-Fill Thermal Insulation[2]

C 976 Test Method for Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box[2]

E 84 Test Method for Surface Burning Characteristics of Building Materials[3]

E 605 Test Methods for Thickness and Density of Sprayed Fire-Resistive Material Applied to Structural Members[3]

E 736 Test Method for the Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members[3]

E 759 Test Method for Effect of Deflection of Sprayed Fire-Resistive Material Applied to Structural Members[3]

E 859 Test Method for Air Erosion of Sprayed Fire-Resistive Materials Applied to Structural Members[3]

3. Terminology

3.1 *Definitions*—Definitions in Terminology C 168 shall apply in this specification.

3.2 *Descriptions of Terms Specific to This Standard:*

3.2.1 *constant mass*—no change in successive weighings in excess of 0.5 % of specimen mass taken at 4-h intervals unless otherwise specified. Specimen should not be always increasing in weight or decreasing in weight.

3.2.2 *cured*—the state of the finished product after it has achieved constant mass.

3.2.3 *curing*—the process in which the liquid vehicle is removed. Normally achieved in ambient building conditions with forced air convection to hasten the evaporation process.

3.2.4 *prepared sample*—samples prepared in accordance with Section 5 and cured to constant mass prior to conducting the specific tests. The prepared samples, after reaching constant mass, as defined in 3.2.1, shall have a density within ±10 % of the manufacturer's recommended design density.

3.2.5 *self supporting*—a product that can be tested by the criteria imposed by this specification and that will require no support other than itself or the substrate to which it is attached.

3.2.6 *specimen*—definition of specimen as used in this specification shall be the same as that for *prepared sample* in 3.2.4.

3.2.7 *sprayed fiber*—chemically treated cellulosic materials, that are pneumatically conveyed and mixed with water or adhesive, or both, at the spray nozzle and become self-supporting when cured.

---

[1] This specification is under the jurisdiction of ASTM Committee C-16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.23 on Blanket and Loose Fill Insulation.

Current edition approved April 27, 1990. Published August 1990.

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

[3] *Annual Book of ASTM Standards*, Vol 04.07.

4. Physical Properties

4.1 *Materials and Manufacture:*

4.1.1 The basic material shall consist of virgin or recycled wood based cellulosic fiber.

4.1.2 Suitable chemicals shall be introduced to provide flame resistance, improved processing, adhesive/cohesive properties, and handling and application characteristics.

4.1.3 The basic material shall be processed into a form suitable for installation by pneumatic conveying equipment and the simultaneous mixing with liquid at the spray nozzle.

4.2 *Density*—Type I and Type II prepared samples shall be within ±10 % of the manufacturer's stated values when tested in accordance with 6.1.

4.3 *Thermal Resistance*—Type I and Type II prepared samples shall be within ±10 % of the manufacturer's stated values when tested in accordance with 6.4.

4.4 *Surface Burning Characteristics*—Type I and Type II prepared samples shall have a maximum flame spread rating of 25 and a maximum smoke developed rating of 50 when tested in accordance with 6.2.

4.5 *Adhesive/Cohesive Strength:*

4.5.1 *Type I*—The applied material shall 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 Test Method E 736.

4.5.2 *Type II*—The applied product shall have a minimum adhesive/cohesive bond strength per unit area of two times the weight of the material under the test plate when tested in accordance with Test Method E 736.

4.6 *Smoldering Combustion*—Type I and II products, when tested in accordance with 6.5, shall have a weight loss no greater than 15 % of the specimen weight and shall exhibit no evidence of flaming.

4.7 *Fungi Resistance*—Type I and Type II products, when tested in accordance with 6.6, shall not promote more fungal growth than the control in at least two of the three replicate specimens. (See Specification C 739, 1986 edition, paragraph 5.4.)

4.8 *Corrosion*—Type I and Type II products, when tested in accordance with 6.7, shall demonstrate no perforations in the 3-mil metal coupons when observed in close proximity to a 40-W appliance light bulb. Notches extending less than 3 mm into the coupon edge can be ignored.

4.9 *Moisture Vapor Absorption*—Moisture absorption of Type I and Type II products shall be no more than 15 % when tested in accordance with 6.8.

4.10 *Odor*—Type I and Type II applied products shall have no strong, objectionable odor when tested in accordance with 6.9 of this specification.

4.11 *Flame Resistance Permanency:*[4]

4.11.1 The importance of an insulation product's ability to maintain its fire safety characteristics is recognized. A task group is currently planning studies to ascertain if there is any long term deterioration of fire performance characteristics of cellulose insulation. To date, no substantive data has been presented to the task group suggesting degradation of fire resistance properties of cellulose insulation under typical conditions of use.

4.11.2 The goal of this task group is to continue development of a method evaluating the flame-resistance permanency of cellulose insulation. Should the need for a permanency test method be determined by this task group and a test method developed and finalized, it will become a part of this specification.

4.12 *Additional Characteristics for Type I Product:*

4.12.1 *Substrate Deflection*—Type I applied product shall not spall, crack, or delaminate when tested in accordance with 6.11 of this specification.

4.12.2 *Air Erosion*—Type I applied product shall pass the air erosion test described in 6.10 of this specification.

5. Specimen Preparation

5.1 Prepare specimens using manufacturer's recommended equipment and procedures and at manufacturer's maximum recommended thickness. Cure specimens to constant mass at 23 ± 3°C (73.4 ± 5.4°F) and 50 ± 5 % relative humidity unless otherwise specified in a specific test procedure. All specimens shall be within ±10 % of the manufacturer's recommended installation density.

6. Test Methods

6.1 *Density*—Density of each sample shall be determined in accordance with Test Methods E 605.

6.2 *Surface Burning Characteristics*—The surface burning characteristics shall be determined in accordance with Test Method E 84.

6.3 *Adhesive/Cohesive Strength*—The adhesive/cohesive strength of the spray applied fiber insulation shall be determined in accordance with Test Method E 736.

6.4 *Thermal Resistance*—Samples shall be prepared as in Section 5. The thermal resistance of the spray applied cellulosic fiber insulation shall be as determined by the average of four specimens tested in accordance with Test Methods C 177, C 518, C 236 or C 976. The referee method shall be Test Method C 177. When Test Method C 518 or C 177 is used, the surface irregularities will be trimmed to provide uniform thickness. When the hot box method is used, the test will be on the insulation component only or alternatively; if tested as a system, the results reported shall include all components of system evaluated.

6.5 *Smoldering Combustion:*

6.5.1 *Scope*—This test method determines the resistance of the insulation to smolder, under specific laboratory conditions.

6.5.2 *Significance and Use*—Insulation materials that rreadily smolder could have an adverse effect on the surrounding structure in the event of exposure to fire or heat sources.

6.5.3 *Apparatus for Smoldering Combustion Test:*

6.5.3.1 *Specimen Holder*—The specimen holder shall be an open-top 203 ± 2 mm (8 ± 0.08 in.) square box, 100 ± 2 mm (4 ± 0.08 in.) in height, fabricated from 18 United States standard gage stainless steel sheet with the vertical edges of the box overlapped, not to exceed 7 mm (0.27 in.) in seam width, and joined to be watertight.

6.5.3.2 *Specimen Holder Pad*—During the test the specimen holder shall rest upon a pad of unfaced glass fiberboard having dimensions equal to the bottom of the specimen holder. The glass fiberboard shall be approximately 25 mm

[4] This statement on flame resistant permanency was added in March 1987.

(0.98 in.) thick, with a density of 40 ± 4 kg/m (2.5 ± 0.25 lb/ft).

6.5.3.3 *Laboratory Scales*, capable of weighing the specimen holder and sample with an accuracy of ± 0.2 g (0.007 oz).

6.5.3.4 *Drill Press*, with vertical movement capabilities in excess of 114 mm (4.5 in.) and fitted with an 8 mm (0.315 in.) diameter drill bit with a minimum usable length of 102 mm (4.0 in.) when chucked.

6.5.3.5 *Ignition Source*—The ignition source shall be a cigarette without filter tip made from natural tobacco, 85 ± 2 mm (3.35 ± 0.08 in.) long with a tobacco packing density of 0.27 ± 0.0020 g/cm and a total weight of 1.1 ± 0.2 g (0.04 oz).

6.5.4 *Sampling*—Three specimens per sample shall be tested.

6.5.5 *Conditioning*—Sample shall be allowed to dry at 23 ± 3°C (73.4 ± 5.4°F) and 50 ± 5 % relative humidity until constant mass is achieved.

6.5.6 *Test Chamber*—A draft-protected chamber or hood with a suitable exhaust system to remove products of combustion. Air velocities shall not exceed 0.5 m/s (1.64 ft/s) in the vicinity of the specimen surface when measured by a hot wire anemometer.

6.5.7 *Procedure:*

6.5.7.1 Determine tare weight of specimen holder and fiberglass shim (after drilling) to nearest 0.2 g and record weight (see 6.5.7.4).

6.5.7.2 After conditioning in accordance with 6.5.5, cut specimens 203 by 203 ± 2 mm (8 by 8 ± 0.08 in.) square to fit snugly inside the specimen holder.

6.5.7.3 After cutting specimen to the correct size, drill a hole through the thickness of the specimen at the center. Use a drill press and steel drill bit described in 6.5.3.4.

6.5.7.4 Insert drilled specimen level with top edge of specimen holder. If required, provide a shim of unfaced fiberglass (approximate 0.5 lb/ft^3) under the specimen that is cut to fit holder and center drilled to align with specimen. Carefully cut excess material extending above the top edge of the specimen holder. A reciprocating electric knife or saw has been found suitable. Take care that the center drilled hole is free of debris and if the shim pad is used, that the hole is aligned through specimen and pad.

6.5.7.5 Weigh specimen and specimen holder, subtract weight of empty specimen holder and fiberglass shim if used. Record this as the starting weight of the specimen, (W_1). Calculate the density of the specimen to the nearest 0.1 lb/ft^3; density shall be within ± 10 % of the manufacturer's design density.

6.5.7.6 With the specimen in the specimen holder and placed on the insulation pad, insert well-lighted cigarette, burned no more than 8 mm (0.32 in.), into the formed cavity, with the lighted end upward and flush with the specimen surface. Place the specimen in the test chamber and allow burning of the cigarette to proceed undisturbed for at least 1 h, after which, allow specimen to remain until there is no evidence of heat or smoke and the bottom of the specimen holder is cool to the touch.

6.5.7.7 After the specimen has cooled to less than 25°C (77°F), weigh to the nearest 0.2 g and subtract the tare weight determined in 6.5.7.1 to arrive at the final net weight, (W_2).

6.5.8 *Calculation*—Calculate percent weight loss as follows:

$$WL = (\{W_1 - W_2\}/W_1) \times 100$$

where:

WL = weight loss, %,
W_1 = weight of specimen before test, g (oz), and
W_2 = final weight of specimen at completion of test, g (oz).

6.5.9 *Retest*—If all three specimens pass, the insulation passes. If more than one fails, the insulation is rejected. If any one of the three specimens should fail, conduct a retest consisting of three additional specimens. Should one of the three retest specimens fail, the insulation is rejected.

6.5.10 The precision and bias of this test method has not been determined.

6.6 *Fungi Resistance:*

6.6.1 *Scope*—This test method covers the determination of the amount of resistance to the growth of fungi present in self-supported spray applied cellulosic thermal/acoustical insulation.

6.6.2 *Significance and Use*—It is necessary to ensure that spray applied cellulosic insulation materials support no greater growth of fungi than the surrounding materials of the structure being insulated. Normally the structural materials in question will be wood. Excessive growth of fungi on the insulation could result in loss of efficiency of the insulation, damage to the structure, and possible health hazards to the occupants of the insulated structure. The purpose of this test method is to provide an evaluation of the potential for fungi growth present in the insulation material relative to common wood used for framing.

6.6.3 *Apparatus*—The apparatus required to conduct this test method consists of chambers or cabinets together with auxiliary instrumentation capable of maintaining the specified conditions of temperature and humidity. The apparatus shall be constructed to keep light from entering the chamber during the test period.

6.6.4 *Sampling*—Unless specified by the purchaser, one specimen shall be selected from each of three different bags or other packages of insulation, as applicable.

6.6.5 *Procedure*—Prepare mineral salts agar in accordance with Table 1.

6.6.5.1 Sterilize the mineral salts agar by autoclaving at 121 ± 2°C (250 ± 3.6°F) for 20 min. Adjust the pH of the solution with 0.01 normal NaOH solution so that after sterilization the pH is from 6.0 to 6.5. Reagent grade chemicals shall be used in all tests. Unless otherwise specified, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of

TABLE 1 Preparation of Mineral Salts Agar

Chemical	Amount
Sodium nitrate ($NaNO_3$)	2.0 g
Magnesium sulfate ($MgSO_4$)	0.5 g
Potassium chloride (KCl)	0.5 g
Ferric sulfate ($Fe_2(SO_4)_3 \cdot 9H_2O$)	0.01 g
Potassium dihydrogen orthophosphate (KH_2PO_2)	0.14 g
Potassium monohydrogen orthophosphate (K_2HPO_4)	1.2 g
Agar	15.0 g
Distilled water	1.0 L
Yeast extract	0.02 g

TABLE 2 Test Fungi for Preparation of Mixed Spore Suspension

Fungi	ATCC[A]	NLABSIO[B]
Aspergillus niger	9 642	386
Aspergillus flavus	9 943	380
Aspergillus versicolor	11 730	432
Penicillium funiculosum	11 797	474
Chaetomium globosum	6 205	459

[A] Available from American Type Culture Collection, 12301 Parklawn Dr., Rockville, MD 20852.
[B] Available from Pioneering Research Division, United States Army Natick Laboratories, Natick, MA 01760.

the American Chemical Society, where such specifications are available.[5]

6.6.5.2 Unless otherwise specified, reference to water shall be understood to mean sterilized and either deionized or distilled water.

6.6.5.3 *Preparation of Mixed Spore Suspension*—Use the test fungi prescribed in Table 2. Maintain separate cultures of these fungi on an appropriate medium such as potato dextrose agar. However, the culture of *chaetomium globosum* shall be maintained on strips of filter paper on the surface of mineral salts agar. The stock culture may be kept for no more than four months at 6 ± 4°C (43 ± 7°F) at that time subcultures shall be made, and new stocks shall be selected from the subcultures. If genetic or physiological changes occur, obtain new cultures as specified previously. Subcultures used for preparing new stock cultures or the spore suspension shall be incubated at 30 ± 2°C (86 ± 3.6°F) for nine days or longer. Prepare a spore suspension of each of the five fungi by pouring 10 mL of a sterile solution containing 0.05 g/L of a nontoxic wetting agent such as sodium dioctyl sulfosuccinate or sodium lauryl sulfate on each culture. Use a sterile platinum or nichrome inoculating wire to gently scrape the surface growth from the culture of the test organism. Pour the spore charge into a sterile 125 mL glass stoppered Erlenmeyer flask containing 45 mL of sterile water and 50 to 75 solid glass beads, 5 mm (0.20 in.) in diameter. Shake the flask vigorously to liberate the spores from the fruiting bodies and to break the spore clumps. Filter the dispersed fungal spore suspension through a 6 mm (0.24 in.) layer of glass wool contained in a glass funnel, into a sterile flask. This process is intended to remove large mycelial fragments and clumps of agar that could interfere with the spraying process. Centrifuge the filtered spore suspension aseptically, and discard the supernatant liquid. Re-suspend the residue in 50 mL of sterile water and centrifuge. Wash the spores obtained from each of the fungi in this manner three times. Dilute the final washed residue with sterile water so that the resulting spore suspension shall contain 1 000 000 ± 200 000 spore/mL as determined with a counting chamber. Repeat the operation for each organism used in the test and blend equal volumes of the resultant spore suspensions to obtain the final mixed spore suspension. The spore suspension may be prepared fresh each day, or may be held at 6 ± 4°C (43 ± 7°F) for no more than seven days.

