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MINNESOTA DEPARTMENT OF
LABOR & INDUSTRY

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December 8, 2014

Legislative Reference Library
645 State Office Building
100 Constitution Avenue
St. Paul, Minnesota 55155

Re: In The Matter of the Proposed Rules of the Department of Labor and Industry Rules Governing the Minnesota Residential Energy Code, Duct Insulation R-Values, Minnesota Rules, part 1322.0304, Revisor's ID Number R-04294

Dear Librarian:

The Minnesota Department of Labor and Industry intends to adopt rules governing the Minnesota Residential Energy Code, Duct Insulation R-Values, Minnesota Rules, part 1322.0304. We published a Dual Notice: Notice of Intent to Adopt Rules Without a Public Hearing Unless 25 or More Persons Request a Hearing, and Notice of Hearing if 25 or More Requests for Hearing Are Received in the December 8, 2014 State Register.

The Department has prepared a Statement of Need and Reasonableness. As required by Minnesota Statutes, sections 14.131 and 14.23, the Department is sending the Library an electronic copy of the Statement of Need and Reasonableness at the same time we are mailing our Notice of Intent to Adopt Rules.

If you have questions, please contact me at 651-284-5867.

Yours very truly,

Colleen Clayton
Rules Specialist

Enclosure: Statement of Need and Reasonableness

Minnesota Department of Labor and Industry

STATEMENT OF NEED AND REASONABLENESS

Proposed Amendment to Rules Governing the Minnesota Residential Energy Code, Duct Insulation R-Values, Minnesota Rules, part 1322.0403; Revisor's ID Number R-04294

INTRODUCTION

The proposed rule amendment includes a reduction in the minimum R-value for insulation of "Outdoor air intakes within conditioned spaces," "Exhaust ducts within conditioned spaces," and ducts "Within cement slab or within ground" in Table R403.2.1 – "Minimum Required Duct and Plenum Insulation For Dwelling Units," and clarifies what must be insulated per Minnesota Rules, part 1322.0403.

This rule part, including Table R403.2.1, was recently added to Minnesota Rules, Chapter 1322, when it was adopted on August 18, 2014.[1] The table is taken from Minnesota Rules, Chapter 1346, the Minnesota Mechanical Code, part 1346.0604. The table in part 1346.0604 is deleted.[2]

Minnesota Rules, Chapter 1323, the Commercial Energy Code, is currently undergoing active rulemaking and adds the same table from part 1346.0604 as what was added to chapter 1322 as Table R403.2.1. While preparing the proposed chapter 1323 amendments, the Department determined minimum R-values for three items in the table differently than how they were determined for the recent chapter 1322 rule adoption. Because these two tables are intended to be consistent with each other, the Department is proposing to amend the table in 1322 to align with the proposed table in chapter 1323. The table is the result of synthesizing the table from Minnesota Rules, Chapter 1346, the Minnesota Mechanical Code ("MMC"), and the IECC-Residential Provisions.

The Department consulted with the Construction Codes Advisory Council on October 19, 2012, regarding Chapter 1322 proposed amendments.[3]

ALTERNATIVE FORMAT

Upon request, this information can be made available in an alternative format, such as large print, braille, or audio. To make a request, contact Colleen Clayton at the Department of Labor and Industry, 443 Lafayette Road North, St. Paul, Minnesota 55155, phone 651-284-5867, and fax 651-284-5749.

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[1] See August 18, 2014, State Register at 39 SR 232. The adopted rule will be effective February 14, 2015.
[2] Chapter 1346 was recently amended in a rulemaking. The Notice of Intent was published on May 27, 2014. See 38 SR 1559. The Notice of Adoption was to be published on DATE, 2014. Therefore, the deletion of the table in part 1346.0604 will be effective on January 24, 2015. The recent amendment to 1322 becomes effective February 14, 2015, so there will not be any overlap in time in which the table is effective in both rules.
[3] Meeting minutes are available at: www.dli.mn.gov/PDF/ccac/1012minutes.pdf

STATUTORY AUTHORITY

Minnesota Statutes, section 326B.02, subdivision 5, authorizes the commissioner of the Department to "adopt, amend, suspend, and repeal rules relating to the commissioner's responsibilities under this chapter, except for rules for which the rulemaking authority is expressly transferred to the Plumbing Board, the Board of Electricity, or the Board of High Pressure Piping Systems." This rulemaking has not been transferred to the Plumbing Board, the Board of Electricity, or the Board of High Pressure Piping Systems.

