

Minnesota Department of Labor and Industry

STATEMENT OF NEED AND REASONABLENESS

Proposed Amendment to Rules Governing the Adoption of the International Building Code, Minnesota Rules, chapter 1305; Revisor's ID Number R-04509

INTRODUCTION

The Commissioner ("Commissioner") of the Department of Labor and Industry ("Department") and certain local authorities enforce the Minnesota State Building Code, which consists of 22 chapters of the Minnesota Rules. One of those 22 chapters is chapter 1305, the Minnesota Building Code. *See* Minnesota Rules, part 1300.0050.

The Commissioner proposes to adopt amendments to the Minnesota Building Code, Minnesota Rules, Chapter 1305. The proposed rules will incorporate by reference the 2018 International Building Code ("IBC"), with amendments.

The International Code Council ("ICC") publishes the IBC. The ICC reviews and modifies the ICC Model Codes every three years to incorporate the most current construction code criteria to provide the construction industry with the most current code provisions for use throughout the nation. The IBC is the primary commercial, industrial and institutional code that provides minimum requirements to safeguard the public health, safety, and general welfare to occupants of new and existing buildings, facilities, and systems.¹

The current chapter 1305 adopts and amends the 2012 edition of the IBC. *See* Minnesota Rules, part 1305.0011, subp. 1. Accordingly, the Department currently administers and enforces the 2012 edition of the IBC with amendments as contained in Minnesota Rules, chapter 1305. Although the ICC published a 2015 edition of the IBC, the Department did not adopt the 2015 edition of the IBC due to legislation that requires the Department to review and adopt the model codes with amendments every six years, beginning with the 2018 edition of the model codes.²

Minnesota Statutes, section 326B.106, subdivision 1(a), requires the Department to consult with the Construction Codes Advisory Council ("CCAC") in adopting amendments to the Minnesota State Building Code. The Department has consulted with the CCAC in connection with this rulemaking. This consultation is discussed in detail on page 4 of this SONAR.

In consultation with the CCAC, the Department utilized a Chapter 1305 Technical Advisory Group ("Chapter 1305 TAG") to review the existing rule Chapter 1305 and the 2018 IBC to propose reasonable and necessary amendments to the existing rule and the model code. The Chapter 1305 TAG members were appointed by the CCAC to review and comment on the 2018 IBC and proposed changes to the Minnesota State Building Code. The Chapter 1305 TAG consisted of representatives from the Association of Minnesota Building Officials, Fire Marshals

¹ The administrative chapter of the State Building Code (chapter 1300) specifies which structures must comply with chapter 1305, and which structures must comply with the Minnesota Residential Code, chapter 1309. *See* Minn. R. 1300.0040, subp. 2 (2017).

² *See* Minn. Stat. § 326B.106, subd. 1(c) (2018).

Association of Minnesota, American Institute of Architects Minnesota, and Department personnel.³ The proposed amendments in this rulemaking incorporate changes to the 2018 IBC proposed by the Chapter 1305 TAG members.⁴

Because many of the requirements in Chapter 1305 need to coordinate with the requirements of the Minnesota State Fire Code, Chapter 7511, the Department also used a 1305 and 7511 Compatibility Technical Advisory Group (“Compatibility TAG”). The Compatibility TAG was also appointed by the CCAC, and consisted of representatives from the Association of Minnesota Building Officials, Fire Marshals Association of Minnesota, Department of Public Safety (“DPS”) Minnesota State Fire Marshal Division, American Institute of Architects Minnesota, and Department personnel.⁵ The Compatibility TAG coordinated proposed changes to Chapter 1305 and Chapter 7511. The proposed amendments in this rulemaking incorporate changes reviewed by the Compatibility TAG members to ensure that the provisions of proposed Chapter 1305 do not conflict with the provisions of proposed Chapter 7511.⁶

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 Amanda Spuckler at the Department of Labor and Industry, 443 Lafayette Road N., St. Paul, Minnesota 55155, phone: 651-284-5006, and email: dli.rules@state.mn.us.

STATUTORY AUTHORITY

Under Minnesota Statutes, chapter 326B, the Commissioner has authority to adopt, amend and repeal the State Building Code except for those portions of the code to which the Legislature has granted rulemaking authority to the Plumbing Board, Board of Electricity, or Board of High Pressure Piping:

Section 326B.02.

Subdivision 5. General rulemaking authority. The commissioner may, under the rulemaking provisions of chapter 14 and as otherwise provided by this chapter, 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.

Because the Legislature has not granted rulemaking authority to any of these boards in connection with the Minnesota Building Code, the Commissioner is responsible for all

³ A complete list of the Chapter 1305 TAG members is attached as Exhibit A.

⁴ Chapter 1305 TAG meetings occurred on the following dates in 2018: January 17, 22 and 31; February 7 and 27; and March 12 and 19. *See* Minutes of 1305 TAG meetings, available at <http://www.dli.mn.gov/about-department/boards-and-councils/commercial-building-code-technical-advisory-group-tag>.

⁵ A complete list of the Compatibility TAG members is attached as Exhibit B.

⁶ Compatibility TAG meetings occurred on the following dates in 2018: January 19, February 2, March 1, March 13 and March 20. *See* Minutes of Compatibility TAG meetings, available at <http://www.dli.mn.gov/about-department/boards-and-councils/fire-code-technical-advisory-group-tag>.

amendments to the Minnesota Building Code. *See* Minnesota Statutes, sections 326B.32, subd. 2, 326B.435, subd. 2, and 326B.925, subd. 2.

