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December 6, 2006

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

Re: In the Matter of the Proposed Rules Governing the Adoption of the 2006 International Residential Code, Minnesota Rules, Chapter 1309 and repeal of parts 1309.0312, 1309.0315, 1309.0316, 1309.0322, 1309.0506, and 1309.0703, subparts 1, 2, 4, 5, 6, 7 and 8; OAH Docket Number 7-1900-17665-1; and Governor's Tracking No. AR 148

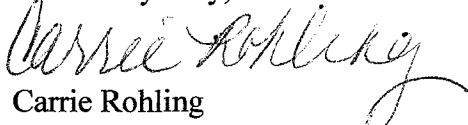
Dear Librarian:

The Minnesota Department of Labor and Industry intends to adopt rule amendments that will update Minnesota's residential code by adopting the 2006 edition of the International Residential Code by reference and with amendments and repealing parts 1309.0312, 1309.0315, 1309.0316, 1309.0322, 1309.0506, and 1309.0703, subparts 1, 2, 4, 5, 6, 7 and 8. We plan to publish a Dual Notice of Intent to Adopt Rules in the December 11, 2006 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 a copy of the Statement of Need and Reasonableness at the time we are mailing our Notice of Intent to Adopt Rules.

If you have any questions, please contact me at (651) 284-5217.

Yours very truly,


Carrie Rohling
Paralegal

Enclosure: Statement of Need and Reasonableness

Minnesota Department of Labor and Industry

STATEMENT OF NEED AND REASONABLENESS

Proposed Amendment to Rules Governing the Adoption of the 2006 International Residential Code, Minnesota Rules, Chapter 1309, and repeal of rule parts 1309.0312, 1309.0315, 1309.0316, 1309.0322, 1309.0506, and 1309.0703, subparts 1, 2, 4, 5, 6, 7, and 8.

INTRODUCTION

The Commissioner of the Minnesota Department of Labor and Industry proposes to adopt amendments to the Minnesota State Building Code, Minnesota Rules, chapter 1309. The proposed rules will adopt by reference the 2006 edition of the International Residential Code (IRC), with amendments.¹

The International Code Council (ICC) promulgates the IRC. The ICC routinely reviews, modifies, and updates the IRC to provide the most current and complete criteria relating to the design and installation of residential building systems. Because the 2006 IRC offers the most current set of criteria, the Minnesota Department of Labor and Industry proposes to amend Chapter 1309, in order to incorporate the 2006 IRC, with amendments where necessary.

ALTERNATIVE FORMAT

Upon request, this Statement of Need and Reasonableness can be made available in an alternative format, such as large print, Braille, or cassette tape. To make a request, contact Carrie Rohling, Department of Labor and Industry, 443 Lafayette Road North, St. Paul, Minnesota 55155-4341; phone (651) 284-5217; FAX: (651) 284-5725. TTY users may call the Department of Labor and Industry at (651) 297-4198.

STATUTORY AUTHORITY

The Department's statutory authority to adopt the rules is set forth in Minnesota Statutes sections 16B.59, 16B.61, and 16B.64.²

Minnesota Statutes, section 16B.59 states in pertinent part,

[T]he State Building Code governs the construction, reconstruction, alteration, and repair of buildings and other structures to which the code is applicable. The commissioner shall administer and amend a state code of building construction which

¹ The 2006 IRC is available for review at the Minnesota Department of Labor and Industry by contacting Rich Lockrem, Construction Codes and Licensing Division, 443 Lafayette Road N., St. Paul, MN 55155-4341; phone: (651) 284-5868; fax: (651) 284-5749. TTY users may call the Department at (651) 297-4198.

² All sources of statutory authority were adopted and effective prior to January 1, 1996, and so Minnesota Statutes, section 14.125, does not apply. See Minnesota Laws 1995, chapter 233, article 2, section 58.

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.

Minnesota Statutes, section 16B.61, subdivision 1, states in part,

[T]he commissioner shall by rule 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. The code must conform insofar as practicable to model building codes generally accepted and in use throughout the United States, including a code for building conservation. In the preparation of the code, consideration must be given to the existing statewide specialty codes presently in use in the state. Model codes with necessary modifications and statewide specialty codes may be adopted by reference. The code must be based on the application of scientific principles, approved tests, and professional judgment. 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. To that end the code must encourage the use of new methods and new materials...

Minnesota Statutes, section 16B.64, subdivision 6, states, "The commissioner shall approve any proposed amendments deemed by the commissioner to be reasonable in conformity with the policy and purpose of the code and justified under the particular circumstances involved..."

Pursuant to the *Department of Administration Reorganization Order No. 193*, dated April 4, 2005, the responsibilities of the Department of Administration in relation to State Building Codes and Standards as set forth in Minnesota Statutes, sections 16B.59 through 16B.76 (2004) were transferred to the Department of Labor and Industry.³

Pursuant to these statutes and the reorganization order, the Department of Labor and Industry has the authority to adopt these proposed rules.

REGULATORY ANALYSIS

³ Reorganization Order No. 193 was effective upon filing with the Secretary of State on May 16, 2005, and shall remain in effect until amended, repealed, or superseded. For a copy of the reorganization order, please contact Carrie Rohling by e-mail at dli.rules@state.mn.us, or phone to (651) 284-5217.

Minnesota Statutes, section 14.131, sets out seven factors for a regulatory analysis that must be included in the SONAR. Paragraphs (1) through (7) 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 persons who probably will be affected by the proposed rule include: residential contractors and builders, designers, certified building officials, materials manufacturers of building components, and homeowners.

The persons who probably will bear the costs of the proposed rule include: residential contractors and builders and the consumers to whom they are likely to pass the costs.

The persons who will benefit from the proposed rule include all of the above.

(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 are no costs to the agency or any other agency with respect to the implementation and enforcement of the proposed rule nor any 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 for achieving the purpose of this rule. The adoption of this code will provide uniform application of construction standards that parallel very closely those found in the IRC. The uniform application of these standards will result in predictable code application, which will tend to lower costs.

(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:

The agency's statutory authority requires the code to "conform insofar as practicable to model codes generally accepted and in use throughout the United States." The best way to achieve this result is to incorporate by reference those recognized national model codes into rule. In 2003, Minnesota adopted the 2000 edition of the IRC, with amendments, as the Minnesota Residential Code. The 2006 edition of the IRC updates the 2000 IRC. Because the IRC serves as the base document for the residential code and it is the model building code that is generally in use and accepted throughout the United States, alternative model codes were not considered.

(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:

The proposed rule does not require any changes to existing buildings. Rather, the proposed rule affects only new construction or remodeling. As a result, it is difficult to quantify actual cost for compliance in connection with the construction or remodeling of a building since these costs are dependent upon the building's design, use, age, condition, and intended future use.

Although it is difficult to quantify actual costs, the Department anticipates that the global costs associated with this rule will be indistinguishable from the rule it is replacing. While some specific requirements of this rule may be considered more restrictive than current rule, others are clearly less restrictive. In any particular case, the cost savings associated with the less restrictive provisions could outweigh any increased cost based on a more restrictive requirement; however, the actual costs for compliance on any one particular residential structure could vary. Having said that, there are three areas that could result in additional costs that are likely to be passed onto the homeowner.

First, proposed rule 1309.0301, addresses a requirement for sprinklers in two-family dwellings and townhomes with more than 9,250 square feet of aggregate area. The Department's Construction Codes and Licensing Division consulted with a Minnesota builders association and fire service personnel in an effort to determine a minimum threshold that is beneficial and acceptable for the basic fire protection of residential dwelling structures that is not cost prohibitive. As a result of this consultation, these stakeholders and the Department agreed that 9,250 square feet of aggregate area was a reasonable threshold to provide the minimum level of protection. Having said that, there may be costs associated with the requirement. However, any additional costs may also be minimized through the design process. It is likely that any costs associated with this requirement will ultimately be borne by the homeowner.