6.6.5.4 *Visibility of Innoculum Control*—With each daily group of tests, place one each of three pieces of sterilized filter paper, 1 in.^{2} on hardened mineral salts agar in separate covered petri dishes. Inoculate these with the spore suspension from a sterilized atomizer (an atomizer capable of providing 15 000 ± 3 000 spores per square centimetre). Incubate these in the test chamber along with samples at 30 ± 2°C (86 ± 3.6°F) at a relative humidity of no less than 95 % and examine these controls after seven days of such incubation. There should be copious growth on all three of the filter paper control specimens. Absence of such growth requires repetitions of the test.

6.6.5.5 *Comparative Items*—A section of untreated southern pine approximately 50.8 by 50.8 by 9.5 mm (2 by 2 by 3/8 in.) thick. The upper surface of the pine shall be planed smooth and shall be employed as a comparative item to determine the relative extent of the growth on samples being tested.

6.6.5.6 *Preparation of Test Samples*—For Type I materials, determine the amount of liquid adhesive concentrate that would be mixed with 10 g (0.35 oz) of dry material. To this adhesive, add sufficient water to make 37.5 mL of solution. Thoroughly mix the 10 g sample and water/adhesive solution. For Type II material, add 37.5 mL of water to the dry material and thoroughly mix.

6.6.5.7 *Innoculation of Test and Comparative Item*—Precondition the test area at 30 ± 2°C (86 ± 23.6°F) and at least 95 % relative humidity for at least 4 h. Place each piece of wood in a sterile petri dish and moisten with 3 mL of sterile water. Aseptically transfer approximately one-third of the insulation mix to each of three sterile petri dishes and gently tamp down to a relatively smooth surface to facilitate subsequent microscopic examination. Inoculate the test and comparative items with the spore suspension by spraying approximately 0.5 mL onto the contents of each petri dish. The spray shall be in the form of a fine mist from a previously sterilized atomizer or nebulizer. The petri dish shall be covered and incubation shall be started immediately following the inoculation.

6.6.5.8 *Incubation*—Maintain test conditions at 30 ± 2°C (86 ± 3.6°F) and at minimum relative humidity of 95 % for 28 days. The test chamber shall be kept closed during the incubation period, except during inspection. One means of achieving the proper conditions of temperature and humidity is to place the covered petri dishes in a neoprene coated wire petri dish holder (autoclavable) measuring approximately 222 mm (8 3/4 in.) wide by 111 mm (4 3/8 in.) deep by 190 mm (7 1/2 in.) high. The holder is then placed in an autoclavable 1.2 mil (0.0012 in.) (0.003 cm) thick polypropylene bag measuring 305 by 610 mm (12 by 24 in.). A small amount (approximately 50 mL) of water is placed in the bottom of the bag, and the bag is sealed with clamps or other means and is placed in an incubator or oven at 30 ± 1°C (86 ± 2°F).

6.6.5.9 *Inspection*—At the end of the incubation period, the test and comparative item shall be removed from the test chamber and examined at 40 × magnification.

6.6.6 *Report*—Report the growth observed on each of the three samples as being less than, equal to, or greater than the

[5] "Reagent Chemicals, American Chemical Society Specifications," Am. Chemical Soc., Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see "Reagent Chemicals and Standards," by Joseph Rosin, D. Van Nostrand Co., Inc., New York, NY and the "United States Pharmacopeia."

growth observed on the comparative item.

6.6.7 *Precision and Bias*—No statement is made about the precision and bias of this test method since it is a qualitative method and no numerical value is obtained.

6.7 *Corrosion:*

6.7.1 *Scope*—This test method provides a basis for estimating the corrosiveness of spray-applied cellulosic insulation.

6.7.2 *Significance and Use*—This test method provides a basis for estimating the corrosiveness of spray-applied cellulosic insulation in contact with steel, copper, and aluminum test materials. The test method represents one set of exposure conditions designed to accelerate possible corrosive effects, and may not simulate exposure conditions experienced in actual field applications.

6.7.3 *Apparatus and Materials:*

6.7.3.1 *Humidity Chamber (Test Method A)*, air-circulating, capable of maintaining a temperature of 48.9 ± 1.7°C (120 ± 3°F) and 95 ± 3 % relative humidity throughout the active portion of the chamber.

6.7.3.2 *Oven (Test Method B)*, air circulating, capable of maintaining a temperature of 48.9 ± 1.7°C (120 ± 3°F) throughout the active portion of the chamber.

6.7.3.3 *Crystallizing Dishes*, six, glass, 90 mm (3.5 in.) in diameter by 50 mm (2.0 in.) in height.

6.7.3.4 *Containers*, six, glass, polyethylene or polypropylene, with screw cap or friction top lid capable of sealing, 127 mm (5 in.) in normal diameter and 76 mm (3 in.) in nominal height. Rubber gloves, clean and in good condition.

6.7.3.5 *Chemicals*—Reagent grade chemicals shall be used in all test. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available.[5]

6.7.3.6 *Water*, sterilized and either deionized or distilled water.

6.7.3.7 *Forceps.*

6.7.3.8 *Test Coupons*—Two, 3003 bare aluminum alloy, zero temper. Two, ASTM B 152, Type ETP, Cabra number 110 soft copper. Two, low-carbon, commercial quality, cold-rolled, less than 0.30 % carbon, shim steel. Each coupon shall be 50.8 by 50.8 by 0.076 mm (2 by 2 by 0.003 in.) thick, free of tears, punctures, or crimps. Six coupons shall be used for one test of the insulation.

6.7.3.9 *Sampling*—Samples of spray-applied cellulose insulation used for testing shall be blown, combed, or otherwise mixed to reasonably assure homogeneity of the sample.

6.7.4 *Procedure for Precleaning Metal Coupons:*

6.7.4.1 During fabrication, cleaning, or testing never touch the metal coupons with ungloved hands. Handle cleaned coupons with clean forceps.

6.7.4.2 In order to avoid exposing laboratory personnel to toxic fumes perform all cleaning in a fume hood.

6.7.4.3 Clean the coupons by vapor degreasing with 1-1-1 trichlorethane for 10 min. Following vapor degreasing subject the coupons to caustic or detergent washing, or both, as appropriate. Following caustic or detergent washing, rinse the coupons in flowing water to remove residues. Inspect each coupon for a water-break free surface. (A water-break is a separation, beading, or retraction of the water film as the coupon is held vertically after wetting.) As the coupons are cleaned, the water film should become gradually thinner at the top and heavier at the bottom. Hot-air dry the coupons at 105°C (221°F).

6.7.5 *Preparation of Test Samples:*

6.7.5.1 For each metal coupon, subdivide a 20 g (0.70 oz) sample of insulation into two 10 g (0.35 oz) portions. For Type I materials: determine the amount of liquid adhesive concentrate that would be mixed with 10 g (0.35 oz) of dry material. To this adhesive, add sufficient water to make 75 mL of solution for each 10 g sample. For Type II materials: since the dry adhesive is already present, no special preparation is required. Presaturate each 10 g (0.35 oz) portion with 75 mL of water for Type II materials (or 75 mL of adhesive/water solution for Type I materials). Place one presaturated 10 g portion into a crystallizing dish on the metal coupon and tamp the composite specimen (metal coupon and saturated insulation in the crystallizing dish), tamp level using the bottom of a clean suitably sized glass beaker. Place a metal coupon onto the presaturated insulation portion and center it in a horizontal plane. Place the other presaturated 10 g portion into the crystallizing dish to ensure an even distribution of this material and to ensure good contact of the insulation with metal. Exercise care in preparing the composite specimens to eliminate air pockets from forming next to the metal coupons.

6.7.5.2 Do not cover the crystallizing dish. Care should be taken to avoid evaporation from the composite during preparation and until it is placed in the testing chamber. Prior to placing in the test chamber, the composite specimen shall be weighed to the nearest 0.1 g (0.0035 oz).

6.7.6 *Sample Test Cycle*—Use either a humidity chamber (Test Method A) or an oven (Test Method B) to provide for the required temperature and relative humidity exposure.

6.7.7 *Test Method A*—Test Method A is provided for compliance with federal standards when required.

6.7.7.1 Precondition the humidity chamber to 48.9 ± 1.7°C (120 ± 3°F) and 95 ± 3 % relative humidity.

6.7.7.2 Place all six composite samples in the humidity chamber. Keep the samples in the humidity chamber 336 ± 4 h. During the test cycle, periodically monitor the temperature and humidity.

6.7.7.3 If dripping of condensate occurs within the humidity chamber, position guards over the samples to prevent the condensate from falling onto the samples.

6.7.8 *Test Method B:*

6.7.8.1 Precondition the oven to 48.9 ± 1.7°C (120 ± 3°F).

6.7.8.2 Place the crystallizing dishes containing the composite sample in separate 127 mm (5 in.) diameter containers.

6.7.8.3 Add 70 mil of distilled water solution plus 25 g (0.88 oz) of potassium sulfate to the annular space between the crystallizing dish and the container. If any of the solution is inadvertently added to the composite sample, prepare a new composite.

6.7.8.4 Loosely place the covers on the containers and preheat the containers 1 h in the oven at 48.9 ± 1.7°C (120 ± 3°F). After preheating, seal the containers in the oven 336 ± 4 h. During the test cycle, periodically monitor the temperature.

6.7.8.5 *Post-Test Cleaning of the Metal Coupons*—After

completing the test cycle, the composite specimens shall be weighed to the nearest 0.1 g (0.0035 oz). Disassemble the composite specimens and thoroughly wash the metal coupons under running water and lightly brush them using a soft nylon bristle brush or equivalent to remove loose corrosion products. Remove the remaining corrosion products from the metal coupons by cleaning them as follows in a fume hood:

6.7.9 *Technique Number 1–Electrolytic Cleaning*—(For copper, steel, and aluminum coupons.) Electrolyze the coupons by making a solution containing 28 mL of sulfuric acid (sp gr 1.34), 2 mL of organic inhibitor, for example, about 0.5 g of such inhibitors as diorthotolyl thiourea, quinoline ethiodide, or betanaphthol quinoline, and 970 mL of water. Maintain the solution at 75 ± 2°C (167 ± 3.6°F). Use carbon or lead for the anode and one metal coupon for carbon or lead. Electrolyze for 3 minutes at a current density of 20 A/cm^2. **Caution:** If using lead anodes, lead may deposit on the coupon. If the coupon is resistant to nitric acid, remove the lead by a flash dip in a solution of equal parts nitric acid and water. **Precaution:** To avoid injury when mixing acid and water, for electrolytic cleaning gradually pour the acid into the water with continuous stirring, and provide cooling if necessary.

6.7.10 *Technique Number 2–Copper*—(This technique or Technique Number 1 may be used for postcleaning only the tested copper coupons.) Make a solution containing 500 mL of hydrochloric acid (sp gr 1.19), 100 mL of sulfuric acid (sp gr 1.84), and 400 mL of water. **Precaution:** To avoid injury, prepare the solution by slowly adding the sulfuric acid to the water with continuous stirring. Cool, then add the hydrochloric acid slowly with continuous stirring. The solution shall be at room temperature. Dip the coupons in the solution for 1 to 3 min.

6.7.11 *Technique Number 3–Steel*—(This technique or Technique Number 1 may be used for postcleaning only the tested steel coupons.) Use one of the following two solutions:

6.7.11.1 *Solution Number 1*—Add 100 mL of sulfuric acid (sp gr 1.84), 1.5 mL of organic inhibitor, and water to make a 1-L solution. Maintain the solution at 50 ± 2°C (122 ± 3.6°F). Dip the coupons in this solution.

6.7.11.2 *Solution Number 2 (Clarke's solution)*—Add 20 g (0.7 oz) of antimony trioxide and 50 g (1.76 oz) of stannous chloride to 1 L of hydrochloric acid (sp gr 1.19). Stir the solution and use it at room temperature. Dip the coupons for up to 25 min in this solution, stirring the solution at a rate so that deformation of the coupons does not occur.

6.7.12 *Technique Number 4–Aluminum*—(This technique or Technique Number 1 can be used for postcleaning only the tested aluminum coupons.) Make a 1-L solution by adding 20 g (0.7 oz) of chromic acid and 50 mL of phosphoric acid (sp gr 1.69) to water. Maintain the solution at 80 ± 2°C (176 ± 3.6°F). Dip the coupons in this for 5 to 10 min. If a film remains, dip the coupons in nitric acid (sp gr 1.42) for 1 min. Repeat the chromic acid dip. If there are no deposits, use nitric acid alone.

6.7.13 *Inspection*—After cleaning the metal coupons, examine the coupons over a 40 W appliance light bulb for perforations. Ignore notches that extend into the coupon 3 mm (0.12 in.) or less from any edge.

6.7.14 *Report*—The report shall include the following:

6.7.14.1 Description of the insulation tested,

6.7.14.2 ASTM test method used,

6.7.14.3 The absence or presence of perforations through the metal coupons. Notches extending into the coupon 3 mm or less from any edge shall be ignored. The absence or presence of perforation by type of metal coupon will also be reported.

6.7.15 *Precision and Bias*—A precision and bias statement is not applicable to this test method because the test produces pass/fail results, not numerical results.

6.8 *Moisture Vapor Absorption:*

6.8.1 *Scope*—This test method describes a procedure for determining the percent moisture absorbed from the atmosphere by the product under laboratory conditions.

6.8.2 *Significance and Use*—The inherent property of cellulosic fiber to exchange water with the atmosphere, and the possible use of hygroscopic chemicals in fire retardants are factors necessitating testing of production lots of insulation for moisture absorption capability.

6.8.3 *Apparatus:*

6.8.3.1 *Sample Container*, constructed so as to conform to the specimen holder in 6.5.3.1.

6.8.3.2 *Humidity Chamber*, constructed so as to shield the sample from condensate drip and capable of maintaining the following two sets of conditions: 49 ± 1.7°C (120 ± 3°F) and 50 ± 5 % relative humidity, and 49 ± 1.7°C (120 ± 3°F) and 90 ± 5 % relative humidity.

6.8.3.3 *Balance*, capable of weighing sample and container to nearest 0.2 g (0.0070 oz).

6.8.4 The test sample shall be randomly selected from one production lot of insulation.

6.8.5 *Procedure*—Moisture vapor absorption shall be determined on a sample within the ±10 % manufacturer's design density.

6.8.6 *Sample Preparations*—The sample shall be prepared as described in Section 5 and 6.5.7.2. Record weight of sample being tested to within 0.2 g (0.007 oz).

6.8.7 *Density*—Calculate the density of the sample as follows:

$$D = W/V$$

where:

D = density, lbs/ft^3 (kg/m^3),
W = weight of sample, lbs (kg), and
V = volume of sample, ft^3 (m^3).

6.8.8 Insert sample into the specimen holder.

6.8.9 Condition this test material at 49 ± 1.7°C (120 ± 3°F) and 50 ± 5 % relative humidity to a constant weight and record the weight (W_1). Constant weight has been achieved when successive weighings vary no more than 1 % in a 24-h period.

6.8.10 Increase the relative humidity to 90 ± 5 %. Retain the test specimen in this condition for a period of 24 h. Remove after 24 h and weigh immediately and record the weight as W_2.

6.8.11 *Calculation*—Calculate the moisture absorbed as follows:

$$M = W_2 - W_1/(W_1 - W_3) \times 100$$

where:

M = percent moisture absorbed,
W_1 = weight of container and specimen after conditioning at 50 % relative humidity, g (oz),
W_2 = weight of container and specimen after conditioning at 90 % relative humidity, g (oz), and
W_3 = weight of the empty container, g (oz).

6.8.12 *Report*—The report shall contain the following:

6.8.12.1 Percentage by weight of moisture absorbed.

6.8.12.2 Sample identification and date of manufacture.

6.8.12.3 Density at which sample was tested.

6.8.12.4 Test conditions, temperature, relative humidity, and exposure time.

6.8.13 *Precision and Bias*—The precision and bias of this test method has not been determined.

6.9 *Odor Emission:*

6.9.1 *Scope*—This test method covers the determination of the existence, nature, and degree of odors present in Type I and Type II spray-applied cellulosic based thermal/accoustical insulation.