In Minnesota Statutes, sections 326B.101 and 326B.106, the Legislature has enacted additional requirements regarding the adoption or amendment of the State Building Code:

Section 326B.101. Policy and purpose. The 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 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.

Section 326B.106.

Subdivision 1. (a) Adoption of code. Subject to paragraphs (c) and (d) and sections 326B.101 to 326B.194, 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. 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. Except as otherwise provided in sections 326B.101 to 326B.194, the commissioner shall administer and enforce the provisions of those sections.

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

CONSULTATION WITH THE CONSTRUCTION CODES ADVISORY COUNCIL

Minnesota Statutes, section 326B.106, subd. 1(a), requires the Commissioner to consult with the CCAC in connection with the adoption of the state building code. Minnesota Statutes, section 326B.07, sets forth the requirements for membership in the CCAC. Exhibit C, attached, is a list of the current members of the CCAC. Minnesota Statutes, section 326B.07, subdivision

2, directs the CCAC to review code changes and provide recommendations to the Commissioner on proposed changes to the rule chapters that comprise the Minnesota State Building Code.

The Department consulted with the CCAC in connection with these proposed rules. A report detailing the TAG review of the ICC model codes was submitted to the CCAC. As previously discussed, the CCAC appointed the members of the TAGs, including the 1305 TAG and the Compatibility TAG. Upon completion of the review of the rules and 2018 model codes by the TAGs, a report was submitted to the CCAC detailing the TAGs' evaluation of the 2018 ICC model codes and recommended changes to the model codes and the current Minnesota Rules. The report included recommended changes to the IBC and chapter 1305. After review, the CCAC forwarded this report, with comments by the CCAC, to the Commissioner for consideration in proposing amendments to Chapter 1305.⁷

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 Department'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 persons who will likely be affected by the proposed rule include building officials, building contractors, architects, engineers, fire inspection personnel, building owners and managers, users of the facilities, and the general public.

The classes of persons who will bear the costs of the proposed rule include primarily building owners who must pay for the construction costs. Where businesses pay for the construction costs, the costs will ultimately be passed on to the consumers.

The proposed rule increases the costs of school construction, which increases the costs to school districts proposing new building projects. The cost of school buildings is ultimately passed on to the general public in the form of property taxes.

The proposed rule also includes new requirements for critical emergency operations centers (such as fire and police stations) to have storm shelters. Although this is something that fire and police chiefs need to be aware of, it is not expected to add any significant expense because of the way that critical emergency operations centers are constructed under the current code.

Correctional institutions may also be affected. The proposed rule clarifies that emergency lighting is required on both sides of a door with a controlled egress locking device (rather than one side). This may require installation of an extra emergency light in some circumstances.

⁷ The report detailing the TAG review of the ICC model codes with comments from the CCAC regarding the proposed changes to the model codes is available at <https://www.dli.mn.gov/sites/default/files/pdf/report062618.pdf>.

Persons who will benefit from the proposed rule include the general public.

(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

The probable costs to the agency of implementation and enforcement of the proposed rule include costs to purchase code books for agency staff. Code books cost approximately \$450 per person.

The probable costs to any other agency of implementation and enforcement include costs for code books for building officials and other entities involved with enforcement of the code, and any educational expenses necessary for training on the final rule. The anticipated cost of educational seminars is approximately \$170 per person.

There is no anticipated effect on state revenues as a result of the implementation and enforcement of the proposed rule.

(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 the proposed rule. The adoption of this code will provide more predictable uniform application and enforcement of construction standards, which will tend to lower costs by reducing the need for review by local and state boards or other entities responsible for code interpretation and review.

(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

Because the IBC serves as the base document for Minnesota Rules, Chapter 1305, the Minnesota Building Code, and it is currently the only primary commercial, industrial and institutional model building code that is generally accepted and in use in the United States, no alternative model code was 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 compliance for existing buildings, unless the buildings undergo certain modifications. The proposed rule will only apply to new construction or any addition, alteration, or repair to a building. It is difficult to quantify the actual compliance costs for general construction projects, but the Department has determined the proposed rule will increase the cost of construction for schools specifically.

The proposed rule will increase the cost of school construction for school districts by requiring many new schools of a certain size to have storm shelters and a voice/alarm communications system. These costs are discussed in detail below. These requirements will provide additional life and safety protections to students.

Section 423.4 of the 2018 IBC contains new requirements for storm shelters in Group E occupancies. A Group E occupancy is a building or part of a building used for educational purposes through the twelfth grade. Under section 423.4, new schools and new buildings on school sites would be required to have a storm shelter if the building will have 50 or more occupants and is located in county identified as at risk for tornadoes with high wind speeds (250 mph). In any county (regardless of tornado risk), a school with over a 100 occupants would be required to have a voice/alarm communications system to effectively provide students with verbal instructions in the event of emergencies, such as fire, tornado, or a lockdown event.

For new buildings, the storm shelter must be able to accommodate the entire occupancy of the building. For an additional building added to an existing Group E occupancy site, the storm shelter must have the capacity to accommodate all occupants of the additional building. The required capacity of the storm shelter may be reduced by the occupant capacity of any other existing storm shelters on the site.

The Department requested a cost estimate for the storm shelter for a school from a design firm. The IBC requires the storm shelter to be built to the specifications of the ICC 500 Standard on the Design and Construction of Storm Shelters. The ICC 500 requires five square feet for each occupant and toilet facilities to be provided. A minimum of two toilet facilities are required for a storm shelter with 50 to 500 occupants and an additional toilet facility is required for every 500 occupants. The design firm determined the cost per square foot for a storm shelter is approximately \$60 and each toilet facility costs approximately \$15,000. The anticipated cost to comply with the requirement for a school with 750 students and 50 staff is \$270,000.