Secondly, proposed rule 1309.0310 repeals an amendment to the 2000 IRC, which could result in an increased cost to homeowners in that the installation of an additional egress window may be required in certain circumstances, which has the potential to result in additional costs related to the cost of materials and the installation.

Finally, proposed rule 1309.0311, which in part addresses stairways, could result in an increase in cost to the homeowner.⁴ As the Department indicated when the current rule was adopted, this proposed rule will use the 2006 IRC requirements rather than the amendments that were made to the 2000 IRC, which has the potential to result in additional design and construction costs to residential builders and designers, who are likely to pass any costs on to the homeowner. These costs specifically relate to the time/labor necessary for revising existing "model" building plans, additional material costs for meeting the new standards and additional costs relating to the space needed to make residential stair assemblies larger in floor area. Larger stair assembly area(s) also contribute to a loss of useable residential floor area, so dwellings may generally be enlarged to make up for the loss in useable floor space. Depending on the necessary design change parameters, those residential designers and builders that are not currently

⁴ For additional discussion of proposed rule 1309.0311, see page 14.

designing and building to this standard, the probable cost could be anywhere from several hundred to several thousand dollars per dwelling when there are stair assemblies within a dwelling. For those that are already designing and building to this standard, the probable costs of complying with this rule will be minimal.

(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 Department anticipates that the construction costs of not adopting the proposed rule for those persons working within the residential building industry would be indistinguishable from the costs of adopting the proposed rule. The costs of not adopting the less restrictive portions of the proposed rule would be comparable to the cost savings of not adopting the more restrictive portions of the proposed rule.

The Department anticipates that the consequence of not adopting the proposed rules could create confusion to those persons working within the residential building industry because they will be referring to more than one chapter in the family of codes that in turn incorporate versions of the national model codes from varying years. Likewise, the Department and local municipalities may encounter confusion and inconsistency in administering and enforcing the family of codes should each code chapter incorporate the national model code from differing years. Ultimately, to not update the residential code by adopting these proposed rules could result in confusion among those persons working in the residential construction industry, and to municipalities and the Department as they administer and enforce the family of codes.

(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 :

There are no applicable federal regulations that address safety in the construction of residential dwellings.

PERFORMANCE-BASED RULES

Minnesota Statutes, section 16B.61, 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 be adopted in terms of desired results instead of the means of achieving those results, avoiding wherever possible, the incorporation of particular methods or materials.

The 2006 IRC establishes minimum regulations for building systems using prescriptive and performance based provisions with emphasis on performance. The Chapter 1309 amendments to the IRC are intended to incorporate the philosophy required by Minnesota Statutes, section 16B.61.

ADDITIONAL NOTICE

This Additional Notice Plan was reviewed by the Office of Administrative Hearings and approved in a November 22, 2006 letter by Administrative Law Judge Richard C. Luis.

The Department will mail or email the Dual Notice of Intent to Adopt Rules to the following interested parties:

1. All municipal code officials and others involved in code administration. This list includes all municipal building officials responsible for administration of the state building code;
2. The Metropolitan Council;
3. League of Minnesota Cities;
4. Builders' Association of Minnesota;
5. Builders' Association of the Twin Cities;
6. Minnesota Masonry & Plaster Association;
7. American Council of Engineering Companies of Minnesota;
8. Council of American Structural Engineers/Minnesota;
9. American Society of Civil Engineers, Minnesota Section
10. International Masonry Institute;
11. Minnesota Concrete Masonry Association; and the
12. Minnesota Concrete Foundation Association.

We will also publish the proposed rules, Statement of Need and Reasonableness, and Dual Notice on the Department's website.

Our Notice Plan also includes giving notice required by statute. We will mail the Dual Notice to everyone who has registered to be on the Department's residential code rulemaking mailing list under Minnesota Statutes, section 14.14, subdivision 1a. Those persons include:

1. Municipalities;
2. Counties;
3. Architects and architectural firms;
4. Professional engineers and professional engineering firms;
5. Residential Builders;
6. Consultants;
7. Inspection service companies;
8. Certified building officials;
9. St. Paul Building Owners & Managers Association?
10. Elevator Consulting Services;
11. Minnesota Building Trades Council;
12. Minneapolis Building Trades Council;
13. Minnesota Mechanical Contractors Association;
14. National Electrical Contractors Association;
15. Minnesota Building Trades Council;

16. Minnesota Health & Housing Alliance;
17. Minnesota Multi Housing Association;
18. Minnesota Lath & Plaster;
19. Fire Marshal's Association of Minnesota;
20. American Institute of Architects—Minnesota; and
21. Association of Minnesota Building Officials.

We will also give notice to the Legislature per Minnesota Statutes, section 14.116.

CONSULT WITH FINANCE ON LOCAL GOVERNMENT IMPACT

As required by Minnesota Statutes, section 14.131, the Department has consulted with the Commissioner of Finance. We did this by sending Keith Bogut, Executive Budget Officer at the Department of Finance, copies of the documents sent to the Governor's Office for review and approval by the Governor's Office prior to the Department publishing the Notice of Intent to Adopt. We sent the copies on October 26, 2006. The documents included: the Governor's Office Proposed Rule and SONAR Form; almost final draft rules; and almost final SONAR. Mr. Bogut sent a memorandum dated November 13, 2006, which included the following comments:

"As part of the rulemaking process, DLI has invited comment from representatives of local governments on the proposed changes. In my opinion, the proposed changes will not impose a significant cost on local governments."

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 will exceed \$25,000 for any small business with less than 50 full-time employees⁵ or any statutory or home rule charter that has less than 10 full-time employees⁶ in the first year after the rules take effect. 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 rules do not require any modification to existing structures. The proposed rules only affect new construction and remodeling. Any small city or small business contemplating new construction or remodeling will decide whether and when the new construction or remodeling will occur. Because no new construction or remodeling is required by the proposed rules, no new construction or remodeling needs to be undertaken during the first year after the rules take effect.

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:

⁵ Hereinafter referred to as a "small business."

⁶ Hereinafter referred to as a "small city."

1. Department of Labor and Industry, Construction Codes and Licensing Division staff as to the reasonableness of the rules.
2. Advisory Committee members representing public interests, builders' associations, a code official association, associations related to masonry, concrete, lath and plaster, and a representative of the League of Minnesota Cities.⁷

RULE-BY-RULE ANALYSIS

1309.0010 ADOPTION OF INTERNATIONAL RESIDENTIAL CODE (IRC) BY REFERENCE.

This entire rule part is revised to reflect the 2006 version of the IRC, which is proposed for adoption.

Subpart 1. Generally. This subpart has been modified to correctly call out the 2006 IRC, and to change a reference to the commissioner of administration to the commissioner of labor and industry in accordance with Reorganization Order No. 193.⁸

Subp. 2. Mandatory chapters. This revision deletes a reference to Appendix Chapter K, which has been added into chapter 3 of the IRC. Because Appendix K is now a part of 2006 IRC, Chapter 3, the reference is no longer needed.

Subp. 3. Replacement chapters. Item E has been modified to reflect the ICC's renumbering of the IRC, which changes a reference from Section R317 to Section R313.

Subp. 5. Flood hazard or floodproofing provisions. This is a new subpart. The current residential code does not include language regarding flood-resistant construction. However, flood-resistant construction requirements have been introduced into the 2006 IRC. This subpart is necessary to delete the floodproofing provisions in the IRC and replace them with Minnesota Rules, chapter 1335, which incorporates regulations promulgated by the Office of the Chief Engineers, U.S. Army. The purpose of this proposal is to globally replace the provisions rather than amend every IRC section that references flood hazards or flood-proofing conditions.