6.9.2 *Significance and Use*—Thermal insulating materials that produce objectionable odors could cause discomfort to persons occupying a structure insulated with such materials. Therefore, an examination to determine the odor potential of a particular insulation is desirable.

6.9.3 *Apparatus*—Containers shall be either all stainless steel or glass with tight-fitting lids. Containers must produce no discernible odor of their own. Capacity of containers shall be a minimum of 50 g of the material to be tested.

6.9.4 *Sampling*—Unless otherwise specified by the purchaser, one sample of the material to be tested shall be selected at random. Each sample shall be cured and cut to produce a cross section of either the Type I or Type II spray applied insulation containing minimum of 50 g of insulation.

6.9.5 *Procedure:*

6.9.5.1 Condition samples to constant mass, at 23 ± 3°C (73.4 ± 5.4°F).

6.9.5.2 Insert the sample into a test container and firmly replace the lid. Subject each closed container to a temperature of 65 ± 1.7°C (149 ± 3°F) for a period of 30 min.

6.9.5.3 A panel of five persons having normal odor perception shall open the test container and examine for odor.

6.9.5.4 The panel members shall answer the following questions regarding the sample examined:

Was a perceptible odor present?

Yes _____ No _____

If so, was the odor:

objectionable _____ pleasant _____ neutral _____

Odor was:

weak _____ strong _____ neutral _____

6.9.6 *Report*—A test report shall be prepared indicating whether the tested material passed or failed in the majority opinion of the panels selected. The report shall also include the compiled panel opinions as above.

6.9.7 *Precision and Bias:*

6.9.7.1 No statement is made about the precision of this test method for determining the presence of odor since it is a qualitative method only and no numerical value is obtained.

6.9.7.2 The bias of this test method is being established.[6]

6.10 Air erosion will be determined by Test Method E 859.

6.11 Substrate deflection shall be determined in accordance with Test Method E 759.

7. Packaging, Delivery, and Storage

7.1 Material shall be delivered to the site in the manufacturer's original and unopened packaging, bearing labels showing type of material brand name, labels as required, and manufacturer's name and address.

7.2 Material shall be stored under cover in a dry and clean location. Delivered materials which have been exposed to water before use or are otherwise not suitable for use shall be removed from the job site and replaced with acceptable materials.

8. Installation

8.1 Sprayed thermal insulation material shall be applied in strict conformance with the manufacturer's written instructions, and in conformance with all applicable codes.

8.2 Material shall be applied within the temperature limitations of the manufacturer's written instructions.

9. Inspection

9.1 The testing protocols herein are meant to be qualification requirements solely, this specification is not intended to be used as field inspection; any other inspection shall be as agreed upon the by the purchaser and the seller as part of the purchase contract.

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[6] Panel members shall be persons who have demonstrated an ability to detect odors accurately and consistently. A recommended method for panel selection is given in the paper by Wittes, J., and Turk, A., "The Selection of Judges for Odor Discrimination Panels," *Correlation of Subjective-Objective Methods in the Study of Odors and Taste*, ASTM STP 440, ASTM, 1968, pp. 49–70.

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, 1916 Race St., Philadelphia, PA 19103.

ATTACHMENT "1"

STATE OF MINNESOTA
Department of Administration

408 Metro Square
7th and Robert Sts.
Saint Paul, Minnesota 55101
Phone: (612) 296-4639
FAX: (612) 297-1973

BUILDING CODES AND STANDARDS

November 7, 1991

RECEIVED
NOV 8 1991
DEPT. OF PUBLIC SERVICE

Mr. Bruce Nelson
Minnesota Department of Public Service
Energy Information Center
150 E. Kellogg Boulevard #790
St. Paul, MN 55101

RE: Chapter 7640, Thermal Insulation Standards

Dear Mr. Nelson:

Chapter 7640 "Thermal Insulation Standards" appears to have wording that is either in violation of the National Manufactured Housing Construction and Safety Standards Act of 1974 and/or Minnesota Statute 327.32. Section 604(d) of "The Act" states:

> "Whenever a Federal manufactured home construction and safety standard established under this title is in effect, no State or political subdivision of a State shall have any authority either to establish, or to continue to effect, with respect to any manufactured home covered, any standards regarding construction or safety applicable to the same aspect of performance of such manufactured home which is not identical to the Federal manufactured home construction and safety standard."

Minnesota Statute 327.32 in effect for homes bearing a construction seal manufactured after July 1, 1972 stated in Subdivision 5:

> "Effect of compliance. No manufactured home which bears a seal or label as provided in this section shall be required by any agency or political subdivision of this state to comply with any other building, plumbing, heating, or electrical code or any construction standards other than the manufactured home building code nor be subject to any other state or local building inspection, except as the commissioner shall, by rule, provide in the case of alterations, manufactured home accessory structures and installations, or except as otherwise provided by federal or state law. No manufactured home installation or manufactured

> home accessory structure shall be required by any agency or political subdivision of this state to comply with any installation standards other than those adopted and promulgated by the commissioner. Nothing in this section shall be construed to inhibit the application of zoning, subdivision, architectural, or esthetic requirements pursuant to chapter 462."

Chapter 7640.0100 Subpart 1, last paragraph contains wording:

> "Not included are insulation used in manufactured appliances, windows, and doors, and insulation used in new manufactured homes assembled outside Minnesota."

The part "new manufactured homes" should be eliminated as the Minnesota Energy Code would not apply to manufactured homes built after July 1, 1972 bearing a State Construction Seal or HUD Construction Label. The part "manufactured home assembled outside Minnesota" would also be incorrect.

Please review the wording in Chapter 7640 for changes to meet state and federal laws. If you have any questions, please contact me at 612/296-9927.

Respectfully,
BUILDING CODES AND STANDARDS DIVISION

Randy E. Vogt
Building Codes Representative

REV/kk

INTERNATIONAL CELLULOSE CORPORATION
Innovative Fiber Technology

October 8, 1991

RECEIVED
OCT 15 1991
DEPT. OF PUBLIC SERVICE

Mr. Bruce Nelson
Minnesota Energy Commission
900 American Center
150 E. Kellogg Blvd.
St. Paul, MN 55101

Re: ASTM C-1149 - Standard Specification for Self-Supported Spray Applied Cellulose Thermal/Acoustical Insulation

Dear Bruce,

As the title of the standard indicates, all spray type cellulose materials should be self-supporting and evaluated in all test procedures in the form and consistency of the end product.

The rational behind this "self-supporting" requirement is the potential that some contractors may apply product less than full cavity thick, as a result, the product could not depend upon the wall board on each side as support.

If the product demonstrates the ability to support its own weight without support on both sides during the tests, it is demonstrating the ability to maintain integrity and remain in place without settling or falling, leaving some uninsulated areas.

Hope the above explanation will be of some help to you. If you need further information, please let me know.

Regards,

INTERNATIONAL CELLULOSE CORPORATION

Harold Boyer
V.P. Technical/Engineering

HB/gh

P.O. BOX 450006 • HOUSTON, TX. 77245-0006 • 713/433-6701 • FAX 713 433-2029

UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899

RECEIVED
SEP 30 1991
DEPT. OF PUBLIC SERVICE

September 25, 1991

Mr. Bruce Nelson
Minnesota Department of Public Service
790 American Center Building
150 E. Kellogg Blvd.
St. Paul, MN 55101

Dear Mr. Nelson:

I am writing you on behalf of ADO Products of Edina, MN. ADO Products is inporting fiberglass insulation from Canada which has been tested in a Canadian Laboratory, Insultech Inc. This laboratory has been accredited by the Standards Council of Canada.

A Memorandum of Understanding is in force between the Standards Council of Canada (SCC) and the National Institute of Standards and Technology (NIST), copy attached, providing for the mutual recognition of testing laboratories accredited by the two organizations.

Accreditation of Insultech by the SCC provides that laboratory with the status of an accredited laboratory under NVLAP. The technical requirements under the SCC and the NVLAP programs are essentially the same.

Sincerely,

Albert D. Tholen, Chief
National Voluntary Laboratory
Accreditation Program (NVLAP)

Attachment as noted

cc: K. Obermeyer, ADO Products
L. Galowin, NVLAP

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DEPT. OF PUBLIC SERVICE

MEMORANDUM OF UNDERSTANDING BETWEEN THE STANDARDS COUNCIL OF CANADA AND NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY UNITED STATES OF AMERICA

I. Purpose

The purpose of this Memorandum of Understanding (MOU) is to provide for the mutual recognition, by the Parties to this MOU, of the testing laboratory accreditation systems administered by the Standards Council of Canada (SCC) for testing laboratories located in Canada and by the National Institute Of Standards and Technology (NIST) for testing laboratories located in the territorial United States of America. This MOU does not cover accreditation of calibration laboratories.

II. Background

1. Within their respective jurisdictions, SCC and NIST operate ongoing testing laboratory accreditation systems to grant formal recognition to testing laboratories that are found competent to carry out specific tests.

2. Rather than attempt to accredit testing laboratories in each other's country, it seems appropriate to find a way for each of the Parties to recognize the testing laboratory accreditations granted by the other's testing laboratory accreditation system. This MOU has been devised for this purpose. Such an MOU is in harmony with the provisions of the General Agreement on Tariffs and Trade (GATT) Agreement on Technical Barriers to Trade.

3. The testing laboratory accreditation system administered by each of the Parties is voluntary in the sense that participation by the testing laboratories being accredited is not mandated by law in either country. SCC and NIST base their decisions to accredit a testing laboratory on broadly similar criteria but the implementation of these is somewhat different in each country. Staff members responsible for the administration of each system have analyzed the evaluation criteria and operating procedures used in each system and have participated in assessment visits to testing laboratories seeking accreditation under each other's system.

III. Understanding

This MOU gives effect to decisions by the Parties to grant recognition to each other's testing laboratory accreditation systems. For all fields of testing each Party will:

1) recognize that the accreditation of a testing laboratory:

   (a) by SCC, provides that laboratory with the status of an accredited testing laboratory in the territorial United States of America; and

   (b) by NIST, provides that laboratory with the status of an accredited testing laboratory in Canada;

2) recognize that the accreditations granted by these organizations are comparable and will make that fact known to interested parties;

3) recognize that accreditation by either of the Parties does not imply acceptance of, or responsibility for, test results generated by an accredited testing laboratory;

4) recognize that acceptance of test results generated by a testing laboratory accredited by either Party remains a negotiable matter between the client of the testing laboratory, to whom the results were rendered, and the third party to whom the test results are submitted;

5) maintain records of the scope of accreditation of each testing laboratory accredited by the Parties and on request make that information available;

6) publish its own criteria used to accredit testing laboratories in its own country and maintain on file the accreditation criteria for the other country's system;

7) collaborate in the development and adoption of revised criteria for accreditation of testing laboratories to increase harmony between the two accreditation systems;

8) audit its own accredited testing laboratories on a regular basis;

9) collaborate in the development and adoption of testing laboratory assessment methods and cooperate in developing and operating proficiency testing programs;

10) cooperate in promoting the development and adoption of testing laboratory accreditation principles internationally and in the development of international standards relating to testing laboratory accreditation systems.

IV. Harmonization

The Parties agree to cooperate in eliminating or minimizing differences between the systems within five years of the signing of this MOU.

V. Resolution of Complaints

Each Party will investigate complaints about its accredited testing laboratories that the other Party brings forward and the Parties will work together to seek satisfactory resolution of such complaints.

VI. Duration and Termination

This MOU will become effective on the date of signature. It will remain in effect for a period of five (5) years and may be extended by mutual consent. This MOU may be terminated at any time by either Party upon twelve (12) months written notice to the other Party.

APPROVED AND ACCEPTED FOR THE
STANDARDS COUNCIL OF CANADA

By: _____

Title: Executive Director
Standards Council of Canada

Date: 88.9.7

Designated Liaison Officer

Manager, Testing Program
STANDARDS COUNCIL OF CANADA
Ottawa, Ontario K1P 6N7
Canada
Telephone 613-238-3222

APPROVED AND ACCEPTED FOR
THE NATIONAL INSTITUTE OF STANDARDS
AND TECHNOLOGY

By: _____

Title: Director
National Institute Of
Standards and Technology

Date: Sept. 7, 1988

Designated Liaison Officer

Manager, NVLAP
NATIONAL INSTITUTE OF STANDARDS AND
TECHNOLOGY
Gaithersburg, MD 20899
Telephone 301-975-4017

ATTACHMENT

DIFFERENCES IN CRITERIA FOR EVALUATING LABORATORIES
Between
The Standards Council of Canada (SCC)
National Accreditation Program for Testing Organizations
and the
National Institute of Standards and Technology (NIST), U.S.A.
National Voluntary Laboratory Accreditation Program (NVLAP)

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1. Eligibility

NIST will accredit all laboratories, including foreign laboratories, which comply with the criteria and requirements for accreditation. SCC accredits only laboratories located in Canada.

2. Quality Control Systems

NIST requires the laboratory to document its quality control system in a manual or equivalent document, covering compliance with the requirements of NIST criteria. SCC requires full documentation of the quality system requirements; although not officially required, a formal manual is pressed for.

3. Equipment

Both NIST and SCC require traceability to national standards authorities, which in the United States of America is defined as the U.S. National Institute Of Standards And Technology (NIST) but in Canada is open to international sources recognized by the National Research Council of Canada (NRCC). Under NIST, accreditation is not yet offered for calibration service laboratories, but the SCC does offer such accreditation.

4. Methods of Test

SCC accredits laboratories only for specific test methods in any appropriate field of testing. NIST accredits laboratories only for specific test methods in fields of testing for which a need has been determined through NIST procedures. NIST offers accreditation for national, foreign and international consensus or government standards. SCC offers accreditation for the preceding and for established technically satisfactory "in-house" test methods.

5. Laboratory Records

NIST requires retention of data for at least one year with the option to extend this period. SCC does not specify a minimum retention period but recommends a minimum of three years.

6. Test Reports

The SCC criteria do not specify the contents of test reports, but this element is covered by the detailed checklists used to prepare for and conduct the on-site assessment. NIST requires specified documentation in the report, and requires designated "approved signatories" for each laboratory. SCC checks the qualifications of the staff members who issue test reports and interviews each of them.

7. Proficiency Testing

Proficiency testing programs are encouraged and supported in practice, under the SCC program. Proficiency testing is obligatory in each program now operated by NIST.

8. On-Site Visits

NIST uses an assessor, usually acting alone, who is expert in the field of testing for which accreditation is to be granted; if there is more than one field involved, the assessors act independently and may visit the laboratory at different times. SCC uses a team approach with a staff member as leader-coordinator, a representative of the Testing Accreditation Sub-Committee for managerial and financial matters, and as many technical experts as are required for the scope of testing to be accredited. While a typical NIST assessment visit lasts two days and could take longer, SCC usually takes only one day and not more than one and a half days. The NIST assessor leaves a signed copy of an on-site assessment report, while SCC sends a written report later which lists the items discussed at the exit interview.

NIST formally requests a response by the laboratory within 30 days as to the corrective actions/plans for each itemized deficiency. A lack of response is followed up and failure to act in a reasonable time leads to denial, revocation or lapse of accreditation. SCC requests a schedule for follow-up actions to correct non-compliances and the staff member follows up. When the assessors agree on the resolution of deficiencies, a final report of the assessment is submitted to the Testing Accreditation Sub-Committee (TASC).

9. Accreditation Process

SCC has a five stage process:

(1) The Assessment Team approves the Evaluation Report and recommends accreditation to TASC; (2) TASC reviews the report, the application and any other relevant documents and recommends accreditation to the Advisory

Committee on Certification and Testing (ACCT); (3) ACCT reviews the TASC report and recommends accreditation to the Executive Committee (EC) of SCC; (4) The EC makes the final decision for the President of SCC, who (5) Grants the accreditation.

NIST has a two stage process:

(1) NIST technical experts and staff members review the application, on-site assessment report, response to deficiencies, results of proficiency testing and any other relevant documentation, and recommend accreditation to the Associate Director for Industry and Standards (ADIS), who (2) Grants accreditation for the NIST Director.