Minnesota Statutes, section 326B.101, requires the commissioner of the Department to "administer and amend a state code of building construction which will provide basic and uniform performance standards, establish reasonable safeguards for health, safety, welfare, comfort, and security of the residents of this state and provide for the use of modern methods, devices, materials, and techniques which will in part tend to lower construction costs. The construction of buildings should be permitted at the least possible cost consistent with recognized standards of health and safety." This rulemaking is part of the state building code.

Minnesota Statutes, section 326B.106, subdivision 1, "the commissioner shall by rule and in consultation with the Construction Codes Advisory Council establish a code of standards for the construction, reconstruction, alteration, and repair of buildings, governing matters of structural materials, design and construction, fire protection, health, sanitation, and safety, including design and construction standards regarding heat loss control, illumination, and climate control. The code must also include duties and responsibilities for code administration, including procedures for administrative action, penalties, and suspension and revocation of certification." This rulemaking sets standards regarding heat loss control.

Minnesota Statutes, section 326B.118 specifically provides that the commissioner, "in consultation with the Construction Codes Advisory Council, shall explore and review the availability and appropriateness of any model energy codes related to the construction of single one- and two-family residential buildings. In consultation with the council, the commissioner shall take steps to adopt the chosen code with all necessary and appropriate amendments." This rulemaking amends the rules that adopt the chosen code.

Under these statutes, the Department has the necessary statutory authority to adopt the proposed rules.

REGULATORY ANALYSIS

Minnesota Statutes, section 14.131, sets out eight factors for a regulatory analysis that must be included in the SONAR. Paragraphs (1) through (8) below quote these factors and then give the agency's response.

(1) a description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule

The classes of affected persons who will likely be affected by the proposed rule include insulation manufacturers, mechanical contractors, residential builders, building officials, building inspectors, building contractors, architects, engineers, installers, and homeowners.

The classes of persons who will likely bear the cost of the proposed rule include homeowners, who will ultimately bear the cost of the proposed rule. However, the proposed amendments will lower insulation costs for homeowners.

The classes of persons who will likely benefit from the proposed rule include all of the affected persons listed in the first paragraph of this section. The proposed amendments will be consistent with similar requirements in chapter 1323 of the Minnesota State Building Code.

(2) the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues

There will be no new cost to the agency or any other agency for the implementation and enforcement of the proposed rule amendment because this rule is currently in the Minnesota State Building Code.

There is no anticipated effect on state revenues.

(3) a determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule

There are no less costly or intrusive methods to achieve the purpose of the proposed rule. The requirement in the proposed rule is revised within the Minnesota State Building Code to make it consistent with the companion energy code chapter. This rulemaking is the only method to amend the requirement.

(4) a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule

No other alternative methods were considered to achieve the purpose of the proposed rule because the proposed rule revises an existing requirement. The amendment reverts three minimum R-values in TableR403.2.1 to be the same value as what they were in part 1346.0604.

(5) the probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals

There is no cost to comply with the proposed rule because the requirement currently exists, is not required unless an applicable project is undertaken and will cost less than the current requirement because it lowers the required insulation minimum.

(6) the probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals

The probable costs or consequences of not adopting the proposed rule would result in inconsistent corresponding provisions in this chapter and chapter 1323 concerning the required minimum R-values of three specific ducts.

The costs associated with not adopting the proposed rule are costs of homeowners on the installation of excessive insulation. The consequences of not adopting the proposed rule could result in confusion in the industry because of residential insulation requirements that are inconsistent with past requirements and the corresponding commercial requirements.

(7) an assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference

Although there are no federal regulations per se, Minnesota agreed to comply with ARRA broad requirements.[4] The proposed rule amends TableR403.2.1 in a way that is consistent with ARRA requirements. That is, the ARRA requires Minnesota to adopt the latest IECC, which Minnesota has. The IECC is unclear as to the three specific minimum R-values proposed for amendment in this rulemaking. The proposed amendment continues to require existing R-value minimum requirements.

(8) an assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule. . . . '[C]umulative effect' means the impact that results from incremental impact of the proposed rule in addition to other rules, regardless of what state or federal agency has adopted the other rules. Cumulative effects can result from individually minor but collectively significant rules adopted over a period of time.

There is no cumulative effect with this proposed rule because it clarifies and coordinates the IECC general statement with the specific duct listings in the table.