Subp. 6. Elevators and platform lift provisions. This is a new subpart. Currently, the residential code does not include language regarding elevators and platform lifts; however, elevator and platform lift requirements have been introduced into the 2006 IRC. Any requirement for these conditions in the 2006 IRC should be replaced with Minnesota Rules, Chapter 1307, Elevators and Related Devices. The purpose of this proposal is to globally replace the 2006 IRC provisions rather than amend every IRC section that references elevators and related devices.

1309.0020 REFERENCES TO OTHER ICC CODES

Subpart 1. Generally. This subpart is revised to reflect the 2006 updated version of the IRC that

⁷ A list of the committee membership is attached as Exhibit A.

⁸ For a discussion of Reorganization Order No. 193, see page 2.

is proposed for adoption and adds a reference to “subparts 2 to 11” for clarity.

Subp. 5. Fuel gas code. This subpart corrects a typographical error by properly reflecting the Mechanical Code, Minnesota Rules, chapter 1346.

1309.0100 CHAPTER 1, ADMINISTRATION.

Subpart 1. IRC chapter 1. The revision made corrects a typographical error by properly identifying the IRC rather than the International Building Code (IBC).

Subp. 2. Existing buildings and structures. This new subpart exempts additions, alterations, or repairs to existing buildings or structures meeting the scope of the IRC from chapter 1311, Minnesota Conservation Code for Existing Buildings. The proposed subpart also clarifies that only the actual addition, alteration, or repair need comply with chapter 1309 requirements. The proposal also specifies that the existing elements of the structure that are unrelated to the actual addition, alteration, or repair are not retroactively required to comply with the current Residential Code since those buildings or structures are assumed to have been installed and maintained to the code that was in effect at the time of the installation.

1309.0202 SECTION R202, DEFINITIONS.

This rule part does not currently contain subparts. The existing language has been organized into subparts that amend Section R202 by modifying definitions and adding definitions that are not currently included in that Section of the IRC.

Subpart 1. Modifications. This new subpart specifies that IRC Section R202 be amended by modifying certain definitions so that the terms, as used in the residential code, are clearly understood.

DWELLING.

Single-family. This definition is needed to eliminate confusion regarding what structure can be classified as an IRC-1 single-family dwelling, and to differentiate between a two-family dwelling and a townhouse.

Two-family. This definition is needed to eliminate confusion regarding what structure can be classified as an IRC-2 two-family dwelling and to differentiate between a single-family dwelling and a townhouse.

Townhouse. This definition is needed to eliminate confusion regarding what structure can be classified as an IRC-3 Townhouse and to differentiate between a single-family dwelling and a two-family dwelling. This definition is needed because, traditionally, property lines have been used to determine when buildings are considered to be separate. The IRC does not require property lines between single-family dwellings in a townhouse group; however, the IRC intends that each be treated as a separate building. This amendment clarifies that dwellings in a townhouse group are separate buildings regardless of property lines. This amendment also clarifies that separate utilities are governed by the code chapters regulating those utilities.

Subp. 2. Additional definitions. This new subpart retains the definition of “crawl space,” and adds definitions to IRC Section R202.

CONNECTOR. This definition is needed to clearly define what devices are “connectors.”

CRAWL SPACE. This definition has not been modified in these proposed rules.

DAMPPROOFING. This definition is needed to eliminate confusion regarding the terms dampproofing and waterproofing. The proposed language comes from ICC-ES AC29⁹ section 1.4.1.

FASTENER. This definition is needed to clearly define what devices are “fasteners.”

FLASHING. Although “flashing” is a term that is used extensively in various code sections its meaning has not been clearly defined. The Merriam-Webster definition is “sheet metal used in waterproofing (as the angle between a chimney and a roof).”¹⁰ This definition focuses on the use of flashing in a roof-wall intersection, however flashings are not only used in roofing but are also widely used in a variety of other construction applications including but not limited to: exterior wall covering materials, windows, decks, stairs, trim, plumbing, chimney crickets, roof vents, and intersections of dissimilar materials etc. The proposed definition is needed because the term, as used within the context of the residential code, is more broadly based than the Merriam-Webster definition provides.

The word “approved” was included in the definition to delineate the role of the code in the selection of flashing materials and to provide an opportunity for input from manufacturers or industry representatives on the appropriateness of a particular material for its intended use. “Corrosion-resistive” is a phrase that was added from the model code that encompasses a wide range of materials. As to the purpose of “flashing,” it is common knowledge that its use is to “resist” the exposure of the assembly to the effects of water by “deflecting” it away from its point of likely entry. For example, flashing would include the flange of the protective boot used around a plumbing soil stack that penetrates through roof shingles. In this case, the upper half of the flange would be concealed under the shingles and the lower half exposed to allow incidental moisture to “deflect” from the protrusion of the soil stack.

KICK-OUT FLASHING. This definition is needed to clarify the distinction between “flashing” and “kick-out flashing” as used within the residential code. The kick-out or diverter flashing is used at the intersection of roof eaves and exterior walls. The kick-out flashing “deflects” water that runs down the inclined surface of the roof rake and “prevents” it from funneling into the wall assembly at this vulnerable location. Finally, “construction assembly” is used to broaden the scope of the use of flashing to all construction applications.

OCCUPANCY CLASSIFICATIONS. This definition is needed to clearly define the occupancy

⁹ International Code Council Evaluation Service Acceptance Criteria Number 29.

¹⁰ www.m-w.com

classifications that are used to identify particular types of residential dwellings. Like the definitions for single-family dwelling, two-family dwelling, and townhouse (see above) the occupancy classifications provided clarity to the code official, who has to classify the structure, as well as the residential designers and builders that must design and build structures that comply with the residential code.

STAIR. The residential code does not currently include a definition of “stair.” The proposed language mirrors the definition appearing in the 2006 IBC section 1002¹¹.

STORY ABOVE GRADE PLANE. This definition is needed to clearly define what constitutes a story. Currently, confusion regarding the definition of a story makes it difficult to determine whether a structure complies with the story limitations of the residential code. For example: When is a walkout basement, lookout basement or split-level floor considered a story? The proposed definition is needed to provide a clear answer for the residential designer, builder, and code official.

WATERPROOFING. This definition is needed to eliminate confusion regarding the terms waterproofing and dampproofing. The proposed language comes from ICC-ES AC29¹² section 1.4.2. The phrase “and bridges non-structural cracks” was included to bring clarity to the difference between waterproofing and dampproofing by stating clear, key performance expectations that complies with the intent of the provisions of the code.

1309.0300 SECTION R300, CLASSIFICATION.

This rule part is new language, which is intended to amend chapter 3 of the IRC by adding a new section. The proposed language is intended to provide an easy to use chart that specifies which occupancy classification refers to what type of dwelling.

1309.0301 SECTION R301, DESIGN CRITERIA.

Subpart 1. IRC Section R301.1.4. This new subpart amends section R301 by adding a section requiring all IRC-2 and IRC-3 buildings to have an automatic sprinkler system unless the building has 9,250 or less square feet of floor area. The proposal requires all IRC-1, IRC-2, and IRC-3 buildings containing state licensed facilities to have a fire suppression system when section R301.4.1.1 is more restrictive than applicable facility licensing provisions. The proposal also addresses installation requirements for attached garages, and particular attached covered patios/decks/porches and similar structures, and exceptions for the attached roofs or covered patios/decks/porches and similar structures that do not exceed 40 square feet of floor area. Finally, language was added to clarify that a fire-resistance-rated floor, wall, or ceiling assembly that separates dwelling units of IRC-2 and IRC-3 buildings are not separate buildings in and of themselves.