Section 423.3 of the 2018 IBC also contains new requirements for critical emergency operations centers (such as fire and police stations) to have storm shelters that comply with ICC 500. Under the current code, these centers must already be built to withstand wind speeds of 200 mph. The new requirement to withstand wind speeds of 250 mph is not a significant additional expense. The size requirement of a storm shelter is five square feet per person. If a basement is constructed as part of the facility and the first floor is concrete, as is likely under the current rule for larger critical emergency operations centers, then the basement will meet the new requirement for a storm shelter. In smaller cities with ten or fewer full-time employees, the storm shelter need only be a maximum of 50 square feet. That shelter capacity is accommodated in a storage room or restroom where the only additional cost would be the cost of providing additional reinforcement in a reinforced ceiling structure. A typical accessible toilet room (interior room) in a facility with 10 or fewer occupants would be 7 feet x 8 feet or 56 square feet. The cost of a reinforced concrete ceiling is \$16 per square foot or \$900. The same ceiling in gypsum board on steel framing (not reinforced) is \$3.35 per square foot or \$190. The increase in cost for the typical reinforced ceiling would therefore be \$710. The Department proposes modifying sections 423.3 and 423.4 of the 2018 IBC to clarify the counties where storm shelters are required for new critical emergency operations centers and Group E occupancy buildings or additions to an existing Group E site. No additional modifications are proposed. The requirements of sections 423.3 and 423.4 of the 2018 IBC are necessary to protect building occupants from hazards to life and safety.

The proposed amendment to part 1305.0907, subpart 13, requires new Group E occupancies, with more than 100 occupants, to be equipped with a visible and voice/alarm

communications system, which is more expensive than a general fire alarm system. Voice/alarm communications systems allow detailed verbal instructions to be relayed to building occupants during any type of emergency such as fire, lockdown, and tornado.

A voice/alarm communication system is anticipated to cost 20 percent more than a general fire alarm system. General fire alarm system installation for new school construction is estimated to be \$0.75/square foot. The average size of a school building in Minnesota is approximately 100,000 square feet. A fire alarm system installed in a new 100,000 square foot school building would cost approximately \$75,000. Including a voice/alarm communications system would increase the cost by approximately 20 percent, resulting in an additional cost of \$15,000. Accordingly, the cost of both the \$270,000 storm shelter and the \$15,000 voice/alarm communications system would be a total of \$285,000.

The proposed rule increases costs for school districts by requiring storm shelters and voice/alarm communications systems. Storm shelters and voice/alarm communications systems are necessary to improve the life and safety protections at schools, and therefore justify the cost increase. Storm shelters provide necessary protection for students in areas identified as at risk for tornadoes with dangerous wind speeds. Voice/alarm communications systems provide necessary life safety benefits by providing verbal instruction to students in the event of any type of emergency.

For the construction of buildings that are not intended for educational purposes, it is difficult to quantify actual costs of compliance; however, the Department anticipates that the global costs associated with this proposed rule will be minimal from the rule it is replacing. Some specific requirements of this rule may be more restrictive and increase costs to improve the life safety of occupants. Other specific requirements may be less restrictive and tend to lower costs by permitting additional design options that are more cost-effective than those permitted by current chapter 1305. To avoid unnecessary design expenses, the proposed amendments include Minnesota State Fire Code provisions designers may be unaware of but need to be informed of in order to avoid costly mistakes early in a project.

The 2018 IBC includes new requirements for hard-wired carbon monoxide detectors outside sleeping units. Minnesota Statutes section 299F.51 already requires carbon monoxide detectors in single and multi-family residences. The 2018 IBC also requires carbon monoxide detectors in various institutional buildings with sleeping units, such as day cares, dormitories, and buildings providing custodial care housing. The installation of carbon monoxide detectors will add minimal cost. Because smoke detectors are already required, common practice is to install a combination smoke and carbon monoxide detector. The added cost is approximately \$25 per unit, with no additional installation cost.

The proposed rule will require fire alarms in some additional locations. For example, under proposed rule 1305.0907, subpart 25, Group R-1 occupancies (transient living facilities) will need to have fire alarms in soiled linen rooms, kitchens, custodial closets and lounges. Each additional fire alarm would cost approximately \$100.

There may be costs associated with reroofing requirements under proposed rule 1305.1511. Specifically, if the roof does not have the slope required under the new rule, then

there must be another way to drain the roof or demonstrate that it is sufficient to support the load. Most buildings are already designed so that the roofs allow water to spill over the sides, have perimeter scuppers or have secondary roof drains. In the rare event that this is not part of the original design, the solution is often as simple as adding a scupper (\$250 installed) to the sidewall of a roof. Very large buildings may require a secondary drain. Adding a second roof drain costs approximately \$350 to \$400 and then the piping costs depend upon the distance to a discharge location.

One other possible cost relates to means of egress for some daycare centers. Under both the current and proposed rule, in order to be classified as an E occupancy, daycare must be provided on the ground level and have a door directly to the exterior. The assumption is that there is interior circulation between rooms, and therefore two means of egress from any of these rooms, but that is not specifically required. Therefore, the current code currently allows up to 49 babies and toddlers (under 2 ½ years old) to be in a single room with only one exit to the exterior and no other way out. If that one exit is compromised, they are all in peril. The proposed rule would correct this deficiency. Under proposed rule 1305.1006, subpart 3, if there are more than 10 babies and toddlers in a single room, then there need to be two means of egress. One will be the required exterior door for the E occupancy change, and the other will typically be an interior connecting door to the interior means of egress system. The cost of an additional interior door is approximately \$500.