PERFORMANCE-BASED RULES

Minnesota Statutes, section 326B.106, subdivision 1, authorizes the Department to establish, by rule, a code of standards for construction. This statute requires the code to "conform insofar as practicable to model building codes generally accepted and in use throughout the United States." At the same time, this statute mandates that, "to the extent possible, the code must be adopted in terms of desired results instead of the means of achieving those results, avoiding wherever possible the incorporation of specifications of particular methods or materials."

The Residential Energy Code in Minnesota Rules, chapter 1322, establishes minimum requirements for building systems using both prescriptive and performance-based provisions and is founded on broad-based principles that make the use of new methods, materials, and construction practices possible. This rule chapter is intended to incorporate the philosophy required by Minnesota Statutes, section 326B.106.

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[4] In March 2009, Governor Pawlenty signed a "Governor's Assurance Certification" in which, in relevant part, the State of Minnesota committed to adopt a "residential building energy code (or codes) that meets or exceeds the most recent International Energy Conservation Code, or achieves equivalent or greater energy savings."

ADDITIONAL NOTICE

This Additional Notice Plan was reviewed by the Office of Administrative Hearings and approved in an order dated November 26, 2014, by Administrative Law Judge James LaFave.

Our Notice Plan also includes giving notice required by statute. We will mail or email the proposed rule and the Dual Notice to everyone who has registered to be on the Department's rulemaking mailing lists under Minnesota Statutes, section 14.14, subdivision 1a. We will also give notice to the Legislature per Minnesota Statutes, section 14.116.

We will mail or email the proposed rule and Dual Notice to the following interested parties:

1. The Chapter Presidents for all six of the Minnesota Chapters of the Association of Minnesota Building Officials to disseminate to their memberships;
2. Builders Association of Minnesota;
3. Builders Association of the Twin Cities;
4. American Institute of Architects – Minnesota;
5. Minnesota Society of Professional Engineers;
6. League of Minnesota Cities;
7. Association of Minnesota Counties;
8. Minnesota Mechanical Contractors' Association; and
9. Associated General Contractors of Minnesota.

Our Notice Plan does not include notifying the Commissioner of Agriculture because the rules do not affect farming operations per Minnesota Statutes, section 14.111.

Our Notice Plan does not include notifying the Council on Affairs of Chicano/Latino People according to Minnesota Statutes, section 3.9223 because the rules will not have a primary effect on Chicano/Latino people.

CONSULTATION WITH MMB ON LOCAL GOVERNMENT IMPACT

As required by Minnesota Statutes, section 14.131, the Department consulted with Minnesota Management and Budget (MMB). We did this by sending MMB copies of the documents that we sent to the Governor's Office for review and approval on the same day we sent them to the Governor's office. The documents included: the Governor's Office Proposed Rule and SONAR Form; the proposed rules; and the SONAR. The Department did this before publishing the Notice of Intent to Adopt. In a memorandum dated November 13, 2014, the Department received a response from MMB that stated, in part, the following:

"Based upon the information provided to me by the Department of Labor and Industry, there does not appear to be a significant cost to local units of government that are not recoverable through local fees as a result of this proposed rule."

The Department will submit a copy of the cover correspondence and any response received from Minnesota Management and Budget to OAH at the hearing or with the documents it submits for ALJ review.

DETERMINATION ABOUT RULES REQUIRING LOCAL IMPLEMENTATION

As required by Minnesota Statutes, section 14.128, subdivision 1, the agency has considered whether these proposed rules will require a local government to adopt or amend any ordinance or other regulation in order to comply with these rules. The agency has determined that a local government will not be required to adopt or amend an ordinance or other regulation to comply with the proposed rules. The State Building Code is the standard that applies statewide. Minnesota Statutes, section 326B.121, subdivision 1, mandates compliance with the State Building Code whether or not a local government adopts or amends an ordinance. As a result, an ordinance or other regulation is not required for compliance. If a city wants its ordinances to accurately reflect legal requirements or situations where the State Building Code has superseded the ordinances, then the city may want to amend or update its ordinances.

COST OF COMPLYING FOR SMALL BUSINESS OR CITY

Agency Determination of Cost

As required by Minnesota Statutes, section 14.127, the Department has considered whether the cost of complying with the proposed rules in the first year after the rules take effect will exceed $25,000 for any small business or small city.[5] The Department has determined that the cost of complying with the proposed rules in the first year after the rules take effect will not exceed $25,000 for any small business or small city because the proposed rule does not require any construction to occur, much less within the first year after the rules take effect. Any small business or city contemplating new construction or remodeling will decide whether or not to undertake the construction or remodeling project and when that construction or remodeling will occur.