The proposed language provides clarity as to when an automatic sprinkler system or fire

11 Although the 2006 IBC Section 1002 defines stair, this rule part amends 2006 IRC Section 202.

12 International Code Council Evaluation Service Acceptance Criteria Number 29.

suppression system shall be installed. The 2006 International Building Code (IBC) and the 2006 International Fire Code (IFC) are currently in the process of being incorporated by reference, with amendments, as the Minnesota Rules, chapters 1305 and 7511 respectively. These two codes, as written by the ICC, require the installation of a fire suppression system in any size and type of residential dwelling/occupancy classification. The Department recognizes that this may be a concern for those municipalities in greater Minnesota that have limited access to a water supply. The Department's Construction Codes and Licensing Division consulted with a Minnesota builders association and fire service personnel in an effort to determine a minimum threshold that is beneficial and acceptable for the basic fire protection of residential dwelling structures that is not cost prohibitive. As a result of this consultation, these stakeholders and the Department agreed that 9,250 square feet of aggregate area was a reasonable threshold to provide the minimum level of protection.

Subp. 2. Table R301.2(1). The proposed language is limited to changing the subpart reference from subpart 1 to subpart 2.

Subp. 3. Figure R301.2(5). The proposed language is limited to changing the subpart reference from subpart 2 to subpart 3.

1309.0302 EXTERIOR WALL LOCATION.

This new rule part amends IRC Section R302.1.

R302.1 Exterior walls. The 2006 IRC Table 302.1 includes a potentially confusing phrase: "one-hour fire-resistive construction on the underside." This phrase is not consistent with any listed or labeled design that is specifically for fire resistive on the "underside." In order to provide clarity to this phrase, a footnote (footnote "a") was added to the "one hour on the underside" requirement. Additionally, the table includes an exception for "...playhouses, and similar structures exempted from permits." The exception has been deleted because these types of structures do not require a permit in Minnesota.

1309.0309 SECTION R309, GARAGES AND CARPORTS.

This new rule part addresses floor surface materials in garages and carports, and automatic garage door opening systems.

Subpart 1. IRC Section R309.3, and Subp. 2. IRC Section R309.4. These amendments to the IRC clarify the types of permitted floor surface materials that may be used in garages and carports, which the 2006 IRC limits to non-combustibles, which have been interpreted to mean concrete. Currently, the residential code permits the use of sand, gravel, asphalt, and concrete as floor surface materials. The proposed language continues this tradition by including all currently permitted floor surface materials.

Subp. 3. IRC Section R309.6. This subpart addresses automatic garage door opening systems. The Legislature has regulated such systems in Minn. Stat. §§ 325F.82 to 325F.83 (2004) and

Minnesota Rules, part 1303.1400. The proposed amendment to Section R309.6 replaces the IRC language with language that mirrors Minnesota Rules, part 1303.1400 so that the residential code is consistent with Minnesota requirements that exist outside of this chapter. The modification is intended to eliminate confusion regarding interpretation and enforcement as it relates to automatic garage door opening systems.

1309.0310 SECTION R310, EMERGENCY ESCAPE AND RESCUE OPENINGS.

R310.1 through R310.1.4. These portions of the rule are being deleted because the ICC has included similar language in the 2006 IRC. The language of the 2006 IRC identifies that a window or door may be used for the purpose of emergency escape and rescue, and additional emergency escape and rescue openings are not required for areas adjacent to sleeping rooms with the required egress openings, which is consistent with the intent and purpose of the existing rule. Since this is now addressed by the 2006 IRC, it is no longer necessary to retain this language.

The 2006 IRC also modified the uniform ceiling height of 48 inches above the exterior grade from the exterior wall to a public way to 36 inches. Typically this means 36 inch ceiling from the grade to the underside of deck constructed above the emergency escape and rescue opening. The 2006 IRC has also modified the language to require emergency escape and rescue openings in "basements and every sleeping room." This is a major change from "basements with habitable space" as written in the 2000 IRC. Other language added to the 2006 IRC identifies that these openings must also open directly into a public street, public alley, yard, or court.

R310.5 Replacement Windows. This portion of the rule has been modified to clarify requirements for replacement windows. The proposed rule exempts replacement windows that are installed in buildings meeting the scope of the IRC from the requirements of Section R310.1, when the replacement window meets certain exceptions. Section R310.1 was added to the exempt references regarding opening area, opening height and opening width to allow modification to the sill height requirements for new window installations.

The proposed rule deletes item 3 because it pertains to Fire Code requirements that are not enforced by the building official.

The proposed rule deletes item 4 because a sleeping room receiving an addition or extensive remodel involving window replacement provides the opportunity to install a compliant emergency escape and rescue opening. In most cases an extensive remodel project will expose the framing system allowing the installation of an opening having proper area, height and height above the floor. An addition by its own nature will provide new wall framing also allowing a proper emergency escape and rescue opening.

The Division believes that homeowners are likely to experience a reduction in the overall costs of replacement windows since their installation is likely to require less modification to the existing window opening, fewer siding alterations, and reduction in interior finish repairs.

1309.0311 SECTION R311, MEANS OF EGRESS.

Landings

This new rule part reflects the renumbering of the IRC. The proposed rule includes language to clarify when a landing is required for a non-exit exterior door and the threshold requirements for exterior doors because this portion of the 2000 IRC¹³ is frequently misinterpreted. The ICC attempted to clarify these requirements in the 2006 IRC Section R311.4.3. However, the language is difficult to understand. The proposed rule reorganizes the IRC text so that the requirements for non-exit exterior door landings and the threshold for exterior doors are easier for the reader to understand and apply. To achieve the clarity desired, the proposed rule adds two parts¹⁴ to R311.4.3 to address these requirements individually. In this way, the user will be able to clearly identify and apply the correct requirements to the non-exit exterior door and the exterior door. The Department believes that this will result in more consistent compliance with these requirements.

The language of 2006 IRC Section R311.4.3 is the same as the proposed rule in many respects. However, some sentences appear in a different order or are repeated to accommodate the two parts that appear in the proposed language. Modifications were also made to clarify that, in some cases, landings are not required, and to replace a few words and phrases that could be ambiguous.

Additionally, the proposed language for R311.4.3.1, item 2, includes exit doors to more effectively prevent moisture problems due to rainwater splash back and snow build up in this area; R311.4.3.2 differentiates the provisions for an exit door from those of a non-exit exterior door; and R311.4.3.2, item 1, replaces the phrase "the landing at an exterior doorway" with "the exterior landing" to simplify the language.

Finally, the proposed language for R311.4.3.2, item 2, addresses the difficulties encountered in meeting the two-riser condition imposed by the 2006 IRC. Local builders need approximately 20 inches for many exterior stairs or temporary stairs placed on new dwellings. These initial stairs are typically built without frost footings and are normally replaced later by decks. If footings and a landing are required it unreasonably increases present and future costs for homeowners. The proposed 30-inch dimension will allow a reasonable tolerance and equals the maximum requirement for a floor or deck surface without requiring a guardrail in section R312.1. This modification is also consistent with the Minnesota Rule, part 1309.0315¹⁵, which is not being modified in this rulemaking. The Division believes that the proposed rule will decrease construction costs as it relates to non-exit exterior doors, and thresholds for exterior doors because the number of landings constructed, where they are not required, would decrease.

13 Landings at doors was Section R312.1.2 in the 2000 IRC.

14 The proposed rule creates two parts to 2006 IRC Section 311.4.3. They are R311.4.3.1 Landings at the exterior exit door required by Section R311.4.1, and R311.4.3.2 Landings at exterior doors other than those required by Section R311.4.1.

15 Minn. R. part 1309.0315 addresses handrails on stairs with four or more risers to address common garage stairs.

Stairways

The requirement for stairways are currently located in Minnesota Rules, part 1309.0314. To remain consistent with the numbering scheme of the 2006 IRC, Stairways are now located in Section R311.

The ICC's renumbering of IRC Section 314 to Section 311 impacts language that is proposed for deletion in Minn. R. ch. 1309.0314, which currently pertains to stairways, but with the ICC renumbering, now pertains to foam plastic.¹⁶ The language currently in Minn. R. 1309.0314 is not proposed to be adopted as part of another rule, but rather would be incorporated by reference without the amendments that were adopted during the 2000 code cycle into this rule part. For those reasons, the changes pertaining to stairways are discussed in this part of the SONAR and the requirements of proposed rule 1309.0314 are discussed on page xx.