The proposed rule clarifies that emergency lighting is required on both sides of a door with a controlled egress locking device (rather than one side). See proposed rule 1305.1010, subp. 6a, item 7. Under the current rule, there are some situations where one side of the door has emergency lighting and the other side is only required to have minimal means of egress lighting (not necessarily emergency powered lighting). The cost of adding another emergency light is approximately \$300.

There would be small costs to a municipal building department associated with a need for building officials to implement and update procedures, such as training, to purchase new code books, or to revise certain documents, such as building permits. As stated previously, code books cost approximately \$450 per person. The anticipated cost of educational seminars is approximately \$170 per person. With respect to updating procedures and documents, most of the procedures and documents are currently in place, so the changes would likely be revisions to current practices. This cost should be negligible.

(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 ICC reviews and modifies the ICC Model Codes every three years to incorporate the most current construction criteria. The 2012 edition of the IBC, with amendments, is currently applied and enforced in Minnesota. The family of ICC Codes is designed to work together as they reference other ICC codes within the body of each separate code book. The Department intends to adopt several of the 2018 ICC Codes at the same time. Therefore, if this proposed rule is not adopted, it could create confusion in other rule chapters that adopt and incorporate the 2018 ICC Codes. This is because the other 2018 ICC Codes reference sections in the 2018 IBC,

and those references would be wrong in Minnesota where the section number or content changed from the 2012 IBC (currently applied in Minnesota) to the 2018 IBC.

Another consequence of not adopting the proposed rule would be the use of outdated materials and methods. Because current chapter 1305 is based on the 2012 edition of the IBC, the materials and methods are all from 2012 or earlier. Such older methods may prove to be less efficient, and outdated materials may become more difficult to obtain. Manufacturers do not have a financial incentive to maintain an inventory of outdated materials. As a result, failure to update chapter 1305 by not adopting the proposed rule would have a negative impact on administration, safety, application, and enforcement of Minnesota's building code provisions.

The costs associated with not adopting the proposed rule will likely be borne by building owners, to whom the costs of purchasing outdated equipment and materials would be passed. The consequences of not adopting the proposed rule will also be borne by industry personnel responsible for administering and enforcing the code because the various 2018 ICC codes adopted by the Department would not provide accurate references to sections in the 2012 IBC, which is currently adopted.

(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 two types of federal regulations that affect construction regulated by the IBC. First, there are federal accessibility requirements in the Americans with Disabilities Act. Those requirements are addressed in Minnesota Rules, chapter 1341, the Minnesota Accessibility Code. Chapter 1305 and the proposed amendments refer readers to chapter 1341 for specific accessibility requirements.

The only other federal regulations that address construction regulated by the IBC are regulations that apply to nursing homes and other health care facilities regulated and licensed by the Minnesota Department of Health (“MDH”) or that participate in Title XVIII (Medicare) or Title XIX (Medicaid) of the Social Security Act. The proposed rule includes an alternative method of compliance and an exception for health care facilities regulated and licensed by MDH or participating in Medicare or Medicaid where federal regulations conflict with 2018 IBC requirements.

The proposed rule permits sprinkler protection in elevator shafts, elevator pits, and elevator machine rooms in health care facilities regulated and licensed by MDH or participating in Medicare or Medicaid. Generally, elevator shafts, elevator pits, and elevator machine rooms are not equipped with automatic sprinkler systems to prevent water from damaging the elevator and its equipment. However, federal regulations for participation in Medicare or Medicaid require sprinkler protection for the entire facility. It is reasonable to permit health care facilities to comply with more restrictive requirements to ensure life-safety of building occupants.

(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.

The Minnesota State Building Code is a single set of coordinated building construction regulations that apply throughout the state of Minnesota. There are no other building codes that can be used or enforced in this state. When the Department adopts the individual rules that make up the 22 rule chapters of the Minnesota State Building Code, the Department works with other state agencies that may also regulate certain buildings to ensure that requirements in the Minnesota State Building Code are not cumulative. For example, Department staff consulted with technical experts from MDH and DHS to ensure that the proposed rule would coordinate with all building-related requirements enforced by those agencies.

The Department also develops the Minnesota Accessibility Code so that it incorporates the federal accessibility requirements to the extent they are applicable. When certain accessibility features are not required in Minnesota, our accessibility experts inform code users that although something is not required by the Minnesota Code, it may still be required federally and must be complied with.

The adoption cycle for most of the Minnesota State Building Code (including chapter 1305) occurs every six years⁸ so the codes are current and reflect the most recent changes that occur federally and with other state agencies. For example, the federal Department of Energy implements federal requirements for energy in construction by working through the model code process; by basing Minnesota's rules on the same model codes, the cumulative effect is thereby eliminated. Department staff also monitor any regulatory changes that occur federally and on a state level. The Department also has staff that monitor code changes being proposed to the model building codes at the national level to ensure that the Minnesota State Building Code will not conflict with other building code regulations.

In the Request for Comments, the Department requested information on any cumulative effect of the proposed rule with federal or state regulations:

Additionally, the agency requests any information pertaining to the cumulative effect of this rule with other federal and state regulations related to the specific purpose of the rule. Cumulative 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.⁹

The Department did not receive any information in response to this request.

PERFORMANCE-BASED RULES

Minnesota Statutes, section 326B.106, subdivision 1(a), 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

⁸ See Minn. Stat. § 326B.106, subd. 1(c) (2018). Note that this does not apply to chapters in the state building code adopted by agencies other than the Department (such as chapter 4714, adopted by the Plumbing Board).