10. Accreditation Certificates

SCC certificates of accreditation are not time-limited as are those of NIST, which are usually valid for only 12 months and are so dated.

11. Follow-Up Visits

NIST requires reassessment every two years. Although audit intervals are not specified in SCC documents, a ceiling of two years is practiced.

12. Publicizing Accredited Status

For accredited tests, NIST permits use of its logo on test reports issued by approved signatories. SCC permits the laboratory to include a specifically-worded statement on any test report containing only results for tests which are registered with SCC.

13. Fees Charged

NIST operates on a cost-recovery basis mandated by the U.S. Government, and charges application and maintenance (yearly) fees accordingly. To date, SCC's program is mostly funded by the federal government in the national interest, so applicants and registrants currently pay only a relatively low fee.

14. Language

NIST operates its program in English only, while SCC has a bilingual program with all documentation and operations available in both English and French.

Persons who wish to submit comments or a written request for a public hearing must submit such comments or requests to:

Connie Greer
Community Based Services
670 American Center Building
St. Paul, MN 55101

Comments or requests for a public hearing must be received by the Department by 4:30 p.m. on January 9, 1992.

The proposed rules may be modified if the modifications are supported by data and views and do not result in a substantial change in the proposed rules as noticed.

In 1981, the Minnesota Legislature passed *Minnesota Statutes*, sections 268.52 through 268.54, which authorized the department to financially assist community action agencies in the implementation of community action programs.

The proposed rules at *Minnesota Rules*, parts 3350.0010 to 3350.0200 are all new material.

The proposed rules embody existing departmental policy and practice and interpret state and federal law. In promulgating portions of the rules, the department has drawn on the past and present national experience in administering community action programs. The major portions of these rules address (1) the process of selecting community action agencies through designation on the local level and recognition on the state level; (2) the annual application process for funding community action programs; (3) reporting and planning requirements for receipt of funds; (4) voluntary cessation of program operations; (5) participation of low income people; (6) withholding and termination of funds under specialized circumstances; and (7) procedures for appealing the termination of funding, as well as designation of recognition.

A copy of these rules is available for your review from Connie Greer at the above address or can be found at 15 *State Register* 1902-1923 (March 4, 1991).

A fiscal note will not be prepared. The authority for these proposed rules, *Minnesota Statutes*, sections 268.52 through 268.54, was enacted before July 1, 1985. Therefore, these proposed rules need not include a fiscal note under exceptions provided by *Minnesota Statutes*, section 3.983, subdivision 3. Pursuant to *Minnesota Statutes*, section 14.11, subdivision 1, the agency estimates that there will be no cost to any local public bodies for the two years immediately following adoption. The estimate is based on no anticipated designation hearings or other hearings in the foreseeable future.

If no hearing is required upon adoption of the rules, the rules and the required supporting documents will be delivered to the Attorney General for review as to legality and form to the extent the form relates to legality. Any person may request notification of the date of submission to the Attorney General.

Persons who wish to be advised of the submission of this material to the Attorney General, or who wish to receive a copy of the adopted rules, must submit the written requests to Connie Greer.

R. Jane Brown, Commissioner
Department of Jobs and Training

Department of Public Service

Proposed Permanent Rules Relating to Thermal Insulation Standards

Notice of Intent to Amend Rules Without a Public Hearing

NOTICE IS HEREBY GIVEN that the Minnesota Department of Public Service intends to adopt amendments to *Minnesota Rules* Chapter 7640, without a public hearing. The Commissioner has determined that the proposed amendment of these rules will be noncontroversial in nature and has elected to follow the procedures set forth in the *Minnesota Statutes*, sections 14.22 to 14.28. Authority for the adoption of these rules is contained in *Minnesota Statutes*, sections 325F.20, subd. 1 and 325F.21, subd. 1 and 2.

Minnesota Rules Chapter 7640 apply to manufacturers, sellers and installers of residential thermal insulation products sold or installed in Minnesota.

All persons have 30 days in which to submit comment in support of or in opposition to any part or subpart of the proposed amendments. Comment is encouraged. Each comment should identify the proposed amendment addressed, the reason for the comment, and any change proposed.

All persons may make a written request for a public hearing on the proposed amendments within the 30-day comment period. If 25 or more persons submit a written request for a public hearing within the 30-day comment period, a public hearing will be held unless a sufficient number withdraw their requests in writing. Any person requesting a public hearing must state his or her name and address and is encouraged to identify the portion of the proposed amendment addressed, the reason for the request, and any change proposed. If a public hearing is required, the agency will proceed pursuant to *Minnesota Statutes*, sections 14.131 to 14.20.

Comments or written requests for a public hearing must be submitted to:

Bruce Nelson, Senior Engineer
Department of Public Service, Energy Division
790 American Center Building
150 East Kellogg Boulevard
St. Paul, MN 55101
phone (612) 297-2313 fax (612) 297-1959

Comments or requests for a public hearing must be received no later than 4:00 p.m., January 16, 1992.

The proposed amendments may be modified if the modifications are supported by the data and views submitted to the Department and do not result in a substantial change in the proposed amendments as noticed.

A Copy of the proposed rule amendment is attached to this notice.

A **STATEMENT OF NEED AND REASONABLENESS** that describes the need for and reasonableness of each provision of the proposed amendments and identifies the data and information relied upon to support the proposed amendments has been prepared and is available by requesting a copy from Mr. Nelson at the address listed above.

If no hearing is required, upon adoption of the rule, the rule and the required supporting documents will be submitted to the Attorney General for review as to legality and form to the extent that form relates to legality. Any person may request notification of the date of submission to the Attorney General. Persons who wish to be advised of the submission of this material to the Attorney General, or who wish to receive a copy of the adopted rules, must submit a written request for such to Mr. Nelson at the address listed above.

Dated: 18 November 1991

Krista L. Sanda, Commissioner
Department of Public Service

Rules as Proposed

7640.0110 APPLICABILITY.

Subpart 1. **Types of residential insulation products covered.** This chapter applies to insulation products for use in residential buildings. These include insulation for walls, ceilings, floors, foundation walls, pipe insulation, duct insulation, and retrofit water heater blanket insulation.

Not included are insulation used in manufactured appliances, windows, and doors~~, and insulation used in new manufactured homes assembled outside Minnesota~~.

[For text of subps 2 to 4, see M.R.]

7640.0120 DEFINITIONS.

[For text of subps 1 and 2, see M.R.]

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 (NVLAP), Gaithersburg, Maryland; ~~or~~

B. American Association for Laboratory Accreditation, Gaithersburg, Maryland; or

C. Standards Council of Canada, Ottawa, Ontario, Canada.

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.

[For text of subps 4 to 25, see M.R.]

Subp. 26. [See repealer.]

KEY: PROPOSED RULES SECTION — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." **ADOPTED RULES SECTION** — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

7640.0130 INSULATION MATERIALS STANDARDS.

[For text of subpart 1, see M.R.]

Subp. 2. **General testing requirements.** General testing requirements for regulated thermal insulation materials in this part are as follows:

[For text of item A, see M.R.]

B. All regulated thermal insulation materials must be tested for compliance with the standards ~~in this part as follows:~~ according to subitems (1) to (4).

(1) ~~Until April 2, 1986, testing must be performed only at a testing laboratory possessing the appropriate equipment, facilities, and qualified personnel necessary to perform testing required by parts 7640.0130 to 7640.0160. Tests performed in the 1985 calendar year are acceptable.~~

~~(2) After April 2, 1986, all~~ Required testing must be performed by an approved laboratory within two years of the filing of the initial report required by part 7640.0150.

~~(3)~~ (2) The thermal insulation material chosen for testing must be representative of material produced by the manufacturer during normal production runs.

~~(4)~~ (3) Testing for each type of insulation must be performed in accordance with the methods specified in subparts 3 to 8.

~~(5)~~ (4) Insulation must have flammability characteristics in accordance with the ~~UBC~~ Uniform Building Code, sections 1712 and 1713, for its intended uses.

[For text of items C and D, see M.R.]

Subp. 3. **Cellulose insulation.**

[For text of item A, see M.R.]

B. Cellulose fiber spray-applied must ~~meet the following requirements:~~ comply with ASTM C 1149.

(1) ~~The basic material must consist of virgin or recycled wood based cellulosic fiber. It may be made from related paper or paperboard stock, stock that does not contain contaminated materials and extraneous foreign materials, such as metals and glass, that could be retained in the finished product. Suitable chemicals may be introduced to improve flame resistance, processing, adhesive and cohesive qualities, and handling characteristics. The added chemicals must not create a health hazard.~~

~~The basic material must be processed into a form suitable for installation by pneumatic conveying equipment and simultaneous mixing with water or adhesive at the spray nozzle.~~

~~(2) All testing must be performed on spray applied cellulose.~~

~~(3) Determination of thermal performance must be in accordance with subpart 2, item C, at the test defined density of the material. R value testing must be performed at a thickness of material of two inches, unless the material is designed for use at a lesser maximum thickness and the material is so designated on the label or label notice by the manufacturer. It must then be tested at the maximum thickness of suggested use.~~

~~(4) Density must be determined in accordance with ASTM E 605. The density established by this test must be used in the preparation of manufacturer's installation guidelines and in the determination of thermal performance.~~

~~(5) Critical radiant flux and smoldering combustion must be in accordance with ASTM C 739, or the CPSC Interim Safety Standard for Cellulose Insulation, Code of Federal Regulations, title 16, part 1209.~~

~~(6) Moisture absorption must be determined in accordance with section 14 of ASTM C 553. Moisture absorption must not exceed 15 percent by weight.~~

~~(7) The product must 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.~~

~~Exception: Testing and compliance with bond strength criteria are not required of products that are intended only for installation in enclosed cavities, and the product is identified as intended only for these installations.~~

~~(8) Corrosion must be in accordance with ASTM C 739, or the CPSC Interim Safety Standard for Cellulose Insulation, Code of Federal Regulations, title 16, part 1209.~~ If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.8, for corrosion, then a test of the product in spray-applied form is unnecessary.

~~(9) Odor emission must be in accordance with ASTM C 739, or the CPSC Interim Safety Standard for Cellulose Insulation, Code of Federal Regulations, title 16, part 1209.~~ (2) If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.10, for odor emission, then a test of the product in spray-applied form is unnecessary.

~~(10) Fungi resistance must be in accordance with ASTM C 739, or the CPSC Interim Safety Standard for Cellulose Insulation, Code of Federal Regulations, title 16, part 1209.~~ (3) If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.7, for fungi resistance, then a test of the product in spray-applied form is unnecessary.

[For text of subps 4 to 7, see M.R.]

Subp. 8. **Other insulation.** Insulation other than insulation specified in subparts 1 to 7 must comply with the requirements in items A to F.

[For text of items A to D, see M.R.]

E. 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, or ASTM C 553, section 15.

[For text of item F, see M.R.]

7640.0160 APPLICATION AND INSTALLATION STANDARDS.

[For text of subpart 1, see M.R.]

Subp. 2. **Application and inspection.**

[For text of items A to D, see M.R.]

E. Installation of radiant barrier systems must be in conformance with ASTM C 1158.

F. Installers of urea formaldehyde foam insulation shall conform with *Minnesota Statutes*, section 325F.18, and *Minnesota Rules*, parts 4620.1600 to 4620.2100.

~~F.~~ G. State and local agencies using appropriated federal funds and persons contracting with state or local agencies with respect to work performed under the contracts shall comply with Code of Federal Regulations, title 40, part 248, Guideline for Federal Procurement of Building Products Containing Recovered Materials.

[For text of subp 3, see M.R.]

7640.0180 INCORPORATIONS BY REFERENCE AND CITATIONS.

[For text of subpart 1, see M.R.]

Subp. 2. **ASTM.** The following ASTM standards are incorporated by reference:

A. ASTM C ~~168-88a~~ 168-90, ~~Standard Definitions of Terms~~ Terminology Relating to Thermal ~~Insulation~~ Insulating Materials.

[For text of item B, see M.R.]

C. ASTM C ~~236-87~~ 236-89, Standard Test Method for Steady State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box.

[For text of item D, see M.R.]

E. ASTM C 516-80 (reapproved ~~1985~~ 1990), Standard Specification for Vermiculite Loose-Fill Thermal Insulation.

F. ASTM C ~~518-85~~ 518-91, Standard Test Method for Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

G. ASTM C 549-81 (reapproved ~~86~~ 1986), Standard Specification for Perlite Loose Fill Insulation.

[For text of items H to K, see M.R.]

L. ASTM C ~~727-72 (reapproved 1978)~~ 727-90, Standard Recommended Practice for Use of Reflective Insulation in Building Constructions.

M. ASTM C ~~739-88~~ 739-91, Standard Specification for Cellulosic Fiber (wood-base) Loose-Fill Thermal Insulation.

N. ASTM C ~~764-88~~ 764-91, Standard Specification for Mineral Fiber Loose-Fill Thermal Insulation.

[For text of item O, see M.R.]

P. ASTM C ~~976-82~~ 976-90, Standard Test Method for Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box.

KEY: PROPOSED RULES SECTION — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." **ADOPTED RULES SECTION** — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

[For text of item Q, see M.R.]

R. ASTM C 1015-84 (reapproved 1990), Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation.

S. ASTM C ~~1029-85~~ 1029-90, Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation.

[For text of items T and U, see M.R.]

V. ASTM C 1149-90, Specification for Self-Supported Spray-Applied Cellulosic Thermal, or Acoustical Insulation, or Both.

W. ASTM C 1158-90, Practice for Use and Installation of Radiant Barrier Systems (RBS) in Building Constructions.

X. ASTM D 2842-69 (reapproved 1975), Standard Test Method for Water Absorption of Rigid Cellular Plastics.

~~W.~~ Y. ASTM E 84-84 Revision A, Surface Burning Characteristics of Building Materials.

~~X.~~ Z. ASTM E 408-71 (reapproved 1985), Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection Meter Techniques.

~~Y. ASTM E 605-77 (reapproved 1982), Thickness and Density of Sprayed Fire-Resistive Material Applied to Structural Members.~~

~~Z. ASTM E 736-86, Test for Cohesion/Adhesion of Sprayed Fire Resistive Materials Applied to Structural Members.~~

[For text of subp 2a, see M.R.]

Subp. 3. **Other incorporation and citations.** The following non ASTM standards are also incorporated by reference:

[For text of items A to E, see M.R.]

F. Uniform Building Code (~~1985~~ 1988 Edition), by the International Conference of Building Officials.

[For text of items G to L, see M.R.]

Subp. 4. **Availability.** The standards incorporated by reference are available for public inspection as follows:

A. All documents incorporated by reference in this chapter are available at the ~~following locations:~~

~~(1)~~ Minnesota State Law Library~~; and~~

~~(2) James J. Hill Reference Library~~.

[For text of item B, see M.R.]

REPEALER. *Minnesota Rules*, part 7640.0120, subpart 26, is repealed.

Veterans Homes Board

Proposed Permanent Rules Relating to Facility Services; Resident Rights; Responsibilities

Notice of Intent to Adopt a Rule Without a Public Hearing and Notice of Intent to Adopt a Rule With a Public Hearing If Twenty-five or More Persons Request a Hearing

NOTICE IS HEREBY GIVEN that the Minnesota Veterans Homes Board of Directors proposes to adopt the above-entitled rule without a public hearing following the procedures set forth in *Minnesota Statutes*, sections 14.22 to 14.28. The specific statutory authority to adopt the rule is *Minnesota Statutes*, section 198.003, as amended by *Laws of Minnesota 1991*, Chapter 24.

Persons interested in this rule shall have 30 days in which to submit comment in support of or in opposition to the proposed rule or any part or subpart of the rule and comment is encouraged. Each comment should identify the portion of the proposed rule addressed, the reason for the comment, and any change proposed.