In some cases, the proposed rule deletes the amendments that were made to the 2000 IRC because the text of those amendments are in the 2006 IRC. Those sections are:

- R314.1 Width: This language has been renumbered as R311.5.1.
- R314.3 Headroom: This language has been renumbered as R311.5.2.
- R314.5 Spiral stairs: This language has been renumbered as R311.5.8.1.
- R314.6 Circular stairways: This language has been renumbered as R311.5.8.1.
- R314.7 Illumination: This language has been renumbered as R311.5.7.
- R314.8 Under stair protection: This language has been renumbered as R311.2.2.
- R314.9 Bulkhead enclosure stairways: This language has been renumbered as R311.5.8.2.

The proposed rule also deletes amendments that were made to the 2000 IRC as it relates to treads and risers, profile, and winders. The 2006 IRC does not include the text of these amendments, and the Department proposes to adopt these IRC Sections as written by the ICC. A summary of the current requirements and the requirements that would apply under the 2006 IRC if the proposed rule is adopted are:

- R314.2 Treads and risers: Currently, treads are required to be 9" and risers are 8". The proposed rule, by incorporating IRC Section R311.5.3, requires a 10" tread and a 7 3/4" rise.
- R314.2.1 Profile: Currently, open risers are permitted, provided that the opening between treads does not permit the passage of a 4" diameter sphere. The proposed rule, by incorporating IRC Section R311.5.3.3, retains that standard with the inclusion of nosing requirements that regulate the radius of the curvature and beveling of stair tread nosing.
- R314.4 Winders: Currently, the requirement is a minimum tread depth of 9" measured 12" from the narrower side of the stair. The proposed rule, by incorporating IRC Sections R311.5.3.2, R311.5, R311.5.6, and R311.5.8, requires a 10" minimum tread

¹⁶ For a discussion of foam plastic, see proposed rule 1309.0314, page 17.

depth measured at 12" from the narrower side of the stair.

These modifications were initiated by and supported through an informal agreement between the Minnesota Building Codes and Standards Division (BCSD) of the Minnesota Department of Administration, and the Builders Association of Minnesota (BAM). The history of the agreement stems from longstanding code provisions found in the State's previous building code (the UBC), which contained provisions comparable to the amendments that are proposed for deletion. The State of Minnesota had adopted and used the UBC during the 30-years before the adoption of the 2000 IRC. During that time, the standards described in the amendments proposed for deletion became accepted by residential designers and builders as the "norm."

Issues regarding these requirements surfaced with the adoption of the 2000 IRC. Without amendment, the 2000 IRC would have imposed requirements comparable to the requirements in the 2006 IRC. During the rulemaking process for the adoption of the 2000 IRC, BAM argued that these changes would be too significant and too costly, and that they were not adequately prepared for these changes. BAM made it clear that they were in favor of adopting the 2000 IRC, but that they did not support the IRC provisions regarding the amendments that are proposed for deletion. Again, during the rulemaking process, agency staff received requests and recommendations for changes to these requirements.

Because the IRC is a national model code and because it was the intent of surrounding states to adopt the same code, the agency determined that, for the sake of consistency and uniformity, it would work with surrounding states to adopt similar standards. After discussing the issues with surrounding states (Wisconsin, Iowa, North Dakota and South Dakota), it was apparent that the same design concerns raised by BAM in Minnesota were being discussed in those states. The surrounding states and Minnesota determined it would be best for each state to have the same provisions with respect to these issues. BAM agreed with this concept. The adoption of the IRC was critical to each state though, so the primary concern tended to be garnering support for the adoption of the 2000 IRC. To that end, and in an effort to provide consistency, each state's code agency formulated an informal agreement with the residential builders association in their state. The agreement in each state essentially amended the IRC to conform to the provisions previously found in the UBC with the understanding that each amendment would be repealed or deleted within one code cycle – to revert to the language of the IRC without further amendment. All parties agreed in principal, which is where we are today.

The one code cycle agreement terminates with the proposed adoption of the 2006 IRC. As a result, the Department proposes to delete these amendments and enforce the 2006 IRC parameters. In preparation for these changes, Department staff have promoted these changes at most - if not all - of its contractor training seminars, annual schools, conferences, etc., throughout the state while receiving little objection to the proposed change. Residential builders, presumably, have had over two years to revise building plans and prepare for the implementation of the IRC requirements.

By deleting the amendments that were made to the 2000 IRC, the State of Minnesota will be adopting the original language of the 2006 IRC. This brings the building code closer to: (1)

the requirement in Minnesota Statutes § 16B.59 that the state building code provide for uniform performance standards; and (2) the requirement in Minnesota Statutes § 16B.61, subdivision 1, that the state building code “conform insofar as practicable to model building codes generally accepted and in use throughout the United States.”

1309.0312 SECTION R312, LANDINGS.

The rule part is proposed rule repeal because the ICC renumbered this section in the 2006 IRC Section R311.4.3. Please see proposed rule part 1309.0311 for an explanation of the proposed modifications¹⁷.

1309.0313 SMOKE ALARMS.

This new rule part is the result of the ICC’s renumbering of Section R317.1 to Section R313.2.1. The Department proposes to follow suit and renumber Minnesota Rules, part 1309.0317 to Minnesota Rules, part 1309.0313 so that it is easier for the user to find the code requirement.

In addition to relocating the requirements of Minn. R. 1309.0317 to proposed rule 1309.0313, the second exception was rewritten to remove language that is causing confusion and inconsistent enforcement due to the vast range of subjective interpretations that are possible in the rule as currently written. The proposed language is intended to clarify the exception.

Finally, the proposed rule adds a third exception. This exception is intended to clarify that plumbing work, electrical work, or mechanical work, do not require the installation of smoke alarms in existing dwellings. The Department believes will result in more uniform code enforcement and eliminate the possibility of an unnecessary smoke alarm installation where the installation is not required and the homeowner has not chosen to install a smoke alarm as a result of that work.

1309.0314 SECTION R314, FOAM PLASTIC.

This rule part has been modified to reflect the ICC’s renumbering of the 2006 IRC. The current rule pertains to stairways, which is now located in proposed rule 1309.0311. For a discussion of the modifications to the current rule pertaining to stairways, please see proposed rule 1309.0311 above.

The ICC renumbering has re-used Section R314, which now applies foam plastic. As a result, the proposed rule shows stricken language pertaining to stairways and new language pertaining to foam plastic.

The proposed rule adds language to clarify the 2006 IRC Section R 314.5.11 reference to “sill plate and header” by including the phrase “rim joist” as a parenthetical because “rim joist” is the terminology used by Minnesota contractors. The Department believes that this change will

¹⁷ See page 14.

eliminate any potential confusion of interpretation and enforcement.

1309.0315 SECTION R315, HANDRAILS.

This rule part is proposed for repeal because the ICC has renumbered that section as 2006 IRC Section R311.5.6, and the requirements are now located in that section and sections R311.5.6.1 and R311.5.6.2.¹⁸

1309.0316 SECTION R316, GUARDS.

This rule part is proposed for repeal because the ICC has renumbered that section as 2006 IRC Section R312.2, and the requirements are now located in that section.¹⁹

1309.0317 SECTION R317, DWELLING UNIT SEPARATION.

The proposed rule deletes the text related to smoke alarms because the ICC renumbered this language as 2006 IRC R313.1.1. This rule part also contains new language that is intended to clarify the requirements for dwelling unit separation. The proposed rule part includes subparts to address the particular needs of various types of dwellings.

Subpart 1. IRC Section R317.1. This new subpart clarifies how far separation needs to occur when the separation terminates at the roof eave in two-family dwellings. The proposed subpart is needed because the separation requirements for two-family dwellings are routinely enforced differently throughout the state. The intent of the proposed rule is to bring clarity and uniform enforcement for these types of building elements.