Any small business in the construction industry will not bear any additional costs as a result of the proposed rule. The proposed rule amends an existing requirement and reduces the minimum R-Value for insulation of "Outdoor air intakes within conditioned spaces," "Exhaust ducts within conditioned spaces," and "Within cement slab or within ground" in Table R403.2.1 – Minimum Required Duct and Plenum Insulation For Dwelling Units."

There will be no additional costs associated with this proposed rule.

LIST OF WITNESSES

If these rules go to a public hearing, the Department anticipates having the following witnesses testify in support of the need for and reasonableness of the rules:

1. Staff of the Construction Codes and Licensing Division, if necessary

[5] A small business is "any one business that has less than 50 full-time employees." Minnesota Statute, section 14.127. A small city is "any one statutory or home rule charter city that has less than ten full-time employees." Id.

RULE-BY-RULE ANALYSIS

1322.0403, SECTION R403, SYSTEMS.

The changes to minimum R-values in Table R403.2.1 "Minimum Required Duct and Plenum Insulation for Dwelling Units" are needed to correct the R-values synthesized from the MMC, part 1346.0604, and the IECC section R403.2.1 into the table.

When the MMC Table was transferred to chapter 1322, some of the R-values in the Table had to be synthesized with the requirements in IECC section R403.2.1. IECC section R403.2.1 contains requirements for "Supply ducts in attics" and "all other ducts." "All other ducts" are required to have a minimum R-value of R-6. When the table was first added to chapter 1322 in the recently adopted rulemaking, "all other ducts" in the table were set to have a minimum R-value of R-6. However, the table in the MMC had a more detailed delineation of duct types.

There are three duct locations specified in the MMC Table that are not individually listed in the IECC. They are "Outdoor air intakes within conditioned spaces," "Exhaust ducts within conditioned spaces" and ducts "Within cement slab or within ground." The proposed amendment changes the last duct to read, "Within concrete slab or within ground."

The IECC is clear on supply ducts but is not clear what "all other ducts" means. In the IECC, the section following R403.2.1, section R403.2.2, "Sealing," states that, "*Ducts*, air handlers, and filter boxes shall be sealed." Emphasis added. Common industry practices and enforcement apply the sealing requirement to forced air furnaces and the supply and return air ducts connected to the furnace but not the three ducts that are the subject of this rulemaking. That is, the general term "ducts" does not apply to the three ducts that are the subject of this rulemaking. The use of "all other ducts" in R403.2.1 and the duct reference in R403.2.2 are both overly broad.

Table R403.2.1 is more detailed and specific than the text in IECC subsection R403.2.1. The minimum R-values for the three specific duct types listed in the table are amended for the following reasons.

Ducts "Within concrete slab or within ground." Ducts in concrete slabs or ground are not individually described in the IECC. The 2012 IECC requires more insulation on slab-on grade construction exterior walls than the 2009 IECC, which reduces the need for more insulation on ducts in a concrete slab than required in the MMC before the transfer. The increased exterior wall insulation will make the cement slab warmer than under the previous code so the R-values from the MCC table are sufficient and reasonable.

"Outdoor air intakes within conditioned spaces" and "Exhaust ducts within conditioned spaces." "Outdoor air intakes within conditioned spaces" are ducts that bring in outside air for combustion appliances or ventilation air. "Exhaust ducts within conditioned spaces" are ducts for exhausting a bathroom fan, for example. Instead of grouping these duct types in the "all other ducts" category and applying the general minimum, it is reasonable to follow a table that specifically lists them and individually assigns a minimum R-value.

It is reasonable to reinstate the previous requirements of the MMC Table for "Outdoor air intakes within conditioned spaces, "Exhaust ducts within conditioned spaces," and ducts "Within

concrete slab or within ground" because it complies with the ARRA, the higher insulation rating in these three locations will not contribute significantly to energy savings in buildings and it is the most clear and accurate requirement for these specific duct types.

It should also be noted that these changes closely mirror the requirements for duct insulation in the American Society of Heating, Refrigerating and Air-Conditioning Engineers, "ASHRAE," Standard 90.1-2010, Table 6.8.2B which can be used as an energy compliance path authorized by IECC section C401.2. See Exhibit A. The ASHRAE is widely accepted as a national authority on building energy conservation.