⁹ 43 S.R. 270 (Aug. 27, 2018).

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 2018 IBC establishes minimum regulations for building systems using prescriptive and performance-based provisions. The proposed rules that contain amendments to the 2018 IBC incorporate the philosophy required by Minnesota Statutes, section 326B.106, subdivision 1.

ADDITIONAL NOTICE

This Additional Notice Plan was reviewed by the Office of Administrative Hearings and approved in an Order dated July 23, 2019, by Administrative Law Judge Ann C. O'Reilly.

Our Notice Plan includes giving notice required by statute. We will mail or email the Dual Notice, which will contain an easily readable and understandable description of the nature and effect of the proposed rule, to everyone who has registered to be on the Department's building code rulemaking mailing list under Minnesota Statutes, section 14.14, subdivision 1a. We will also give notice to the Legislature per Minnesota Statutes, section 14.116.

Our Notice Plan also includes giving additional notice to associations and trade groups not required by statute. We will mail the Dual Notice to the following interested industry groups or associations. Those groups or associations include:

- a. All certified building officials involved in code administration. This list includes all municipal building officials responsible for administration of the State Building Code.
- b. Association of Minnesota Building Officials
- c. Builders Association of Minnesota
- d. Builders Association of the Twin Cities-Housing First
- e. Minnesota Housing Finance Agency
- f. Minnesota Multi-Housing Association
- g. Building Owners and Managers Association
- h. Minnesota State Fire Marshal Division
- i. Minnesota State Fire Chiefs Association
- j. Minnesota Chiefs of Police Association
- k. Minnesota Police and Peace Officers Association
- l. League of Minnesota Cities
- m. Association of Minnesota Counties
- n. American Institute of Architects - Minnesota
- o. Minnesota Manufactured Home Association
- p. Minnesota Board of Electricity
- q. Minnesota Plumbing Board
- r. Minnesota Society of Professional Engineers
- s. Minnesota Association of School Administrators
- t. Minnesota Association of School Maintenance Supervisors
- u. Minnesota Department of Education

v. Minnesota Department of Corrections

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

CONSULTATION WITH MMB ON LOCAL GOVERNMENT IMPACT

As required by Minnesota Statutes, section 14.131, the Department consulted with the Commissioner of Minnesota Management and Budget (MMB) concerning the fiscal impact and benefits the proposed rules may have on units of local government. This was done on May 16, 2019, by providing MMB with copies of the Governor's Office Proposed Rule and SONAR Form, the proposed rules, and the near-final SONAR. The Department received a memorandum dated July 15, 2019, from MMB Executive Budget Officer Laurena Schlottach-Ratcliff which stated:

“The following proposed changes may have a fiscal impact to local government and/or school districts that are building new buildings:

- State and local government costs for updated code books and training. Code books are about \$450 for each representative and about \$170 for each representative for seminars.
- Visible and voice/alarm communication system, rather than a general fire alarm system, requirement for Group E occupancies with more than 100 occupants. These systems cost about 20% more than a general fire alarm system.
- Addition of carbon monoxide detectors in various institutional buildings with sleeping units. The estimated cost per unit is \$25.
- Requires storm shelters for schools under a certain set of conditions. The cost for this is about \$60 per sq. ft. and \$15,000 per toilet facility within the shelter.
- Requires storm shelters for new critical emergency operations centers to have reinforced ceiling structures with a cost impact of about \$710.
- Requires fire alarms to be installed in new locations within buildings. Each additional unit is about \$100.
- Requires that existing roofs that may trap and pond water must provide another way to drain the roof or demonstrate the structure can support the load. The costs for this rule can be attributed to adding a scupper (about \$250) or adding a second drain (\$350-\$400) and piping (costs vary).
- Requires emergency lighting on either side of an egress door. Adding a light is about \$300.
- Requires two means of egress for I-4 occupancies. The cost of adding an interior door is about \$500.”

The Department will submit a copy of its correspondence with MMB and the June 15, 2019, response it received from that agency to the Administrative Law Judge at the hearing or with the documents submitted for 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 require a local government to adopt or amend any ordinance or other regulation in order to comply with these rules. Pursuant to Minnesota Statutes, section 14.128, the Department has determined that a local government will not be required to adopt or amend an ordinance or other regulation to comply with these 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 wishes that its ordinances accurately reflect legal requirements in a situation in which the State Building Code has superseded the ordinances, then the city may want to amend or update its ordinances.

In the Request for Comments, the Department asked for information from any local unit of government that believed it would need to amend an ordinance or regulation: “If you believe that the possible rule amendments would require your local unit of government to adopt or amend an ordinance or other local regulation to comply with the proposed rules, the Department requests that you provide information about the ordinance or regulation to the Agency Contact person listed below.”¹⁰ The Department has not received any information in response to this request.

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. 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. As previously discussed, the costs of compliance should be minimal except for the costs to school districts contemplating the construction of new schools or additional buildings. (See pages 5-8 of this SONAR.) A school district is not a small city or small business. A school district is a legal entity separate from any city.

In the Request for Comments, the Department requested information on the issue of cost of compliance to a small business or city:

The Department is also interested in determining whether the cost of complying with the rule in the first year after the rule takes effect will cost or exceed \$25,000 for any small city or small business under *Minnesota Statutes*, section 14.127,

¹⁰ 43 S.R. 270 (Aug. 27, 2018).

subdivision 1. A small city is a statutory or home rule charter city that has less than ten full-time employees and a small business means a business that has less than 50 full-time employees.¹¹

The Department has not received any response to this request. The Department has no reason to believe that the cost of compliance to any small business or small city will exceed \$25,000 in the first year after the rules are effective.