This subpart also includes four exceptions: The first exception reduces the fire resistance rating to ½ hour when the building is equipped throughout with an automatic sprinkler system that is installed in accordance with Section R301.4. The second exception limits wall extensions into the attic area with permitted draftstops. The third exception addresses decks, balconies, patios, entries, and similar structures that are routinely attached to two-family dwellings. This new language is proposed because these types of structures are not addressed in the 2006 IRC. The intent of the language is to except the separation requirement for these types of structures because there is minimal hazard presented since these types of structures are exposed and they contain no concealed or habitable spaces. Finally, the fourth exception addresses decks, patios, entries and similar structures when a roof is covering the structure. The proposed language specifies a threshold based upon a reasonable square footage where there is minimal hazard, and the specific installation requirements of roofs over these structures and when separation is required.

This subpart also includes language specifying that when floor assemblies are required to be fire-resistance-rated, the supporting construction of those assemblies must have an equal or greater fire-resistive rating. This language is needed for uniform application of fire separation

¹⁸ This rulemaking does not propose any modification to these sections.

¹⁹ This rulemaking does not propose any modification to 2006 IRC Section R312.2.

requirements.

Subp. 2. IRC Section 317.2. This new subpart clarifies that each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies that meet the requirements of Section R302 for exterior walls.²⁰

The proposed language includes three exceptions: The first exception specifies that a common two-hour fire-resistance-rated wall is permitted if those walls do not contain plumbing or mechanical equipment, ducts, or vents in the wall cavity. This exception also specifies that electrical installations must be installed in accordance with the Electrical Code,²¹ and that the penetration of electrical outlet boxes must be in accordance with Section R317.3. The second exception addresses decks, balconies, patios, stoops, entries, and similar structures that are not covered by a roof because the 2006 IRC does not specifically address these situations as it relates to townhouses. However, these types of structures are routinely attached to townhouses and may cross over property lines both real and assumed. The intent of the language is to except the separation requirement for these types of structures because there is minimal hazard presented since these types of structures are exposed and they contain no concealed or habitable spaces. Finally, the third exception addresses decks, patios, stoops, entries, and similar structures when a roof is covering the structure. The proposed language specifies a threshold based upon a reasonable square footage where there is minimal hazard, and the specific installation requirements of roofs over these structures and when separation is required.

This subpart also specifies that the fire-resistance-rated wall or assembly separating townhouses must be continuous from the foundation to the underside of the roof sheathing, roof deck, or roof slab, and the required extension. This language is needed for uniform application of fire separation requirements.

Subp. 3. IRC Section R317.4. This subpart adds a new section to the 2006 IRC Section R317 in order to make the requirements of the 2006 IRC, Appendix K, which addresses sound, more easily accessible to users. The proposed language repeats the content of Appendix K, without modification, and brings it into the section of the Code to which it applies.

1309.0318 SECTION R318, MOISTURE VAPOR RETARDERS.

The modifications to this rule part include deleting the text related to Section R318.2.7 because the ICC renumbered this section as 2006 IRC Section R314.5.11.²² The proposed rule also includes an amendment to 2006 IRC Section R318.1, which pertains to moisture control. The proposed language has been renumbered from Section R322.1, and is consistent with current code requirements and the Energy Code.²³ The proposal intends to prevent possible conflicts within the provisions of the residential code and the energy code.

20 To review Section R302, see page 12.

21 The Electrical Code is found in Minn. R. ch. 1315.

22 To review section R314.5.11, see page 17.

23 The relevant Energy Codes are found in Minn. R. ch. 7670 and 7672.

1309.0322 SECTION R322, MOISTURE VAPOR RETARDERS.

This rule part is proposed for repeal because the ICC has renumbered that section as 2006 IRC Section R318.1, and the requirements are now located in that section.²⁴

1309.0403 SECTION R403, FOOTINGS.

This language was proposed as an amendment to the national model code by the National Association of Home Builders and was accepted for the 2006 IRC at the national model code hearings in Nashville in 2003. This amendment to the model code was not challenged by anyone at the 2006 IRC national code hearings in Overland Park Kansas in May 2004.

For instances where the wood sill plate is 24 inches in length or less, such as short walls that provide offsets to long braced wall panels, the requirement for a minimum of two anchor bolts is excessive. This proposed change will allow the short walls, which do not provide any significant strength in the main force resisting direction, to be attached with fewer bolts, while still maintaining uplift protection. The uplift protection will be provided through the proper attachment of the short offset walls to the main braced wall line per the attachment requirements listed in the code. In addition, walls shorter than 12" in total length provide virtually no additional strength to braced wall lines and therefore need only to be protected from uplift forces, which can be accomplished by proper connections, such as those specified by the code and referenced in the proposed change.

1309.0404 SECTION R404, FOUNDATION AND RETAINING WALLS.

This rule part has been modified by renumbering two subparts, deleting the remaining subparts, and adding subparts that reflect the renumbering of the IRC by the ICC in 2006. As a result, some subparts have been renumbered to accommodate the organizational structure of the model code.²⁵ The Department recognizes that this may create confusion for the reader of this SONAR. However, we believe that using the numbering conventions of the 2006 IRC in this proposed rule will create a rule where the user can easily find the information needed because the references to the various IRC sections and tables will appear in numerical order.

Subpart 1. Section R404.1. This proposed rule amends items 4 and 5 of this section of the model code. Item 4 specifies that floors shall be blocked perpendicular to the floor joist, and that blocking shall be full depth within three joist spaces. This modification is necessary because, as written, the model code significantly increases the bracing requirements for floors supporting basement walls. The Department anticipates that this modification will also be reflected in the 2009 IRC since it was proposed and approved for inclusion in the 2009 IRC at the Orlando ICC Code Development Hearing, which took place in September 2006.

²⁴ For a discussion of moisture vapor retarders, see proposed rule 1309.0318 on page 19.

²⁵ Currently this rule part has six subparts. Subparts 1-2 have been renumbered in the proposed rule, and subparts 3-6 appear as stricken language in the proposed rule. The language currently in subparts 1 and 2 have been renumbered as proposed subparts 4 and 5 respectively. Proposed subparts 1-3 and 6-9 are new amendments to the 2006 IRC.

Item 5 is amended by deleting the language corresponding to Table R404.1(3) because that table has been deleted from the residential code since it is restrictive when compared to current requirements.

Subp. 2. Table R404.1(2). This is new subpart adds a 2006 IRC table that specifies the maximum anchor bolt spacing for supported foundation walls. The proposed table amends the requirements by meeting the intent of the table in the 2006 IRC in a less restrictive and more economical way.

Subp. 3. Table R404.1(3). The modifications to this subpart delete the current rule, which deletes IRC Table R404.1.1(1) in its entirety.²⁶ The proposed subpart deleted Table R404.1(3) because the table is much more restrictive than current practice.

Subp. 4. Section R404.1.1. The current language of this subpart is proposed for deletion and has been replaced with the content of the text currently located in Minn. R. ch. 1309.0404, subp. 1. The proposed subpart includes grammatical modifications and adds a cross reference to Table R404.1.1(1) because the table is no longer deleted. Language has been added to maintain consistency with the 2006 IRC. Clarity has also been added by more clearly specifying when Tables R404.1.1(6), R404.1.1(7), or R404.1.1(8) should be applied.

Subp. 5. Section R404.1.2. The current language of this subpart is proposed for deletion and has been replaced with the content of the text currently located in Minn. R. ch. 1309.0404, subp. 2. The proposed subpart correctly identifies applicable tables and sections, and specifies the construction requirements for cantilevered concrete foundation walls. These changes provide clarity to the user without changing current requirements.

Subp. 6. Table R404.1.1(6). The current language of this subpart is proposed for deletion to reduce the number of amendments to the IRC and increase consistency with the IRC. The proposed language amends 2006 IRC Section R404 by adding a new table that specifies construction requirements for cantilevered concrete and masonry foundation walls with an 8" nominal thickness.