Any person may make a written request for a public hearing on the rule within the 30-day comment period. If 25 or more persons submit a written request for a public hearing within the 30-day comment period, a public hearing will be held unless a sufficient number withdraw their request in writing. Any person requesting a public hearing should state his or her name and address, and is encouraged to identify the portion of the proposed rule addressed, the reason for the request, and any change proposed. If a public hearing is required, the agency will proceed pursuant to *Minnesota Statutes*, section 14.131 to 14.20. PLEASE NOTE THAT IF TWENTY-FIVE OR MORE PERSONS SUBMIT WRITTEN REQUESTS FOR A PUBLIC HEARING WITHIN THE 30-DAY COMMENT PERIOD, A HEARING WILL BE HELD ON TUESDAY, JANUARY 28, 1992, UNLESS A SUFFICIENT NUMBER WITHDRAW THEIR REQUEST, IN ACCORDANCE WITH THE NOTICE OF PUBLIC HEARING ON THESE SAME RULES PUBLISHED IN THIS *STATE REGISTER* AND MAILED TO PERSONS REGISTERED WITH THE VETERANS HOMES BOARD.

OWENS-CORNING FIBERGLAS

OWENS-CORNING FIBERGLAS CORPORATION FIBERGLAS TOWER, TOLEDO, OHIO 43659, (419) 248-8000

January 15, 1992

Bruce Nelson
Department of Public Service Energy Division
790 American Center Building
150 East Kellogg Blvd.
St. Paul, MN 55101

Subject: Proposed Permanent Rules Relating to Thermal Insulation Standards

Dear Bruce:

Owens/Corning Fiberglas Corporation would like to offer comments on the amendments to Minnesota Rules Chapter 7640. These comments are intended to provide clarity to the amendments and can be addressed without the need for a public hearing.

7640.0130 Insulation Materials Standards

Page 2, Line 34: Subp. 3. Cellulose insulation: The existing requirements are deleted and replaced by a reference to ASTM C1149. The C1149 "Standard Specification for Self-Supporting Spray Applied Cellulosic Thermal/Acoustical Insulation" covers two types of materials. Type I is material applied with liquid adhesive. Type II is material containing a dry adhesive that is activated by water during installation.

The final product having an activated adhesive will be chemically different than the product in loose-fill form whether or not the loose-fill form contains dry adhesive. The activated adhesive on the final product can affect the corrosion, odor and fungi characteristics of the installed product.

Therefore, it is not correct to pass the product in its loose form and not require qualification tests on the spray-applied form.

Page 4, Line 8-10: As indicated above there is no justification for not testing a product with adhesive for its corrosiveness. Lines 8 through 10 should be deleted.

Page 4, Line 14-16: As indicated above there is no justification for not testing a product with adhesive for its odor emission. Lines 14 through 16 should be deleted.

Page 4, Line 20-22: As indicated above there is no justification for not testing a product with adhesive for its fungi resistance. Lines 20 through 22 should be deleted.

Page 4, Line 31: The proposed rules changes added ASTM C553 Section for cold storage applications and utilizes a very cumbersome technique of analyzing the odor adsorbed by butter. This odor method has been eliminated in the 1992 C553 and replaced with the odor method in C665. This change will be effective about April 1992. For this reason, the reference to ASTM C553 should include the latest version of the standard, C553-92.

T. C. Grether

TCG/ssb

AFFIDAVIT OF MAILING

In the Matter of the Proposed Amendment of Rules of the Minnesota Department of Public Service Governing Residential Thermal Insulation Standards (Minn. Rules ch. 7640)

AFFIDAVIT OF MAILING THE NOTICE OF INTENT TO ADOPT A RULE WITHOUT A PUBLIC HEARING

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

MARLENE ODEEN, being first duly sworn deposes and says:

I hereby certify that on the 6th day of December, 1991, at the City of St. Paul, County of Ramsey, State of Minnesota, I mailed the attached Notice of Intent to Adopt a Rule Without a Public Hearing by depositing in the State of Minnesota Central Mail System, a copy thereof, with postage prepaid, to all persons and associations who have requested, pursuant to Minnesota Statutes, sections 14.14, subdivision 1a and 14.22 or 14.30, that their names be placed on the Minnesota Department of Public Service rulemaking mailing list.

Marlene Odeen
(name)

Secretary
(title)

Subscribed and sworn to before me
this 6th day of December, 1991.

Miriam L. Stohl
Notary Public

MIRIAM L. STOHL
NOTARY PUBLIC—MINNESOTA
RAMSEY COUNTY
MY COMMISSION EXPIRES 2-25-97

AFFIDAVIT OF CERTIFICATE OF MAILING LIST

In the Matter of the Proposed Amendment of Rules of the Minnesota Department of Public Service, Energy Division, Governing Residential Thermal Insulation Standards

AFFIDAVIT OF CERTIFICATE OF MAILING LIST FOR NOTICE OF INTENT TO ADOPT A RULE WITHOUT A PUBLIC HEARING

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

Judith Schmidt, being first duly sworn deposes and says:

I hereby certify that the list of persons and associations who have requested, pursuant to Minnesota Statutes, sections 14.14, subdivision 1a and 14.22 or 14.30, that their names be placed on the Minnesota Department of Public Service rulemaking mailing list is accurate, complete, and current as of this 27th day of November, 1991.

Judith Schmidt
(name)

Data Processing Coord.
(title)

Subscribed and sworn to before me this 27th day of November, 1991.

Miriam L. Stohl
Notary Public

MIRIAM L. STOHL
NOTARY PUBLIC—MINNESOTA
RAMSEY COUNTY
MY COMMISSION EXPIRES 2-25-97

<<<< R U L E S >>>>

People receiving information on rule changes

Company / Person	Street / City, State, Zip	Code
DAVID DURENBERGER	RUSSELL BLDG-RM 154 WASHINGTON, DC 20510	MCD
MICHAEL JOHNSON	117 FIFTH ST W - BOX 93 BLUE EARTH, MN 56013	RULES
JAMES L OBERSTAR	RAYBURN OFFICE BLDG-RM 2351 WASHINGTON, DC 20515	MCD
RONALD E OLSON	5416 70TH ST W EDINA, MN 55435	RULES
TIMOTHY PENNY	CANNON OFFICE BLDG-RM 436 WASHINGTON, DC 20515	MCD
ALFRED J ROSS	6356 WARE RD LINO LAKES, MN 55014	RULES
MARTIN O SABO	RAYBURN OFFICE BLDG. - RM 2201 WASHINGTON, DC 20515	MCD
BRUCE F VENTO	RAYBURN OFFICE BLDG. - RM 2304 WASHINGTON, DC 20515	MCD
VIN WEBER	CANNON OFFICE BLDG. - RM 106 WASHINGTON, DC 20515	MCD
PAUL WELLSTONE	HART STATE OFFICE BLDG-RM SH506 WASHINGTON, DC 20510	MCD
ADMIN HEARING OFFICE SAM RUHLE	310 FOURTH AVE - RM 400 MINNEAPOLIS, MN 55415	RULES
ALABAMA DEPT OF ENERGY & COMM AFFR THOMAS HOLMES	3465 NORMAN BRIDGE RD PO BOX 250347 MONTGOMERY, AL 36125	SEO
ALASKA ENERGY OFFICE	949 E. 36TH AVE - RM 400 ANCHORAGE, AK 99508	SEO
ARIZONA ENERGY OFFICE MARK GINSBERG	1700 WASHINGTON ST W PHOENIX, AZ 85007	SEO
ARKANSAS ENERGY OFFICE-ECON PLAN	1 CAPITOL MALL-RM 2C 105 LITTLE ROCK, AR 72201	SEO
BEMIDJI CHAMBER OF COMMERCE	BOX 850 BEMIDJI, MN 56601	RULES

<<<< R U L E S >>>>

People receiving information on rule changes

Company / Person	Street / City, State, Zip	Code
BRAINERD WATER & LIGHT DEPT WALTER C SJOLUND	501 LAUREL ST-BOX 373 BRAINERD, MN 56401	RULES
BROEKER BEER LMTD. JOHN M BROEKER	8500 NORMANDALE LK BLVD #1510 MINNEAPOLIS, MN 55437	RULES
CALIFORNIA ENERGY COMMISSION	1516 NINTH ST SACRAMENTO, CA 95814	SEO
CARLTON COUNTY HUMAN SERVICES WILLIAM K. PINSONNAULT	BOX 316, 1215 AVENUE C CLOQUET, MN 55720	RULES
CITY OF BELLE PLAINE DAVID J UNMACHT	420 MAIN ST E BELLE PLAINE, MN 56011	RULES
CITY OF CIRCLE PINES JAMES KEINATH	200 CIVIC HEIGHTS CIRCLE CIRCLE PINES, MN 55014	RULES
CLOQUET CITY OF WILLIAM SCHLENVOGT	508 CLOQUET AVE CLOQUET, MN 55720	RULES
COLORADO OFFICE OF ENERGY CONSERV ROLAND RIVERA	112 14TH AVE E DENVER, CO 80203	SEO
COLUMBIA DIST OF ENERGY UNIT	613 G ST. N.W. WASHINGTON, DC 20001	SEO
CONNECTICUT ENERGY DIVISION BRADFORD S. CHASE	80 WASHINGTON ST HARTFORD, CT 06106	SEO
COOPERATIVE POWER ASSN ROBERT P AMBROSE	14615 LONE OAK RD EDEN PRAIRIE, MN 55344	RULES
COOPERATIVE POWER ASSN ADE MUSSELL	14615 LONE OAK ROAD EDEN PRAIRE, MN 55344	RULES
COTTONWOOD CO OFFICES FARLEY BRUNIG	COURTHOUSE WINDOM, MN 56101	RULES
DAIRYLAND POWER COOPERATIVE ALBERT D DIAL	BOX 817 LACROSSE, WI 54602	RULES
DELAWARE ENERGY OFFICE	FEDERAL ST-BOX 1401 DOVER, DE 19903	SEO
DONOVAN CO INC JAMES A SMITH	100 OWASSO BLVD E ST PAUL, MN 55117	RULES

<<<< R U L E S >>>>

People receiving information on rule changes

Company / Person	Street / City, State, Zip	Code
DORSEY AND WHITNEY BECKY A COMSTOCK	220 SIXTH ST S-RM 2300 MINNEAPOLIS, MN 55402	RULES
DORSEY AND WHITNEY WILLIAM J. KEPPEL	2200 FIRST BANK PL E MINNEAPOLIS, MN 55402	RULES
E W A INC	133 FIRST AVE NORTH MINNEAPOLIS, MN 55401	RULES
ENERGY PROGRAM DEPT OF CONS AFFAIRS NELSON ESPINELL	PO BOX 41059-MINILLAS STATION SANTRUCE, PR 00940	SEO
ENERGY RESOURCE CENTER VALDI STEFANSON	427 ST CLAIR AVE ST PAUL, MN 55102	RULES
FARIBAULT AREA CHAMBER OF COMMERCE ELAINE KENOW	228 CENTRAL AVE -- P. O. BOX 434 FARIBAULT, MN 55021	RULES
FLORIDA ENERGY OFFICE	BRYANT BLDG-RM 301 TALLAHASEE, FL 32301	SEO
FRIDLEY CITY OF JIM ROBINSON	6431 UNIVERSITY AVE NE FRIDLEY, MN 55432	RULES
GEO. A. HORMEL & CO DOUGLAS D. HAHN, P.E.	BOX 800 AUSTIN, MN 55912	RULES
GEORGIA OFFICE OF ENERGY RESOURCES	270 WASHINGTON ST SW-STE 615 ATLANTA, GA 30334	SEO
GUAM ENERGY OFFICE	BOX 2950 AGANA, GM 96910	SEO
HASTINGS CITY OF THOMAS HARMENING	100 SIBLEY ST HASTINGS, MN 55033	RULES
HAWAII ENERGY OFFICE	335 MERCHANT ST. RM 110 HONOLULU, HI 96813	SEO
HENN CNTY ENVIRONMENT & ENERGY OFF RAY BALL	300 SOUTH SIXTH ST #A-2309 MINNEAPOLIS, MN 55487	RULES
HENN CNTY ENVIRONMENT & ENERGY OFF LUTHER D. NELSON	822 SOUTH 3RD ST. SUITE 300 MINNEAPOLIS, MN 55415	RULES
HENNEPIN CO PROPERTY MANAGEMENT JOHN G MCMILLAN	HENN CNTY GOVT CNTR.BLDG OFC-A LEVL MINNEAPOLIS, MN 55487	RULES

<<<< R U L E S >>>>

People receiving information on rule changes

Company / Person	Street / City, State, Zip	Code
HESSIAN, MCKABY AND SODERBERG JEROME M. SODERBERG	4700 IDS Center Minneapolis, MN 55402	RULES
HONEYWELL INC W C VIITALA	HONEYWELL PLAZA-BOX 524 MINNEAPOLIS, MN 55440	RULES
IDAHO OFFICE OF ENERGY	450 STATE ST. W BOISE, ID 83720	SEO
ILLINOIS INST OF NAT RESOURCES	325 ADAMS ST W-RM 300 SPRINGFIELD, IL 62704	SEO
INDIANA ENERGY OFFICE	1 CAPITOL ST N-STE 700 INDIANAPOLIS, IN 46204	SEO
IOWA DEPT OF NATURAL RESOURCES ENERGY BUREAU	WALLACE STATE OFFICE BLDG DES MOINES, IA 50319	SEO
KANSAS CORP COMM-RESEARCH & ENERGY	STATE OFFICE BLDG-FOURTH FLR TOPEKA, KS 66612	SEO
KENTUCKY ENERGY CABINET LANA ROGERS	P.O. BOX 3249 FRANKFORT, KY 40603	SEO
LAKE SUPERIOR INDUSTRIAL BUREAU ALFRED E FRANCE	306 SUPERIOR ST W-#1408 ALWORTH DULUTH, MN 55802	RULES
LEHMANN & ASSOC INC ERNEST K LEHMANN	430 FIRST AVE N. - RM 790 MINNEAPOLIS, MN 55401	RULES
LEVANDER GILLEN MILLER & MAGNUSON ROGER C MILLER	633 CONCORD ST-RM 402-BOX 298 S ST PAUL, MN 55075	RULES
LINDBERG ASSOCIATES CLARENCE P LINDBERG	750 PLAZA DR S MENDOTA HTS, MN 55120	RULES
LOUISIANA DEPT OF NAT RESOURCES	BOX 94396 BATON ROUGE, LA 70804	SEO
LUVERNE CITY OF STEVEN L. PERKINS	203 MAIN ST E - BOX 348 LUVERNE, MN 56156	RULES
LYMAN LUMBER CO JUDITH A. JANICKE	300 MORSE AVE - BOX 40 EXCELSIOR, MN 55331	RULES
MAINE OFFICE OF ENERGY RESOURCES	STATE HOUSE-STN 53 AUGUSTA, ME 04333	SEO

<<<< R U L E S >>>>

; Peoole receiving information on rule changes ;

Company / Person	Street / City, State, Zip	Code
MANKATO AREA CHAMBER OF COMMERCE	BOX 999 MANKATO, MN 56002	RULES
MARYLAND ENERGY OFFICE JAN SHOREY	45 CALVERT ST. ANNAPOLIS, MD 21401	SEO
MASSACHUSETTS ENERGY POLICY OFFICE	100 CAMBRIDGE ST-RM 1500 BOSTON, MA 02202	SEO
MICHIGAN ENERGY ADMINISTRATION	BOX 30228 LANSING, MI 48909	SEO
MINN ASSN OF TOWNSHIPS DAVID FRICKE	BOX 267 - 705 CENTRAL AVE. E. ST MICHAEL, MN 55376	RULES
MINN ATTORNEY GEN OFC-ANTITRUST DIV THOMAS F PURSELL	117 UNIV AVE - SECOND FLR ST PAUL, MN 55155	RULES
MINN AUTO DEALERS ASSN LOUIS W CLAESON JR	277 UNIVERSITY AVE ST PAUL, MN 55103	RULES
MINN COOPERATIVES ASSN OF ALLEN GERBER	480 CEDAR ST - RM 580 ST PAUL, MN 55101	RULES
MINN GOVERMENT REPORT JEAN DAWSON	STATE CAPITAL BLDG - PRESS RM B2 ST PAUL, MN 55155	RULES
MINN HOUSING FINANCE AGENCY HEIDE E. WHITNEY	400 SIBLEY ST - STE 300 ST PAUL, MN 55101	RULES
MINN LEGIS COMM TO REVIEW ADMIN RUL MARYANNE V HRUBY	STATE OFFICE BLDG - RM 55 ST PAUL, MN 55155	RULES
MINN MULTI HOUSING ASSN JOHN HORNER	4740 PARK GLEN RD MINNEAPOLIS, MN 55416	RULES
MINN PETROLEUM COUNCIL DARREL BUNGE	350 ST. PETER ST. - RM 1025 ST PAUL, MN 55102	RULES
MINN POLLUTION CONTROL AGENCY Gerald Willet	520 LAFAYETTE RD. N. ST. PAUL, MN 55155	RULES
MINN POWER CO ELAINE DEBEIR	30 SUPERIOR ST W DULUTH, MN 55802	RULES
MINN POWER CO JAMES A ROBERTS	30 SUPERIOR ST W DULUTH, MN 55802	RULES