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. Division staff from the Construction Codes and Licensing Division, if necessary;
2. Division staff from the Minnesota State Fire Marshal Division, if necessary; and
3. Other members of the Technical Advisory Groups, if necessary.

RULE-BY-RULE ANALYSIS

GENERAL.

References to IBC Editions and Minnesota Rule Parts. When referencing the IBC throughout the proposed rules, the year "2012" is deleted and replaced with the year "2018." The Department is proposing to adopt the 2018 edition of the IBC, replacing the 2012 edition, with amendments. References to "IBC" are added before references to specific IBC chapters and sections to clarify that the specific chapter or section that is being referenced in the proposed rule is a section of the IBC.

Definitions. Throughout the proposed rules and in this SONAR, specific terms are used to explain requirements contained in certain rule parts. These terms are defined in detail within Chapter 2 of the 2018 IBC or within Part 1305.0202 of the proposed rules, and are described in this "GENERAL" section so that referring to the IBC is not necessary to understand these terms.

Occupancy Groups. Throughout the proposed rules and in this SONAR, various "occupancy groups" are frequently mentioned when describing the application of specific requirements under the 2018 IBC and its proposed amendments to structures occupied and used by various groups of people. While not separately defined in Chapter 2 of the IBC, these occupancy groupings are described in detail in Sections 301 through 312 of the 2018 IBC. A brief summary of all occupancy groupings follows to assist the reader in more fully understanding the scope and application of the 2018 IBC to specific types of building occupancies.

Assembly Group A occupancies (A-1, A-2, A-3, A-4, and A-5).

Generally, Group A occupancies are places where people assemble in small or large groups. Examples of Group A occupancies would include indoor symphony or concert halls, night clubs, restaurants, amusement arcades, places of worship, bowling alleys,

¹¹ 43 S.R. 270 (Aug. 27, 2018).

gymnasiums, museums, outdoor amusement park structures, outdoor grandstands, and outdoor stadiums. Group A occupancies are more fully described in Section 303 of the IBC.

Business Group B occupancies.

Group B occupancies are structures or buildings, or portions of them, that provide general business services for people, including the use for office, professional, or service-type transactions, and the storage of records and accounts. Group B occupancies are more fully described in Section 304 of the IBC.

Educational Group E occupancies.

Group E occupancies are facilities or buildings that provide educational services for people, including the use of a building or structure, or a portion of it, by six or more persons at any one time for educational purposes through the twelfth grade. Group E occupancies are more fully described in Section 305 of the IBC.

Factory Group F occupancies (F-1 and F-2).

Group F occupancies are factory industrial buildings or structures used for assembly, disassembly, fabrication, finishing, manufacturing, packaging, repair or processing operations that are not otherwise classified as a Group H hazardous or Group S storage occupancy. Group F occupancies are more fully described in Section 306 of the IBC.

High-Hazard Group H occupancies (H-1, H-2, H-3, H-4, and H-5).

Group H occupancies are generally buildings or structures used for the manufacturing, processing, generation or storage of materials in quantities that constitute a high physical or health hazard as established by various IBC provisions. Group H occupancies are more fully described in Section 307 of the IBC.

Institutional Group I occupancies (I-1, I-2, I-3, and I-4).

Generally, Group I occupancies are facilities or buildings that provide care services for people, provide for long-term detention of people, or serve as a long-term residence for people who receive custodial care from persons other than parents or guardians. Examples of Group I occupancies would include assisted living facilities, group homes, rehabilitation facilities, hospitals, nursing homes, detoxification facilities, prisons, reformatories, and detention centers. Group I occupancies are more fully described in Section 308 of the IBC and in Minnesota Rules, part 1305.0308.

Mercantile Group M occupancies.

Group M occupancies are buildings or structures, or portions of them, accessible to the public and used for the display and sale of merchandise, including the stocking of goods, wares or merchandise incidental to such purposes. Group M occupancies are more fully described in Section 309 of the IBC.

Residential Group R occupancies (R-1, R-2, R-3 and R-4).

Group R occupancies are typically places that people board for short or long periods of time, family dwellings, adult and child care facilities, congregate living facilities, and residential care or assisted living facilities. Examples of Group R occupancies include boarding houses, hotels, motels, apartment houses, fraternities, sororities, monasteries, one and two family dwellings, adult care facilities, smaller child day care facilities, and residential care/assisted living facilities. Group R occupancies are more fully described in Section 310 of the IBC and Minnesota Rules, part 1305.0310.

Storage Group S occupancies (S-1 and S-2).

Group S occupancies are buildings or structures, or portions of them, used for storage that are not classified as high-hazardous occupancies under Section 307 of the IBC. Group S occupancies are more fully described in Section 311 of the International Building Code.

Utility and Miscellaneous Group U occupancies.

Group U occupancies are buildings and structures of an accessory character and miscellaneous structural use not classified in any other specific occupancy group by the IBC. Group U occupancies are more fully described in Section 312 of the IBC.