Subp. 7. Table R404.1.1(7). This new subpart amends 2006 IRC Section R404 by adding a new table that specifies construction requirements for cantilevered concrete and masonry foundation walls with a 10" nominal thickness.

Subp. 8. Table R404.1.1(8). This new subpart amends 2006 IRC Section 404 by adding a new table that specifies construction requirements for cantilevered concrete and masonry foundation walls with a 12" nominal thickness.

Subp. 9. IRC Section R404.1.3. The proposed language adds an exception to condition two of Section R404.1.3, which specifies that cantilevered concrete and masonry foundation walls that

²⁶ Currently, subpart three deletes IRC Table R404.1.1(1) because the requirements of reinforcements in these low unbalanced backfill heights would add considerable and unnecessary cost to the construction of the wall.

are constructed in accordance with Tables R404.1.1(6), R404.1.1(7), or R404.1.1(8) are excepted from the requirements of this section.

1309.0406 SECTION R406, FOUNDATION WATERPROOFING AND DAMPPROOFING.

This new rule part specifies the Minnesota amendments to the 2006 IRC Section R406 in order to create compatibility with the Energy Code and other statutory requirements. Damp and wet foundations, while not unique to Minnesota, need to be addressed in the Code for building durability.

This rule part, in specifying requirements related to the waterproofing and dampproofing of foundations, uses two subparts to distinguish between the requirements for foundation waterproofing and foundation dampproofing so that the user can easily locate, understand, apply, and comply with the requirements.

Subpart 1. IRC Section R406.1. This subpart specifies requirements related to dampproofing concrete and masonry foundations. The proposed language adds “at a minimum” to encourage contractors to apply dampproofing products beyond the grade height adjacent to the foundation. This requirement is necessary because many dampproofing products require the product to be applied to the entire height of the foundation. Numerous dampproofing product manufactures required their product to be applied the entire height of the foundation. This additional language is intended to result in a more uniform application of dampproofing products.

Subp. 2. Section R406.2. This subpart specifies the requirements related to waterproofing concrete and masonry foundations. The proposed language encourages contractors to apply the waterproofing products beyond the grade height adjacent to the foundation. This requirement is necessary because numerous waterproofing product manufactures required their product to be applied the entire height of the foundation. Text was also added to eliminate the requirement for waterproofing in Group I soils due to their well draining soil characteristics. This additional language is also intended to result in a more uniform application of waterproofing products.

1309.0506 SECTION R506, CONCRETE FLOORS (ON GROUND).

This rule part is proposed for repeal because the 2006 IRC has amended the language that prompted the Minnesota amendment that was written for the adoption of the 2000 IRC. The 2006 IRC also includes text identifying the required vapor retarder mil thickness that was omitted in the 2000 IRC.

1309.0602 SECTION R602, WOOD WALL FRAMING.

Subpart 1. IRC Table R602.3.1. This new rule part amends the model code by providing a convenient way for builders to construct walls over 10' 0" under certain parameters without having to hire a structural engineer to approve individual house plans. As written in the model code, Minnesota contractors cannot use Table R602.3.1 because snow loads in Minnesota exceed

the table's maximum of 25 psf in footnote b. Several local code officials asked the Builders Association of Minnesota (BAM) to have this table modified to reflect conditions found in Minnesota.

BAM hired Don Stehler, a structural engineer with Stehler Structural Engineering, Inc. to update the table so Minnesota contractors and code officials could easily use Table R602.3.1 to build and approve taller walls that would be structurally sound in our climate. The following assumptions were used to produce the values in the proposed table:

1. The wind exposure was changed from 100 to 90 mph to match the climatic and geographic design criteria for Minnesota.
2. A ground snow load of 60 psf and a roof snow load of 42 psf were used, so that the table can be applied anywhere in the state.
3. Dimensional lumber of SPF#2 or better is required.
4. Only walls supporting a roof only were considered. Walls supporting either "one floor and a roof" or "two floors and a roof" were dropped from the table.
5. The table was analyzed using either Exposure categories B or C. The original IRC table did not specify an exposure category.
6. A deflection rate of L/120 was used.
7. A new warning was added to the top of table heading that warns the user that design is required if all assumptions in the footnotes are not met.
8. The columns previously titled "Height (feet)" was changed to "Maximum wall height (feet)" to clarify the provisions of this code section.

Given the extensive and thorough analysis of this issue the proposed rule is reasonable and will allow code officials the ability to approve walls taller than 10' 0" for spans up to 34' without compromising safety goals.

The Department believes that the proposed rule will reduce the cost of construction by allowing contractors to build tall walls that comply with the building code without having to hire a structural engineer solely to confirm that wall designs that have been used extensively in the past, without failures, are indeed safe.

1309.0703 SECTION R703, EXTERIOR COVERING.

Subpart 1. Weather resistive sheathing paper; and Subp. 2. Table R703.4. These two subparts are proposed for repeal because these amendments were intended to amend the 2000 IRC. The amendment required a weather-resistive sheathing paper over sheathing of all exterior walls. The 2006 IRC Section R703.2 and IRC Table R 703.4, as written, address the concerns that prompted the amendments that were made to the model code in 2000. As a result the amendments are no longer necessary.

Subp. 3. Section R703.6. The proposed rule includes the following modifications:

R703.6 Exterior plaster. The proposed modifications are intended to provide uniformity and

clarity for users. Currently, Minn. R. ch. 1309.0703 subp. 3, references ASTM C 926 and ASTM C 1063. Reference to ASTM C 926 did not exist within the Reference Standards chapter of the 2000 IRC so the reference was added by amendment in the 2000 code cycle. The 2006 IRC references ASTM C 926-98a and ASTM C 1063-03 within the text of Section R703.6. This amendment is proposed in order to remain consistent with the 2006 IRC. The words “and provisions of this code” were added for consistency with the 2006 IRC.

When utilizing the Reference Standards chapter of the 2006 IRC each of the reference standards noted above include the year of the reference standard, which is shown as ASTM C 926-98a and ASTM C 1063-03. The proposed rule includes the year the reference standard to provide a method to track the standard that was in effect at a given point in time, which, since the standards can change over time, will be extremely helpful when researching product or installation failures.

R703.6.1 Lath. The current amendment to the 2000 IRC has been modified to specify the minimum penetration of the fastener into the supports because the language in the 2006 IRC is vague. The proposed rule continues to identify the minimum gage of nails and staples but replaces the specified nail and staple length with a minimum $\frac{3}{4}$ inch penetration in to the supports. This requirement is necessary so that the weight of stucco²⁷ can be adequately supported.

ASTM C 1063-03 provides much more detailed language in this respect in maintaining a $\frac{3}{4}$ ” penetration into the support. Because the code provides minimum requirements and most contractors will not have immediate access to ASTM C 1063-03, the proposed rule reflects a minimum penetration into the support of $\frac{3}{4}$ -inch.

ASTM C 1063-03 provides for minimum spacing requirements of 7 inches between fasteners. Because lath sheets are 25 $\frac{3}{4}$ inches wide and 98 inches long a spacing requirement greater 6-inches will limit the number of fasteners to three per support. The proposed rule requires a 6-inch spacing to provide a minimum of 4 fasteners at each support.

R703.6.1.2 Weep screeds. This IRC Section is numbered as R703.6.4 in the current rule. As a part of the renumbering of the 2006 IRC, the section has been renumbered as R703.6.1.2.

The proposed language correctly calls out the applicable ASTM reference by replacing ASTM C 926 with ASTM C 1063-99. The phrase “or plastic weep screed” was added to recognize other acceptable materials.

R703.6.1.3 Control and Expansion Joints. The proposed language clarifies the existing provisions of section 703.6 on Exterior Plaster, which references ASTM C 1063-03. As a result of this reference, sections 7.11.4 – 7.11.4.4 of this standard provides parameters for the installation of control joints. The proposed language is needed to clarify the requirements and address the unique character and architectural expression of the majority of today’s residential

²⁷ Stucco weighs approximately 9-lbs./sq. ft.

structures.