<<<< R U L E S >>>>

People receiving information on rule changes

Company / Person	Street / City, State, Zip	Code
MINN STATE UNIV SYSTEM MARY E STANTON	555 PARK ST-STE 230 ST PAUL, MN 55105	RULES
MINNEGASCO TRACY BRIDGE	201 SEVENTH ST S MINNEAPOLIS, MN 55402	RULES
MINNEGASCO INC. GEORGE H. LOFGREN	P.O. BOX 1165 MINNEAPOLIS, MN 55440	RULES
MINNESOTA SENATE DONALD J FRANK	STATE CAPITOL BLDG-RM 810 ST PAUL, MN 55155	RULES
MISSISSIPPI DEPT OF ENERGY	510 GEORGE ST-STE 300 JACKSON, MS 39202	SEO
MISSOURI DIV OF ENERGY	BOX 176 JEFFERSON CITY, MO 65102	SEO
MONTANA ENERGY DIV	1520 E. 6TH AVE HELENA, MT 59620	SEO
MONTEVIDEO CITY OF A.J. JOHNSON	BOX 676 MONTEVIDEO, MN 56265	RULES
MONTICELLO CITY OF	250 BROADWAY ST E MONTICELLO, MN 55362	RULES
MPLS BLDG OWNERS & MGRS ASSN INC. ARTHUR W OLOFSON	927 SOO LINE BLDG-105 5TH ST S. MINNEAPOLIS, MN 55402	RULES
NEBRASKA ENERGY OFFICE ANN BROCKHOFF	BOX 95085 LINCOLN, NB 68509	SEO
NEVADA COMM SERVICES-ENERGY OFFICE	1100 WILLIAM ST E RM 117 CARSON CITY, NV 89710	SEO
NEW HAMPSHIRE GOV COUNCIL ON ENERGY MALTZIE SCOTT	2 1/2 BEACON ST CONCORD, NH 03301	SEO
NEW JERSEY DEPT OF COMM & ECON DEV ROBERT J. GOLDEN JR.	101 COMMERCE ST RM 204 NEWARK, NJ 07102	SEO
NEW MEXICO DEPT OF ENERGY &MINERALS	2040 PACHECO ST SANTA FE, NM 87505	SEO
NEW YORK STATE ENERGY OFFICE CHARLES STUBER	2 ROCKEFELLER PLAZA-10TH FLR ALBANY, NY 12223	SEO

<<<< R U L E S >>>>

People receiving information on rule changes

Company / Person	Street / City, State, Zip	Code
NORTH CAROLINA ENERGY DIV	BOX 25249 RALEIGH, NC 27611	SEO
NORTH DAKOTA OFFICE OF ENERGY	STATE CAPITOL BLDG-14TH FL BISMARCK, ND 58505	SEO
NORTH MARIANA ISLANDS ENERGY PLANNR	P.O. BOX 340 SAIPAN, MR 96950	SEO
NORTHERN PRODUCTS LOG HOMES, INC. Allison T. Beaulieu	P.O. BOX 616 BANGOR, ME 04401	RULES
NORTHERN STATES POWER C. GARY ANDERSON	414 NICOLLET MALL MINNEAPOLIS, MN 55401	RULES
NORTHERN STATES POWER - LAW DEPT. JOSEPH D. BIZZANO JR.	414 NICOLLET MALL MINNEAPOLIS, MN 55401	RULES
NORTHERN STATES POWER CO KEITH H WIETECKI	414 NICOLLET MALL MINNEAPOLIS, MN 55401	RULES
NORTHERN SUN ALLIANCE JOAN VANHALA	1519 FRANKLIN AVE E MINNEAPOLIS, MN 55404	RULES
OHIO DEPT OF ENERGY	30 BROAD ST E-24TH FLOOR COLUMBUS, OH 43266	SEO
OKLAHOMA DEPT OF ENERGY	2101 N. LINCOLN BLVD. OKLAHOMA CITY, OK 73105	SEO
OREGON DEPT OF ENERGY	625 MARION ST NE SALEM, OR 97310	SEO
OWATONNA PUBLIC UTILITIES DAVID M. MARTIN	P.O. BOX 800 OWATONNA, MN 55060	RULES
PEPIN DAYTON HERMAN JOHN H HERMAN	150 FIFTH ST-STE 2300 MINNEAPOLIS, MN 55402	RULES
PHILLIPS LEGISLATIVE SERVICE INC WILLIAM L PHILLIPS	459 RICE ST - 3RD FLOOR ST PAUL, MN 55103	RULES
POPHAM HAIK LAW FIRM ROBERT S BURK	3300 PIPER JAFFERY TOWER MINNEAPOLIS, MN 55402	RULES
Q S S INC CHARLES KROEGER	BOX 838 FARIBAULT, MN 55021	RULES

<<<< R U L E S >>>>

People receiving information on rule changes

Company / Person	Street / City, State, Zip	Code
REGION FIVE REG DEVEL COMM DAVE WEIRENS	611 IOWA AVE STAPLES, MN 56479	RULES
RHODE ISLAND ENERGY OFFICE	275 WESTMINISTER MALL PROVIDENCE, RI 02903	SEO
RICHFIELD CITY OF BRUCE NORDQUIST	6700 PORTLAND AVE S RICHFIELD, MN 55423	RULES
SAAB CHRISTOPHER K. SANDBERG	BREMER TOWER-RM 1100 ST PAUL, MN 55101	RULES
SAMOA ENERGY OFFICE MATT Le'i	TERRITORIAL ENERGY OFFICE PAGO PAGO, SM 96799	SEO
SIERRA CLUB	1313 - 5TH ST. S.E. RM 323 MINNEAPOLIS, MN 55414	RULES
SMITH ARCHITECTURE & PLANNING RALPH SMITH	101 N MAIN ST FUQUAY VARINA, NC 27626	
SOUTH CAROLINA ENERGY OFFICE	1201 MAIN ST #1710 COLUMBIA, SC 29201	SEO
SOUTH DAKOTA OFFICE-ENERGY POLICY MERRILL VANBERPEN	217 W. MISSOURI #200 PIERRE, SD 57501	SEO
ST CLOUD AREA CHAMBER OF COMMERCE THOMAS MOORE	26 N. SIXTH AVE ST CLOUD, MN 56302	RULES
ST LOUIS CO PLANNING & ZONING OFF MARK JOHNSON	COURTHOUSE DULUTH, MN 55802	RULES
ST PAUL CITY OF JAN GAFTERLAND	445 CITY HALL ST PAUL, MN 55102	RULES
STATE GOVERNMENT AFFAIRS 3M CO WILLIAM J. LANGLOIS	BLDG 225-5N-04 3M CENTER ST PAUL, MN 55144	RULES
TENNESSEE ENERGY OFFICE	320 - 6TH AVE. N. NASHVILLE, TN 37219	SEO
TEXAS ENERGY OFFICE	1700 NO. CONGRESS AVE SUITE 640 AUSTIN, TX 78701	SEO
THE ENERGY CONSERVATORY ROBERT NEVITT	5158 BLOOMINGTON AVE S MINNEAPOLIS, MN 55417	RULES

<<<< R U L E S >>>>

People receiving information on rule changes

Company / Person	Street / City, State, Zip	Code
TRI COUNTY COMM ACTION PROG MARK G SEXTON	404 SECOND AVE NE LITTLE FALLS, MN 56345	RULES
U OF M ROBERT W SNYDER	1994 BUFORD AVE-RM 248COB ST PAUL, MN 55108	RULES
U S DEPT OF INTERIOR-FISH &WILDLIFE ROBERT F. WELFORD	400 SIBLEY ST-STE 50 ST PAUL, MN 55101	RULES
U.S. HOUSE OF REPRESENTATIVES BERRY SIKORSKI	CANNON OFFICE BLDG-RM 414 WASHINGTON, DC 20515	MCD
UNITED POWER ASSN BRUCE HAUSCHULZ	HIGHWAY 10 ELK RIVER, MN 55330	RULES
UNITED POWER ASSN REYNOLD S RAHKO	HWY 10 E ELK RIVER, MN 55330	RULES
UNOCAL CORP DAVE HENDERSON	1650 GOLF RD E SCHAUMBURG, IL 60196	RULES
UPPER MINN VALLEY REG DEVEL COMM OTTO SCHMID	323 SCHLIEMAN AVE W APPLETON, MN 56208	RULES
UTAH ENERGY OFFICE - 3 TRAID CENTER MICHAEL JOHNSON	355 WEST NORTH TEMPLE - Room 450 SALT LAKE CITY, UT 84180	SEO
VERMONT STATE ENERGY OFFICE	STATE OFFICE BLDG MONTPELIER, VT 05602	SEO
VIRGIN ISLANDS ENERGY OFFICE	OLD CUSTOMS HOUSE FREDERIKSTED, VI 00840	SEO
VIRGINIA ENERGY OFFICE JENNIFER SNEAD	2201 W. BROAD ST. RICHMOND, VA 23220	SEO
WALDORF CORP BARY KAZUIKEWICA	2250 WABASHA ST ST PAUL, MN 55114	RULES
WASHINGTON STATE ENERGY OFFICE	400 UNION ST E-FIRST FL OLYMPIA, WA 98504	SEO
WINTHROP AND WEINSTINE JOHN A KNAPP	30 E 7TH ST #3200 WLD TRD CTR ST PAUL, MN 55101	RULES
WISCONSIN STATE PLANNING&ENERGY DIV	BOX 7868 MADISON, WI 53707	SEO

<<<< R U L E S >>>>

People receiving information on rule changes

Company / Person	Street / City, State, Zip	Code
WYOMING ENERGY CONSERVATION OFFICE	2301 CENTRAL AVE CHEYENNE, WY 82002	SEO
YAGGY, COLBY ASSOCIATES	717 THIRD AVE SE BOX 7038 ROCHESTER, MN 55903	RULES
ZENK, READ, TYPSTAD & ASSOC. LARRY A READ	BOX 689-OLD HIGHWAY 65 N. ALBERT LEA, MN 56007	RULES

STATE OF MINNESOTA
DEPARTMENT OF PUBLIC SERVICE

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

AFFIDAVIT OF ADDITIONAL DISCRETIONARY NOTICE

STATE OF MINNESOTA)
) SS.
COUNTY OF RAMSEY)

MARLENE ODEEN, being duly sworn, deposes and says:

1. That in addition to giving the statutorily required rulemaking notice in the above-captioned matter, the Department of Public Service provided additional discretionary notice to the persons on the attached mailing list. The persons on the mailing list include thermal insulation manufacturers, some of whom are small businesses within the meaning of Minn. Stat. Subd. 14.115 (1988). The Department has given this notice in accordance with Minn. Stat. Subd. 14.115, subp. 4 (1988) in order to provide an opportunity for small businesses to participate in the rulemaking process.

2. This additional discretionary notice was given on the 5th day of December, 1991, when the Department of Public Service served its "Notice of Intent to Adopt a Rule Without a Public Hearing" on the persons on the mailing list referred to in paragraph 1 above by depositing in the State of Minnesota Central Mail system or in the United States mail for first class mailing at said City of St. Paul, a copy thereof, properly enveloped, with postage prepaid, and addressed to said persons.

Marlene Odeen
(name)

Secretary
(title)

Subscribed and sworn to before me this 5th day of December 1991.

Miriam L. Stohl
Notary Public

MIRIAM L. STOHL
NOTARY PUBLIC—MINNESOTA
RAMSEY COUNTY
MY COMMISSION EXPIRES 2-25-97

INSULATION MANUFACTURERS RECEIVING ADDITIONAL DISCRETIONARY NOTICE -- December, 1991

Dennis Kahnke
Kahnke Insulation Products
206 W 11TH ST
REDWOOD FALLS, MN 56283-2004

Terry Wildeboer
American Energy Products
1175 E GARVEY AVE
COVINA, CA 91724-3618

Alisa Hoffee
Amoco Foam Products Company
400 NORTHRIDGE RD #1000
ATLANTA, GA 30350-3312

Jesse Argon
Ark-Seal International, Inc.
2185 Janson S
Denver, CO 80223

Bill Belvedere
Insulated Masonry Systems, Inc.
Bellar, Inc.
7104 OHMS LN #213
MINNEAPOLIS, MN 55439-2140

J. John Brouk, Sr.
Brouk Company
1367 S KINGSHIGHWAY BLVD
SAINT LOUIS, MO 63110-2107

Ray W. Barkhace
Casco Mineral Wool
1918 S HIGH SCHOOL RD
INDIANAPOLIS, IN 46241-4216

Mark Carlascio
Cellulose Insulation of Nebraska
PO BOX 104
PAPILLION, NE 68046

Bob Harshaw
Central Fiber Corporation
PO BOX 749
WELLSVILLE, KS 66092-0749

Ted Cheney
Cheney Building Systems
2755 S 160TH ST
NEW BERLIN, WI 53151-3601

Paul Juneau
Alfol
PO BOX 7024
CHARLOTTE, NC 28241-7024

Terri Stelter/Ralph Charbnneau
American Insulation Inc.
PO BOX 91
BLOOMER, WI 54724-0091

Dennis W. Rosato
Apache Building Products Co.
2025 E LINDEN AVE
LINDEN, NJ 07036-1147

Edward Todd
Atlas Energy Products
2555 CUMBERLAND PKY NW #200
ATLANTA, GA 30339-3908

John Devine
Benchmark Foam, Inc.
3200 9TH AVE SE
WATERTOWN, SD 57201-9170

Jay Scherr
Carpenter Insulation Company
5016 MONUMENT AVE
RICHMOND, VA 23230-3620

Fred T. Rice
Cellofoam North America, Inc.
1124 ELLINGTON DR NW
CONYERS, GA 30207-4319

Tom Wolf
Celotex Corporation
ONE METRO CENTER
4010 W BOY SCOUT BLVD
TAMPA, FL 33607-5728

John J. DiCesare Jr.
CertainTeed Corporation
PO BOX 860
VALLEY FORGE, PA 19482-0860

Steve Slavik
DiversiFoam Products
9091 COUNTY RD 50
ROCKFORD, MN 55373-9591

Dave Ledvinka
Dow Chemical U.S.A.
Research Ctr. Bldg.
P.O. Box 5150
Granville, OH 43023

Jeff Eggen
EMPRO Corporation
14332 21ST AVE N
MINNEAPOLIS, MN 55447-4631

James Larson / Greg Larson
Energy Zone Mfg. Inc.
PO BOX 205
BUFFALO, MN 55313-0205

Theo A. Deal
Fibrex, Inc.
PO BOX 1148
AURORA, IL 60507-1148

James L. Anderson
Foam Enterprises, Inc.
13630 WATER TOWER CIR
MINNEAPOLIS, MN 55441-3704

Chris Habegger
Gaska Tape Inc.
1810 W LUSHER AVE
ELKHART, IN 46517-1311

Larry Cochrane
Halstead Industrial Products Group
PO BOX Y-1
GREENSBORO, NC 27402-2050