1305.0011 ADOPTION OF THE INTERNATIONAL BUILDING CODE BY REFERENCE AND ADMINISTRATIVE AUTHORITY.

Subpart 1. General. This subpart is modified to incorporate by reference the 2018 IBC edition instead of the 2012 edition. The latest edition is the 2018 edition, which includes the most current construction criteria. This modification is necessary to properly incorporate by reference the 2018 edition of the IBC. This modification is reasonable because it incorporates the most current, nationally recognized minimum requirements to safeguard the public health, safety, and general welfare to occupants of new and existing buildings, facilities, and systems. This modification is also consistent with the following requirement in Minnesota Statutes, section 326B.106, subd. 1(a): “The code must conform insofar as practicable to model building codes generally accepted and in use throughout the United States”

Subp. 1a. Deleted appendices. This proposed subpart deletes the IBC appendices. This is needed for clarity and consistency with current practice. Chapter 1305 does not refer to any of the appendices to the IBC, and the Department does not enforce anything in the appendices to the IBC. It is therefore appropriate to delete the appendices.

Subp. 2. Mandatory chapters. The first sentence of this subpart is amended by referring to IBC “chapters 2 through 35” instead of “chapters 2 through 33 and 35.” In the 2012 IBC, chapter 34 concerned “Existing Structures.” Because Minnesota has a separate rule chapter on existing commercial structures (chapter 1311), the current chapter 1305 did not adopt chapter 34 of the 2012 IBC. In the 2018 IBC, the ICC removed the chapter on “Existing Structures.” Instead, chapter 34 of the 2018 IBC says “Reserved.” Therefore, adopting chapter 34 of the 2018 IBC does not have any substantive effect on the Minnesota Building Code.

This subpart is also amended by eliminating references to IBC chapter 30 and Minnesota Rules, chapter 1307, the Minnesota Elevator Code. It is necessary to make these changes because, as part of a different rulemaking proceeding, the Department is proposing to repeal Minnesota Rule 1307.0095, which amends chapter 30 of the 2012 IBC governing elevators and conveying systems. The 2018 edition of the IBC, including chapter 30, is proposed to be incorporated by reference into chapter 1305 instead of chapter 1307, with proposed amendments to IBC chapter 30 in the proposed amendments to chapter 1305. The language of this subpart is amended to include some minor grammatical edits to provide clarity due to the elimination of references to IBC chapter 30 and Minnesota Rules, chapter 1307.

Subp. 3. Replacement chapters. Repeal. This subpart is repealed. Item A states that IBC chapter 1 is replaced with Minnesota Rules chapter 1300, the Minnesota Administration Code. This is already in section 1305.0101; item A is therefore redundant. Item B states that IBC

chapter 34 is replaced with Minnesota Rules, chapter 1311, Minnesota Building Conservation Code. Chapter 34 is no longer in the 2018 IBC. Therefore, item B needs to be removed.

1305.0021 REFERENCES TO OTHER INTERNATIONAL CODE COUNCIL CODES

Subp. 2. Building code. Because the terms IBC and International Building Code are both used in the code and in this chapter, “International Building Code” is added to this definition for ease of reference.

Subp. 3. Residential code. The amendment defines IRC as the abbreviation for International Residential Code. This is needed and reasonable because the 2018 IBC refers to the IRC.

Subp. 6. Mechanical code. This amendment adds “IMC” as an alternate reference for “International Mechanical Code.” This amendment is needed and reasonable because chapter 1305 refers to the IMC.

Subp. 11. Fire code. The amendment defines IFC as the abbreviation for International Fire Code. This is needed and reasonable because chapter 1305 and the 2018 IBC refer to the IFC. This amendment also updates an old statutory citation. The fire code is now adopted and amended pursuant to section 326B.02. It is necessary and reasonable to update this statutory citation.

Subp. 12. International Existing Building Code. This amendment adds “IEBC” as an alternate reference for “International Existing Building Code.” This amendment is needed and reasonable because chapter 1305 refers to the IEBC.

1305.0201 SECTION 201, GENERAL.

This amendment is needed and reasonable to update the web address for the Merriam-Webster Collegiate Dictionary. Also, the word “chapter” is changed to “code.” When used in the IBC, the word “chapter” refers to the IBC chapter. To avoid confusion, it is necessary to change the word “chapter” to “code” in this section. This is not a substantive change.

1305.0202 SECTION 202, DEFINITIONS.

Subpart 1. Amended definitions. Several existing definitions in this rule part or in the 2018 IBC are amended.

Alternating tread device. The definition of alternating tread device is amended to add the phrase “‘Alternating tread device’ means” at the beginning. This is for consistency with the format of the other definitions. The definition is also amended to provide the correct reference to the rule part describing requirements for ships ladders. The current rule references part 1305.1209. However, that in turn references the Minnesota Mechanical Code. The reference in the proposed rule has therefore been changed to the Minnesota Mechanical Code for ease of reference.

Ambulatory care facility. When used in the IBC, the word “chapter” refers to the IBC chapter. To avoid confusion, it is necessary to change the word “chapter” to “code” in this definition. This is not a substantive change.

Historic Building. The definition of historic buildings located in the 2018 IBC is modified to the term “historic building” for clarity. The amended definition refers to the definition of “historical building” located in Minnesota Rules, part 1300.0070. Minnesota Rules, chapter 1300, contains the administrative provisions of the Minnesota State Building Code. This definition allows for broader interpretation of what is a historic building than the definition located in the 2018 IBC. The definition of historical building located in rule 1300.0070 includes buildings that are listed on the National or State Register of Historic Places or are eligible to be listed in the opinion of the State Historic Preservation Officer or Keeper of the National Register of Historic Places. It is needed and reasonable for the definitions of “historic building” and “historical building” to be consistent in all rules chapters that comprise the Minnesota State Building Code.