The decision to use control and expansion joints, the type selected and their location should be subject to the plaster application designer's consideration based upon optimum function and aesthetics.

R703.6.2 Plaster. The proposed rule deletes text pertaining to plaster. By deleting this language, the user will refer to this section of the IRC for guidance. The language in 2006 IRC Section R703.6.2 mirrors the intent of this portion of the existing rule. The user will also find that additional options for backing materials are permitted, with the exception adding pressure-preservative treated wood or decay-resistant wood backing material for plaster applications. The text of 2006 IRC Section R703.6.2 is identical to the current amendment with the exception adding pressure-preservative treated wood or decay-resistant wood backing material for plaster applications.

R703.6.3 Weather-resistant barriers. The modification that was made to this section of the 2000 IRC is proposed for deletion because the 2006 IRC contains the language. The 2006 IRC also adds an exception that permits the installation of a weather-resistant barrier or wood-based sheathing that has a water resistance equal to or greater than that of 60 minute Grade D paper when separated from stucco by an intervening, substantially nonwater-absorbing layer or designed drainage space.

Subp. 3a. Section R703.7. The proposed language adds a sentence to the end of Section R703.7 that specifies the seismic design and limitations for those structures that are in a 90 mph wind speed region.

Subp. 4. Section R703.7.1, Subp. 5. Figure R703.7.1, Subp. 6. Section R703.7.2, Subp. 7. Section R703.7.2.1, and Subp. 8. Section R703.7.2.2. These subparts are proposed for repeal to reduce amendments and increase consistency with the 2006 IRC.

Subp. 8a. Section R703.7.4.3 Mortar or grout fill. Precast stone veneer has gained a wide and growing acceptance in popularity as an exterior cladding. With that growing acceptance comes the realization that the installation of this product is not well defined or regulated. It is then reasonable to establish uniform installation requirements that ensure minimum standards of practice.

While the issue of two layers of Grade D building paper is specific in the Minnesota State Building Code with respect to stucco installations over wood based sheathing, this requirement is apparently overlooked relative to masonry veneer and in particular to precast stone veneer. The obvious correlation between the two products is that stucco, in various compositions, is used as the base mortar coat or grout fill and the veneer is used as the finish material. Stucco, portland cement plaster, mortar fill and grout fill are in fact all essentially the same material. Precast stone veneer is also similar in composition to stucco and was actually invented by a stucco contractor. Referencing Sections R703.2 and R703.6.3 then reflects the uniformity between these two closely related operations, and the proposal adds references to other codes sections relating to

weather-resistive membrane material.

R703.7.4.4 Masonry veneer on sheathed substrates. As indicated above, precast stone veneer has gained a wide and growing acceptance in popularity as an exterior cladding. Since the installation of this product is not well defined or regulated, it is reasonable to establish uniform installation requirements that ensure minimum standards of practice.

A cursory review of some of the precast stone veneer manufacturers installation instructions reveal that in virtually every case, a weather-resistant barrier and galvanized expanded metal lath is necessary in an installation over sheathing. In Minnesota, the preferred method of installation for both stucco and veneer over a mortar or grout fill is to provide for a rigid sheathing back-up material behind such an installation.

A review of manufacturer installation instructions and Evaluation Reports indicates a wide level of acceptance for the requirement of fasteners penetrating the wood supports a minimum of 1-inch. Moreover, the reference to section R703.6.1 encompasses a range of fasteners that would be appropriate in such an installation.

Subp. 9. Section R703.8. This subpart has been modified to address concerns related to water intrusion. A term that has entered the construction vernacular in recent years is kick-out flashing. Kick-out flashing is located at a vulnerable point in a construction assembly where the intersecting elements of a lower roof and a wall cladding creates a void. If this area is left unattended by flashing, large volumes of water washing down a sloped roof deck can actually be funnelled directly into a wall envelope.

The cost of flashing material is in itself minimal and the Department anticipates that the cost will reduce as manufactured kick-out flashing becomes available. Currently the flashing can be field fabricated or shop manufactured based on the builders preference. The benefits gained by the kick-out flashing out way the the minimal costs incurred by the requirement.

1309.0802 SECTION 802, WOOD ROOF FRAMING.

This new rule part amends 2006 IRC Section R802.10.5, by specifying that truss to wall connections must be made with approved fasteners or connectors.

The current section R802.10.5 text is confusing in a number of ways. It creates an inconsistency between truss-to-wall and rafter-to-wall connections. It is not clear whether toe-nails are an approved connector, and as a result causes enforcement problems. The 175-pound connector capacity is arbitrary, and it is not clear what to do if the uplift force is larger than 175 psf. It does not clearly state where this uplift force comes from. It also is intended to disallow toe-nails fasteners as a valid connector, even though toe-nails are a recognized fastener according to the National Design Specification (NDS).

The current section R802.10.5 text is intended to require metal connectors regardless of the truss uplift forces. Many trusses, particularly those with very short spans such as in hip sets,

have very low uplift forces. It seems unreasonable to require 175-pound capacity metal connectors for such trusses, especially when properly installed toe-nails are adequate and are recognized by the NDS. This section, as written causes unnecessary additional cost.

The proposed language change will clarify the paragraph, will reduce construction cost, and will help ensure that connections between the trusses and walls are adequate for the appropriate design loads. It makes enforcement easier because confusion is eliminated and the building official can clearly ask the builder or homeowner to show that design uplift forces are being resisted properly. Furthermore, it still provides direction for attachment of the trusses to the wall, which is the primary reason that section R802.10.5 was added in the first place.

1309.0806 SECTION R806, ROOF VENTILATION.

There is a need to delete this section from the 2006 IRC as it pertains to Minnesota because it references an ASTM Standard E-283, which only tests fenestration products and curtain walls. This section of the code addresses conditioned attic assemblies. These two very different assemblies and have no relation to each other. Therefore, the ASTM Standard has no bearing on this section of the code at all. Also, the exception to # 2 and all of #3 of section 806.4 of the code, are for climate zones other than those we have in Minnesota. As a result, it is reasonable and necessary to clearly state that this section of the 2006 is not a part of Minnesota's residential code.

1309.0903 SECTION R903, WEATHER PROTECTION.

This new rule part amends 2006 IRC Section 903.2.2, Kick-out flashing/diverter, by specifying that kick-out flashing/diverters must be installed where the lower portion of a sloped roof stops within the plane of an intersecting wall cladding. The proposed rule is tied to the proposals on the same issue under R202, Definitions and 1309.0703 Section R703.8.²⁸ While Section R903.2.1 provides information on the various locations of flashing, it is not clear as to where kick-out flashing/diverters must be installed so that these vulnerable areas of the construction assembly may be protected. Because these intersecting areas create a void, if left unattended by kick-out flashing/diverter, large volumes of water washing down a sloped roof deck could actually be funnelled directly into a wall envelope. The proposed rule is therefore necessary to prevent such water intrusions.

1309.0905 SECTION R905, REQUIREMENTS FOR ROOF COVERINGS.

This new rule part amends 2006 IRC Section R905.2.1 by specifying that asphalt shingles must be fastened to solidly sheathed decks or 1" thick nominal wood boards. The proposed rule permits a method of construction that is already recognized by the Asphalt Roofing Manufacturers Association and most major shingle manufacturers. The proposed rule is also intended to provide for more uniformity of enforcement.

The amendment to the model code will reduce the cost of construction for re-roofing by

²⁸ For further discussion, see page 26.

allowing the use of the original wood sheathing boards without the implied need to re-sheath the entire roof deck with a layer of plywood or oriented strand board sheathing.

CONCLUSION

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

11/28/06
Date

M. Scott Brener
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Commissioner

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2/1/2005

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Exhibit A

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