Hugh McAdams
IPI Division of PMC, Inc.
PO BOX 70
ELKTON, MD 21921-0001

Tom Farrell
Infloor, Inc.
920 HAMEL RD
HAMEL, MN 55340-9610

Jerry DePauw
Insul-Mor Mfg., Ltd.
PO BOX 259
OREGON, IL 61061-0259

Dave Williams
Dow Chemical U.S.A.
B-106 BUILDING
FREEPORT, TX 77541

Bowen Hyma
Foil-Ray, Inc.
PO BOX 387
BROOMFIELD, CO 80038-0387

Robert Cella
Facile Technologies, Inc.
185 6th Ave
Patterson, NJ 07509

Gregory A. Brandt
Firestone Building Products Company
525 CONGRESSIONAL BLVD
CARMEL, IN 46032-5647

Dave Young
Form Products
29W 471N AURORA RD
NAPERVILLE, IL 60563-3918

Robert Niswitz
Guardian Fiberglass, Inc.
1000 E NORTH ST
ALBION, MI 49224-1440

Don Gould
Holland Industries, Inc.
PO BOX 248
GILMAN, IA 50106-0248

Steve Hartman
Industrial Thermo Polymers Ltd.
1255 LORIMAR DR
MISSISSAUGA, ONT., CN L5S 1R2

Mary Wadsworth
Innovative Energy
1119 W 145TH AVE
CROWN POINT, IN 46307-9242

Harold Boyer
International Cellulose Corporation
PO Box 45006
HOUSTON, TX 77245

Ed Gilson
Key Solutions
PO BOX 5090
SCOTTSDALE, AZ 85261-5090

Ken Hegyes
Lamotite
2909 E 79TH ST
CLEVELAND, OH 44104-4004

Richard J. Ray
Manville Sales Corporation
PO BOX 5108
DENVER, CO 80217-5108

Darrell Moeck
Midwest Technologies, Inc.
701 PARKWAY PLACE DR
LITTLE ROCK, AR 72211-3113

Bill Bauer
Modern Insulation, Inc.
PO BOX 157
SPENCER, WI 54479-0001

John Johnson
Northern Insulation Products
414 E. 13th Street
Gibbon, MN 55335

Ed Mirra
Owens Corning Fiberglas Corporation
FIBERGLAS TOWER
TOLEDO, OH 43659-0001

Timothy Grether
Owens Corning Fiberglas Corporation
T-23 FIBERGLAS TOWER
TOLEDO, OH 43659-0001

Paul Anderson
Paul's Insulation, Inc.
PO BOX 115
VERGAS, MN 56587-0115

Vance Roberts
Plymouth Foam Products
1800 Sunset Drive
Plymouth, WI 53073

Gary A. Weinert
R.L. Adams Plastics
2450 BUCHANAN AVE SW
GRAND RAPIDS, MI 49548-1005

Robert Gardner
Knauf Fiber Glass
240 ELIZABETH ST
SHELBYVILLE, IN 46176-1420

Roger Trammell
Macklanburg-Duncan
PO BOX 25188
OKLAHOMA CITY, OK 73125-0188

Dean Hess
Mason City Recycling Center, Ltd.
PO BOX 1534
MASON CITY, IA 50401

Joel Tradup
Mizell Bros. Co.
1170 Eagan Industrial Road
Eagan, MN 55121

Gene Glon
Mortell Co.
Kankakee, IL 60901

John Daugherty
Owens Corning Fiberglas Corporation
Technical Center ROUTE 160
GRANDVILLE, OH 43023

Clifford Smith
Owens Corning Fiberglas Corporation
FIBERGLAS TOWER
TOLEDO, OH 43659-0001

Al Collison/Roger Borgman
Parco, Inc.
PO BOX 1533
NORFOLK, NE 68702-1533

Lee LeClair
Perma "R" Products Inc.
PO BOX 279
GRENADA, MS 38901-0279

Roy Bach / Bob Humbolt
Poly Foam Inc.
116 Pine Street S.
Lester Prairie, MN 55354

Monty Milspaugh
Reflectix, Inc.
PO BOX 108
MARKLEVILLE, IN 46056-0108

Richard W. Baldauf
Silbrico Corporation
6300 RIVER RD
HODGKINS, IL 60525-4257

Mike O'Toole
Smith-Gates Corporation
Farmington, CT 06032

Karl Hipchen
Stepan Company
22 FRONTAGE RD
Northfield, IL 60093

Brian Gerber
Styrene Products, Inc.
5320 FULLER ST
SCHOFIELD, WI 54476-3101

Robert McCauley
Thermal Innovations
715 3rd Street SE
Primghar, IA 51245

Cameron Rusch / Beryl Jenison
Thermo-Pak Mfg. Inc.
PO BOX 1496
FARGO, ND 58107-1496

Charlie Cook
U.S. Mineral Products Co.
PO BOX 5006
HUNTINGTON, IN 46750-5006

Jim Watson
USG Interiors, Inc.
470-4
101 S WACKER DR
CHICAGO, IL 60606-4302

Charmaine Hayward
W.R. Grace and Company
7221 WEST PARKLAND CT
MILWAUKEE, WI 53223

Debra L. Freeberg
Wisconsin EPS, Inc.
PO BOX 669
FOND DU LAC, WI 54936-0669

Dave Siwek
Siwek Lumber & Millwork, Inc.
2536 MARSHALL ST NE
MINNEAPOLIS, MN 55418-3329

Joseph Lohr
Stepan Company
22 Frontage Rd.
Northfield, IL 60093

Henry E Gerhard
Strong-Lite Products Corp.
PO BOX 8029
PINE BLUFF, AR 71611-8029

Alan Mann
Styrotech, Inc.
1620 CENTRAL AVE NE
MINNEAPOLIS, MN 55413-1556

Tony Cellucci
Thermal Wall Systems
PO BOX 2495
NAPERVILLE, IL 60567-2495

Don Joy
Tri-State Insulation
PO BOX 106
MILLER, SD 57362-0106

Herbert Slone
UC Industries, Inc.
TECH. CENTER
137 EAST AVE
TALLMADGE, OH 44278-2339

Frank Malley
W.J. Dennis & Company
1111 DAVIS RD
ELGIN, IL 60123-1388

Mike Hartnett
Louisiana-Pacific Corporation
2001 HITZERT CT
FENTON, MO 63026-2506

Mr. Watts
ALI Insulation
PO BOX 2097
RANCO, CA 91729

Department of Public Service

Proposed Permanent Rules Relating to Thermal Insulation Standards

Rules as Proposed

7640.0110 APPLICABILITY.

Subpart 1. **Types of residential insulation products covered.** This chapter applies to insulation products for use in residential buildings. These include insulation for walls, ceilings, floors, foundation walls, pipe insulation, duct insulation, and retrofit water heater blanket insulation.

Not included are insulation used in manufactured appliances, windows, and doors~~, and insulation used in new manufactured homes assembled outside Minnesota~~.

[For text of subps 2 to 4, see M.R.]

7640.0120 DEFINITIONS.

[For text of subps 1 and 2, see M.R.]

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 (NVLAP), Gaithersburg, Maryland; ~~or~~

B. American Association for Laboratory Accreditation, Gaithersburg, Maryland; or

C. Standards Council of Canada, Ottawa, Ontario, Canada.

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.

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[For text of subps 4 to 25, see M.R.]

Subp. 26. [See repealer.]

7640.0130 INSULATION MATERIALS STANDARDS.

[For text of subpart 1, see M.R.]

Subp. 2. **General testing requirements.** General testing requirements for regulated thermal insulation materials in this part are as follows:

[For text of item A, see M.R.]

B. All regulated thermal insulation materials must be tested for compliance with the standards ~~in this part as follows:~~ according to subitems (1) to (4).

(1) ~~Until April 2, 1986, testing must be performed only at a testing laboratory possessing the appropriate equipment, facilities, and qualified personnel necessary to perform testing required by parts 7640.0130 to 7640.0160. Tests performed in the 1985 calendar year are acceptable.~~

~~(2) After April 2, 1986, all~~ Required testing must be performed by an approved laboratory within two years of the filing of the initial report required by part 7640.0150.

~~(3)~~ (2) The thermal insulation material chosen for testing must be representative of material produced by the manufacturer during normal production runs.

~~(4)~~ (3) Testing for each type of insulation must be performed in accordance with the methods specified in subparts 3 to 8.

~~(5)~~ (4) Insulation must have flammability characteristics in accordance with the ~~UBC~~ Uniform Building Code, sections 1712 and 1713, for its intended uses.

[For text of items C and D, see M.R.]

Subp. 3. **Cellulose insulation.**

[For text of item A, see M.R.]

B. Cellulose fiber spray-applied must ~~meet the following requirements:~~ comply with ASTM C 1149.

(1) ~~The basic material must consist of virgin or~~

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~~recycled-wood-based-cellulosic-fiber.--It-may-be-made-from related-paper-or-paperboard-stock,-stock-that-does-not-contain contaminated-materials-and-extraneous-foreign-materials,-such-as metals-and-glass,-that-could-be-retained-in-the-finished product.--Suitable-chemicals-may-be-introduced-to-improve-flame resistance,-processing,-adhesive-and-cohesive-qualities,-and handling-characteristics.--The-added-chemicals-must-not-create-a health-hazard.~~

~~The-basic-material-must-be-processed-into-a-form-suitable for-installation-by-pneumatic-conveying-equipment-and simultaneous-mixing-with-water-or-adhesive-at-the-spray-nozzle.~~

~~(2)-All-testing-must-be-performed-on-spray applied-cellulose.~~

~~(3)-Determination-of-thermal-performance-must-be in-accordance-with-subpart-2,-item-C,-at-the-test-defined density-of-the-material.--R-value-testing-must-be-performed-at-a thickness-of-material-of-two-inches,-unless-the-material-is designed-for-use-at-a-lesser-maximum-thickness-and-the-material is-so-designated-on-the-label-or-label-notice-by-the manufacturer.--It-must-then-be-tested-at-the-maximum-thickness of-suggested-use.~~

~~(4)-Density-must-be-determined-in-accordance-with ASTM-E-605.--The-density-established-by-this-test-must-be-used in-the-preparation-of-manufacturer's-installation-guidelines-and in-the-determination-of-thermal-performance.~~

~~(5)-Critical-radiant-flux-and-smoldering combustion-must-be-in-accordance-with-ASTM-C-739,-or-the-CPSC Interim-Safety-Standard-for-Cellulose-Insulation,-Code-of Federal-Regulations,-title-16,-part-1209.~~

~~(6)-Moisture-absorption-must-be-determined-in accordance-with-section-14-of-ASTM-C-553.--Moisture-absorption must-not-exceed-15-percent-by-weight.~~

~~(7)-The-product-must-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.~~

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~~Exception:--Testing-and-compliance-with-bond-strength criteria-are-not-required-of-products-that-are-intended-only-for installation-in-enclosed-cavities,-and-the-product-is-identified as-intended-only-for-those-installations.~~

~~(8)-Corrosion-must-be-in-accordance-with-ASTM-C 739,-or-the-CPSC-Interim-Safety-Standard-for-Cellulose Insulation,-Code-of-Federal-Regulations,-title-16,-part-1209.~~ If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.8, for corrosion, then a test of the product in spray-applied form is unnecessary.

~~(9)-Odor-emission-must-be-in-accordance-with-ASTM C-739,-or-the-CPSC-Interim-Safety-Standard-for-Cellulose Insulation,-Code-of-Federal-Regulations,-title-16,-part-1209.~~ (2) If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.10, for odor emission, then a test of the product in spray-applied form is unnecessary.

~~(10)-Fungi-resistance-must-be-in-accordance-with ASTM-C-739,-or-the-CPSC-Interim-Safety-Standard-for-Cellulose Insulation,-Code-of-Federal-Regulations,-title-16,-part-1209.~~ (3) If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.7, for fungi resistance, then a test of the product in spray-applied form is unnecessary.

[For text of subps 4 to 7, see M.R.]

Subp. 8. **Other insulation.** Insulation other than insulation specified in subparts 1 to 7 must comply with the requirements in items A to F.

[For text of items A to D, see M.R.]

E. 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, or ASTM C 553, section 15.

[For text of item F, see M.R.]

7640.0160 APPLICATION AND INSTALLATION STANDARDS.

[For text of subpart 1, see M.R.]

Subp. 2. **Application and inspection.**

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[For text of items A to D, see M.R.]

E. Installation of radiant barrier systems must be in conformance with ASTM C 1158.

F. Installers of urea formaldehyde foam insulation shall conform with Minnesota Statutes, section 325F.18, and Minnesota Rules, parts 4620.1600 to 4620.2100.

~~F.~~ G. State and local agencies using appropriated federal funds and persons contracting with state or local agencies with respect to work performed under the contracts shall comply with Code of Federal Regulations, title 40, part 248, Guideline for Federal Procurement of Building Products Containing Recovered Materials.

[For text of subp 3, see M.R.]

7640.0180 INCORPORATIONS BY REFERENCE AND CITATIONS.

[For text of subpart 1, see M.R.]

Subp. 2. **ASTM.** The following ASTM standards are incorporated by reference:

A. ASTM C ~~168-88a~~ 168-90, ~~Standard Definitions of Terms~~ Terminology Relating to Thermal ~~Insulation~~ Insulating Materials.

[For text of item B, see M.R.]

C. ASTM C ~~236-87~~ 236-89, Standard Test Method for Steady State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box.

[For text of item D, see M.R.]

E. ASTM C 516-80 (reapproved ~~1985~~ 1990), Standard Specification for Vermiculite Loose-Fill Thermal Insulation.

F. ASTM C ~~518-85~~ 518-91, Standard Test Method for Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

G. ASTM C 549-81 (reapproved ~~86~~ 1986), Standard Specification for Perlite Loose Fill Insulation.

[For text of items H to K, see M.R.]

L. ASTM C ~~727-72 (reapproved 1978)~~ 727-90, Standard Recommended Practice for Use of Reflective Insulation in

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Building Constructions.

M. ASTM C ~~739-88~~ 739-91, Standard Specification for Cellulosic Fiber (wood-base) Loose-Fill Thermal Insulation.

N. ASTM C ~~764-88~~ 764-91, Standard Specification for Mineral Fiber Loose-Fill Thermal Insulation.

[For text of item O, see M.R.]

P. ASTM C ~~976-82~~ 976-90, Standard Test Method for Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box.

[For text of item Q, see M.R.]

R. ASTM C 1015-84 (reapproved 1990), Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation.

S. ASTM C ~~1029-85~~ 1029-90, Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation.

[For text of items T and U, see M.R.]

V. ASTM C 1149-90, Specification for Self-Supported Spray-Applied Cellulosic Thermal, or Acoustical Insulation, or Both.

W. ASTM C 1158-90, Practice for Use and Installation of Radiant Barrier Systems (RBS) in Building Constructions.

X. ASTM D 2842-69 (reapproved 1975), Standard Test Method for Water Absorption of Rigid Cellular Plastics.

~~W.~~ Y. ASTM E 84-84 Revision A, Surface Burning Characteristics of Building Materials.

~~X.~~ Z. ASTM E 408-71 (reapproved 1985), Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection Meter Techniques.

~~Y.--ASTM-E-605-77-(reapproved-1982),-Thickness-and Density-of-Sprayed-Fire-Resistive-Material-Applied-to-Structural Members.~~

~~Z.--ASTM-E-736-86,-Test-for-Cohesion/Adhesion-of Sprayed-Fire-Resistive-Materials-Applied-to-Structural-Members.~~

[For text of subp 2a, see M.R.]

Subp. 3. **Other incorporation and citations.** The following non ASTM standards are also incorporated by reference:

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[For text of items A to E, see M.R.]

F. Uniform Building Code (~~1985~~ 1988 Edition), by the International Conference of Building Officials.

[For text of items G to L, see M.R.]

Subp. 4. **Availability.** The standards incorporated by reference are available for public inspection as follows:

A. All documents incorporated by reference in this chapter are available at the ~~following locations:~~

~~(1)~~ Minnesota State Law Library~~;~~ ~~and~~

~~(2) James J. Hill Reference library~~.

[For text of item B, see M.R.]