CONCLUSION

Based on the foregoing, the proposed rules are both needed and reasonable.

11-26-14
Date

Ken B. Peterson, Commissioner
Department of Labor and Industry

This Statement of Need and Reasonableness was made available for public review on 11-26, 2014.

EXHIBIT A

6.8.2 Duct Insulation Tables

TABLE 6.8.2A Minimum Duct Insulation R-Value,[a] Cooling and Heating Only Supply Ducts and Return Ducts

Climate Zone	Duct Location						
	Exterior	Ventilated Attic	Unvented Attic Above Insulated Ceiling	Unvented Attic with Roof Insulation[a]	Unconditioned Space[b]	Indirectly Conditioned Space[c]	Buried
				Heating-Only Ducts			
1, 2	none	none	none	none	none	none	none
3	R-3.5	none	none	none	none	none	none
4	R-3.5	none	none	none	none	none	none
5	R-6	R-3.5	none	none	none	none	R-3.5
6	R-6	R-6	R-3.5	none	none	none	R-3.5
7	R-8	R-6	R-6	none	R-3.5	none	R-3.5
8	R-8	R-8	R-6	none	R-6	none	R-6
				Cooling-Only Ducts			
1	R-6	R-6	R-8	R-3.5	R-3.5	none	R-3.5
2	R-6	R-6	R-6	R-3.5	R-3.5	none	R-3.5
3	R-6	R-6	R-6	R-3.5	R-1.9	none	none
4	R-3.5	R-3.5	R-6	R-1.9	R-1.9	none	none
5, 6	R-3.5	R-1.9	R-3.5	R-1.9	R-1.9	none	none
7, 8	R-1.9	R-1.9	R-1.9	R-1.9	R-1.9	none	none
				Return Ducts			
1 to 8	R-3.5	R-3.5	R-3.5	none	none	none	none

[a] Insulation R-values, measured in (h·ft²·°F)/Btu, are for the insulation as installed and do not include film resistance. The required minimum thicknesses do not consider water vapor transmission and possible surface condensation. Where exterior *walls* are used as *plenum walls*, *wall* insulation shall be as required by the most restrictive condition of Section 6.4.4.2 or Section 5. Insulation resistance measured on a horizontal plane in accordance with ASTM C518 at a *mean temperature* of 75°F at the installed thickness.
[b] Includes crawlspaces, both ventilated and nonventilated.
[c] Includes return air *plenums* with or without exposed *roofs* above.

TABLE 6.8.2B Minimum Duct Insulation R-Value,[a] Combined Heating and Cooling Supply Ducts and Return Ducts

Climate Zone	Duct Location						
	Exterior	Ventilated Attic	Unvented Attic Above Insulated Ceiling	Unvented Attic with Roof Insulation[a]	Unconditioned Space[b]	Indirectly Conditioned Space[c]	Buried
				Supply Ducts			
1	R-6	R-6	R-8	R-3.5	R-3.5	none	R-3.5
2	R-6	R-6	R-6	R-3.5	R-3.5	none	R-3.5
3	R-6	R-6	R-6	R-3.5	R-3.5	none	R-3.5
4	R-6	R-6	R-6	R-3.5	R-3.5	none	R-3.5
5	R-6	R-6	R-6	R-1.9	R-3.5	none	R-3.5
6	R-8	R-6	R-6	R-1.9	R-3.5	none	R-3.5
7	R-8	R-6	R-6	R-1.9	R-3.5	none	R-3.5
8	R-8	R-8	R-8	R-1.9	R-6	none	R-6
				Return Ducts			
1 to 8	R-3.5	R-3.5	R-3.5	none	none	none	none

[a] Insulation R-values, measured in (h·ft²·°F)/Btu, are for the insulation as installed and do not include film resistance. The required minimum thicknesses do not consider water vapor transmission and possible surface condensation. Where exterior *walls* are used as *plenum walls*, *wall* insulation shall be as required by the most restrictive condition of Section 6.4.4.2 or Section 5. Insulation resistance measured on a horizontal plane in accordance with ASTM C518 at a *mean temperature* of 75°F at the installed thickness.
[b] Includes crawlspaces, both ventilated and nonventilated.
[c] Includes return air *plenums* with or without exposed *roofs* above.