REPEALER. Minnesota Rules, part 7640.0120, subpart 26, is repealed.

Approved
by Revisor _____

Office of the Revisor of Statutes

Administrative Rules

TITLE: Proposed Permanent Rules Relating to Thermal Insulation Standards

AGENCY: Department of Public Service

MINNESOTA RULES: Chapter 7640

INCORPORATIONS BY REFERENCE: 7640.0180: ASTM C 168-90, Terminology Relating to Thermal Insulating Materials. ASTM C 236-89, Standard Test Method for Steady State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box. ASTM C 516-80 (reapproved 1990), Standard Specification for Vermiculite Loose-Fill Thermal Insulation. ASTM C 518-91, Standard Test Method for Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus. ASTM C 549-81 (reapproved 1986), Standard Specification for Perlite Loose Fill Insulation. ASTM C 727-90, Standard Recommended Practice for Use of Reflective Insulation in Building Constructions. ASTM C 739-91, Standard Specification for Cellulosic Fiber (wood-base) Loose-Fill Thermal Insulation. ASTM C 764-91, Standard Specification for Mineral Fiber Loose-Fill Thermal Insulation. ASTM C 976-90, Standard Test Method for Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box. ASTM C 1015-84 (reapproved 1990), Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation. ASTM C 1029-90, Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation. ASTM C 1149-90, Specification for Self-Supported Spray-Applied Cellulosic Thermal, or Acoustical Insulation, or Both. ASTM C 1158-90, Practice for Use and Installation of Radiant Barrier Systems (RBS) in Building Constructions. Uniform Building Code (1988 Edition), by the International Conference of Building Officials. Available at Minnesota State Law Library.

The attached rules are approved for publication in the State Register

Craig E. Lindeke
Senior Assistant Revisor

Department of Public Service
Energy Division

Proposed Permanent Rules Relating to Thermal Insulation Standards

Notice of Intent to Amend Rules Without a Public Hearing

(1) **Notice is hereby given** that the Minnesota Department of Public Service intends to adopt amendments to *Minnesota Rules* Chapter 7640, without a public hearing. The Commissioner has determined that the proposed amendment of these rules will be noncontroversial in nature and has elected to follow the procedures set forth in the *Minnesota Statutes*, sections 14.22 to 14.28. Authority for the adoption of these rules is contained in *Minnesota Statutes*, sections 325F.20, subd. 1 and 325F.21, subd. 1 and 2.

Minnesota Rules Chapter 7640 apply to manufacturers, sellers and installers of residential thermal insulation products sold or installed in Minnesota.

(2) All persons have 30 days in which to submit comment in support of or in opposition to any part or subpart of the proposed amendments. Comment is encouraged. (3) Each comment should identify the proposed amendment addressed, the reason for the comment, and any change proposed.

All persons may make a written request for a public hearing on the proposed amendments within the 30-day comment period. (4) If 25 or more persons submit a written request for a public hearing within the 30-day comment period, a public hearing will be held unless a sufficient number withdraw their requests in writing. (6) Any person requesting a public hearing must state his or her name and address and is encouraged to identify the portion of the proposed amendment addressed, the reason for the request, and any change proposed. (7) If a public hearing is required, the agency will proceed pursuant to *Minnesota Statutes*, sections 14.131 to 14.20.

Comments or written requests for a public hearing must be submitted to:

(5)

Bruce Nelson, Senior Engineer
Department of Public Service, Energy Division
790 American Center Building
150 East Kellogg Boulevard
St. Paul, MN 55101
phone (612) 297-2313 fax (612) 297-1959.

Comments or requests for a public hearing must be received no later than 4:00 p.m., January 16, 1992.

(8) The proposed amendments may be modified if the modifications are supported by the data and views submitted to the Department and do not result in a substantial change in the proposed amendments as noticed.

(11) A Copy of the proposed rule amendment is attached to this notice.

(12) A Statement of Need and Reasonableness that describes the need for and reasonableness of each provision of the proposed amendments and identifies the data and information relied upon to support the proposed amendments has been prepared and is available by requesting a copy from Mr. Nelson at the address listed above.

(13) If no hearing is required, upon adoption of the rule, the rule and the required supporting documents will be submitted to the Attorney General for review as to legality and form to the extent that form relates to legality. Any person may request notification of the date of submission to the Attorney General. Persons who wish to be advised of the submission of this material to the Attorney General, or who wish to receive a copy of the adopted rules, must submit a written request for such to Mr. Nelson at the address listed above.

Krista L. Sanda

Krista L. Sanda, Commissioner
Department of Public Service

11/18/91

Dated

Department of Public Service

Proposed Permanent Rules Relating to Thermal Insulation Standards

Rules as Proposed

7640.0110 APPLICABILITY.

Subpart 1. **Types of residential insulation products covered.** This chapter applies to insulation products for use in residential buildings. These include insulation for walls, ceilings, floors, foundation walls, pipe insulation, duct insulation, and retrofit water heater blanket insulation.

Not included are insulation used in manufactured appliances, windows, and doors~~, and insulation used in new manufactured homes assembled outside Minnesota~~.

[For text of subps 2 to 4, see M.R.]

7640.0120 DEFINITIONS.

[For text of subps 1 and 2, see M.R.]

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 (NVLAP), Gaithersburg, Maryland; ~~or~~

B. American Association for Laboratory Accreditation, Gaithersburg, Maryland; or

C. Standards Council of Canada, Ottawa, Ontario, Canada.

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.

Approved by Revisor

[For text of subps 4 to 25, see M.R.]

Subp. 26. [See repealer.]

7640.0130 INSULATION MATERIALS STANDARDS.

[For text of subpart 1, see M.R.]

Subp. 2. **General testing requirements.** General testing requirements for regulated thermal insulation materials in this part are as follows:

[For text of item A, see M.R.]

B. All regulated thermal insulation materials must be tested for compliance with the standards ~~in this part as follows:~~ according to subitems (1) to (4).

~~(1) Until April 27, 1986, testing must be performed only at a testing laboratory possessing the appropriate equipment, facilities, and qualified personnel necessary to perform testing required by parts 7640.0130 to 7640.0160. Tests performed in the 1985 calendar year are acceptable.~~

~~(2)~~ ~~After April 27, 1986, all~~ Required testing must be performed by an approved laboratory within two years of the filing of the initial report required by part 7640.0150.

~~(3)~~ (2) The thermal insulation material chosen for testing must be representative of material produced by the manufacturer during normal production runs.

~~(4)~~ (3) Testing for each type of insulation must be performed in accordance with the methods specified in subparts 3 to 8.

~~(5)~~ (4) Insulation must have flammability characteristics in accordance with the ~~UBC~~ Uniform Building Code, sections 1712 and 1713, for its intended uses.

[For text of items C and D, see M.R.]

Subp. 3. **Cellulose insulation.**

[For text of item A, see M.R.]

B. Cellulose fiber spray-applied must ~~meet the following requirements:~~ comply with ASTM C 1149.

~~(1) The basic material must consist of virgin or~~

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recycled-wood-based-cellulosic-fiber.--It-may-be-made-from related-paper-or-paperboard-stock,-stock-that-does-not-contain contaminated-materials-and-extraneous-foreign-materials,-such-as metals-and-glass,-that-could-be-retained-in-the-finished product.--Suitable-chemicals-may-be-introduced-to-improve-flame resistance,-processing,-adhesive-and-cohesive-qualities,-and handling-characteristics.--The-added-chemicals-must-not-create-a health-hazard.

The-basic-material-must-be-processed-into-a-form-suitable for-installation-by-pneumatic-conveying-equipment-and simultaneous-mixing-with-water-or-adhesive-at-the-spray-nozzle.

(2)-All-testing-must-be-performed-on-spray applied-cellulose.

(3)-Determination-of-thermal-performance-must-be in-accordance-with-subpart-2,-item-C,-at-the-test-defined density-of-the-material.--R-value-testing-must-be-performed-at-a thickness-of-material-of-two-inches,-unless-the-material-is designed-for-use-at-a-lesser-maximum-thickness-and-the-material is-so-designated-on-the-label-or-label-notice-by-the manufacturer.--It-must-then-be-tested-at-the-maximum-thickness of-suggested-use.

(4)-Density-must-be-determined-in-accordance-with ASTM-E-605.--The-density-established-by-this-test-must-be-used in-the-preparation-of-manufacturer's-installation-guidelines-and in-the-determination-of-thermal-performance.

(5)-Critical-radiant-flux-and-smoldering combustion-must-be-in-accordance-with-ASTM-C-739,-or-the-CPSC Interim-Safety-Standard-for-Cellulose-Insulation,-Code-of Federal-Regulations,-title-16,-part-1209.

(6)-Moisture-absorption-must-be-determined-in accordance-with-section-14-of-ASTM-C-553.--Moisture-absorption must-not-exceed-15-percent-by-weight.

(7)-The-product-must-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.

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~~Exception:--Testing-and-compliance-with-bond-strength criteria-are-not-required-of-products-that-are-intended-only-for installation-in-enclosed-cavities,-and-the-product-is-identified as-intended-only-for-those-installations.~~

~~(8)-Corrosion-must-be-in-accordance-with-ASTM-C 739,-or-the-CPSC-Interim-Safety-Standard-for-Cellulose Insulation,-Code-of-Federal-Regulations,-title-16,-part-1209.~~ If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.8, for corrosion, then a test of the product in spray-applied form is unnecessary.

~~(9)-Odor-emission-must-be-in-accordance-with-ASTM C-739,-or-the-CPSC-Interim-Safety-Standard-for-Cellulose Insulation,-Code-of-Federal-Regulations,-title-16,-part-1209.~~ (2) If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.10, for odor emission, then a test of the product in spray-applied form is unnecessary.

~~(10)-Fungi-resistance-must-be-in-accordance-with ASTM-C-739,-or-the-CPSC-Interim-Safety-Standard-for-Cellulose Insulation,-Code-of-Federal-Regulations,-title-16,-part-1209.~~ (3) If the product in loose-fill form meets the criteria in ASTM C 1149, section 4.7, for fungi resistance, then a test of the product in spray-applied form is unnecessary.

[For text of subps 4 to 7, see M.R.]

Subp. 8. **Other insulation.** Insulation other than insulation specified in subparts 1 to 7 must comply with the requirements in items A to F.

[For text of items A to D, see M.R.]

E. 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, or ASTM C 553, section 15.

[For text of item F, see M.R.]

7640.0160 APPLICATION AND INSTALLATION STANDARDS.

[For text of subpart 1, see M.R.]

Subp. 2. **Application and inspection.**

Approved by Revisor _____

[For text of items A to D, see M.R.]

E. Installation of radiant barrier systems must be in conformance with ASTM C 1158.

F. Installers of urea formaldehyde foam insulation shall conform with Minnesota Statutes, section 325F.18, and Minnesota Rules, parts 4620.1600 to 4620.2100.

~~F.~~ G. State and local agencies using appropriated federal funds and persons contracting with state or local agencies with respect to work performed under the contracts shall comply with Code of Federal Regulations, title 40, part 248, Guideline for Federal Procurement of Building Products Containing Recovered Materials.

[For text of subp 3, see M.R.]

7640.0180 INCORPORATIONS BY REFERENCE AND CITATIONS.

[For text of subpart 1, see M.R.]

Subp. 2. **ASTM.** The following ASTM standards are incorporated by reference:

A. ASTM C ~~168-88a~~ 168-90, ~~Standard Definitions of Terms~~ Terminology Relating to Thermal ~~Insulation~~ Insulating Materials.

[For text of item B, see M.R.]

C. ASTM C ~~236-87~~ 236-89, Standard Test Method for Steady State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box.

[For text of item D, see M.R.]

E. ASTM C 516-80 (reapproved ~~1985~~ 1990), Standard Specification for Vermiculite Loose-Fill Thermal Insulation.

F. ASTM C ~~518-85~~ 518-91, Standard Test Method for Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

G. ASTM C 549-81 (reapproved ~~86~~ 1986), Standard Specification for Perlite Loose Fill Insulation.

[For text of items H to K, see M.R.]

L. ASTM C ~~727-72 (reapproved 1978)~~ 727-90, Standard Recommended Practice for Use of Reflective Insulation in

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Building Constructions.

M. ASTM C ~~739-88~~ 739-91, Standard Specification for Cellulosic Fiber (wood-base) Loose-Fill Thermal Insulation.

N. ASTM C ~~764-88~~ 764-91, Standard Specification for Mineral Fiber Loose-Fill Thermal Insulation.

[For text of item O, see M.R.]

P. ASTM C ~~976-82~~ 976-90, Standard Test Method for Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box.

[For text of item Q, see M.R.]

R. ASTM C 1015-84 (reapproved 1990), Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation.

S. ASTM C ~~1029-85~~ 1029-90, Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation.

[For text of items T and U, see M.R.]

V. ASTM C 1149-90, Specification for Self-Supported Spray-Applied Cellulosic Thermal, or Acoustical Insulation, or Both.

W. ASTM C 1158-90, Practice for Use and Installation of Radiant Barrier Systems (RBS) in Building Constructions.

X. ASTM D 2842-69 (reapproved 1975), Standard Test Method for Water Absorption of Rigid Cellular Plastics.

~~W.~~ Y. ASTM E 84-84 Revision A, Surface Burning Characteristics of Building Materials.

~~X.~~ Z. ASTM E 408-71 (reapproved 1985), Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection Meter Techniques.

~~Y.--ASTM-E-605-77-(reapproved-1982),-Thickness-and Density-of-Sprayed-Fire-Resistive-Material-Applied-to-Structural Members.~~

~~Z.--ASTM-E-736-86,-Test-for-Cohesion/Adhesion-of Sprayed-Fire-Resistive-Materials-Applied-to-Structural-Members.~~

[For text of subp 2a, see M.R.]

Subp. 3. **Other incorporation and citations.** The following non ASTM standards are also incorporated by reference:

Approved by Revisor _____

[For text of items A to E, see M.R.]

F. Uniform Building Code (~~1985~~ 1988 Edition), by the International Conference of Building Officials.

[For text of items G to L, see M.R.]

Subp. 4. **Availability.** The standards incorporated by reference are available for public inspection as follows:

A. All documents incorporated by reference in this chapter are available at the ~~following locations:~~

~~(1)~~ Minnesota State Law Library~~;~~ ~~and~~

~~(2) James J. Hill Reference Library~~.

[For text of item B, see M.R.]

REPEALER. Minnesota Rules, part 7640.0120, subpart 26, is repealed.

Approved by Revisor _____

Office of the Revisor of Statutes

Administrative Rules

TITLE: Proposed Permanent Rules Relating to Thermal Insulation Standards

AGENCY: Department of Public Service

MINNESOTA RULES: Chapter 7640

INCORPORATIONS BY REFERENCE: 7640.0180: ASTM C 168-90, Terminology Relating to Thermal Insulating Materials. ASTM C 236-89, Standard Test Method for Steady State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box. ASTM C 516-80 (reapproved 1990), Standard Specification for Vermiculite Loose-Fill Thermal Insulation. ASTM C 518-91, Standard Test Method for Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus. ASTM C 549-81 (reapproved 1986), Standard Specification for Perlite Loose Fill Insulation. ASTM C 727-90, Standard Recommended Practice for Use of Reflective Insulation in Building Constructions. ASTM C 739-91, Standard Specification for Cellulosic Fiber (wood-base) Loose-Fill Thermal Insulation. ASTM C 764-91, Standard Specification for Mineral Fiber Loose-Fill Thermal Insulation. ASTM C 976-90, Standard Test Method for Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box. ASTM C 1015-84 (reapproved 1990), Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation. ASTM C 1029-90, Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation. ASTM C 1149-90, Specification for Self-Supported Spray-Applied Cellulosic Thermal, or Acoustical Insulation, or Both. ASTM C 1158-90, Practice for Use and Installation of Radiant Barrier Systems (RBS) in Building Constructions. Uniform Building Code (1988 Edition), by the International Conference of Building Officials. Available at Minnesota State Law Library.

The attached rules are approved for publication in the State Register

Craig E. Lindeke
Senior Assistant Revisor