Standpipe System, Classes of. This definition of classes of standpipe system located in the 2018 IBC is modified to include systems with 1½ inch hose connections as Class I standpipe systems and to delete the definition of Class III standpipe systems. Class III standpipes are intended for use primarily by building occupants trained in firefighting techniques. These systems are seldom used and are costly to install. Where the 2018 IBC requires Class III standpipe systems, the other proposed amendments to this chapter either eliminate the requirements for Class III standpipe systems or allow for the use Class I standpipe systems in their place. Class III standpipe systems are equipped to accommodate both 2½ inch fire hoses and 1½ inch fire hoses. It is therefore reasonable to amend the definition of Class I standpipe systems to include 1½ inch hose connections because of the proposed amendments allowing the use of Class I standpipe systems in place of Class III standpipe systems.

Subp. 2. Added definitions. Definitions that are not included in chapter 2 of the 2018 IBC are included in this subpart.

Adult day care center or adult day services center. This definition is added because, although the model code uses the term “day care center” for adults, it does not include any definition of an adult day care center. Moreover, the definition is needed because the term “adult day services center” is used in the proposed rule, because this term is preferred by the Minnesota Department of Human Services (“DHS”). Adding this definition will clarify that an “adult day services center” and a “day care center for adults” mean the same thing.

The substance of the proposed definition is consistent with both DHS rules and the fire code. The current fire code definition is in part 7511.0202, which states in pertinent part:

ADULT DAY CARE CENTER. A facility, licensed by the Department of Human Services under Minnesota Rules, parts [9555.9600](#) to [9555.9730](#), that provides a program of adult day care services to functionally impaired adults for periods of less than 24 hours per day in a setting other than a participant's home or the residence of the facility's operator.

Simultaneously with this rulemaking, the department is proposing to amend this provision of the fire code to include the phrase “adult day services center.” The substance of both the proposed building code definition and the current fire code definition is from the following definition in a DHS rule, Minnesota Rule part 9555.9600, subp. 4:

Subp. 4. **Adult day care center, adult day services center, or center.** "Adult day care center," "adult day services center," or "center" means a facility that provides adult day care or adult day services to functionally impaired adults on a regular basis for periods of less than 24 hours a day in a setting other than a participant's home or the residence of the facility operator.

It is reasonable for the definitions to be consistent between the state building code, the state fire code, and the rules of the licensing agency (DHS).

Code. This definition is amended to delete the phrase “For purposes of this chapter.” This phrase is unnecessary and could cause confusion because the word “chapter” is used in the IBC to mean the IBC chapter.

General evacuation signal. A general evacuation signal is a signal that is to be provided to building occupants in the event of emergency or fire. Section 907 of the 2018 IBC uses the phrase “general evacuation signal,” but that phrase is not defined in section 907 or in Chapter 2 of the 2018 IBC. A definition is therefore needed. “General evacuation signal” is defined as the fire alarm system annunciation at the fire control unit, which begins occupant notification upon activation. This definition is reasonable because it is consistent with the requirements for occupant notification systems located in section 907.5 of the 2018 IBC.

1305.0302 CARE FACILITY CLASSIFICATIONS.

IBC Table 302.2, Care facilities. This table provides classifications for the various types of licensed, registered, and unlicensed care facilities for application and use of the Minnesota Building Code and is being revised for consistency with changes to the 2018 IBC and the licensing provisions of MDH and DHS. The current table was added during the adoption of the 2012 IBC to incorporate the occupancy classification portion of a publication entitled “*Quick Reference Guide to Care Facilities in Minnesota*” that was developed by the Department in cooperation with appropriate staff from, MDH, DHS, and the DPS State Fire Marshal Division. This was necessary because MDH, DHS, or both agencies license many of the care facilities identified in this table. Building officials have struggled in the past with correctly classifying these facilities because the national model codes are not consistent with MDH or DHS licensing provisions. Proper occupancy classifications are based on the number of care recipients permitted by the classification, the capabilities of those care recipients to respond during emergencies, and permitted uses within a dwelling unit. As licensed care facilities, each may or may not be subject to additional construction requirements as determined by the appropriate licensing agency, which can be overlooked if code officials improperly classify the use of the building. Without clear guidance, building officials may place these facilities in a more restrictive occupancy classification than is intended by statute or rule.

The 2015 IBC contains Condition 1 and Condition 2 sub-categories for occupancy

Groups I-1, I-2 and R-4. *See* IBC sections 308.2 and 310.5. These conditions were not in the 2012 IBC.¹² Both Condition 1 and Condition 2 for occupancy Groups I-1 and R-4 include buildings where all persons are receiving custodial care. Condition 1 for Group I-1 and R-4 occupancies includes buildings whose occupants are capable of appropriately responding to an emergency situation and self-preservation without assistance. On the other hand, no one in an I-2 (hospital) occupancy is assumed to have self-preservation capability. Condition 1 for an I-2 occupancy means there are no patients in emergency care, trauma, surgery, obstetrics, or inpatient stabilization for psychiatric or detoxification treatment. Condition 2 for an I-2 occupancy includes some or all of these care functions. Condition 2 for Group I-1 and R-4 occupancies indicates a building where some occupants may require verbal or physical assistance to appropriately respond to emergency conditions and evacuate the building. The table is revised to reflect the addition of the Condition 1 and Condition 2 sub-categories to occupancy Groups I-1, I-2 and R-4.

The column heading entitled “Number or Type of Residents” is changed to “Number or Type of Care Recipients” because several of the facilities listed in the column are not specific to residents but rather those receiving care in the programs. For the same reason and for consistency, the terms “occupants” and “impaired adults” appearing in that column have been changed to “care recipients.”

The table is also amended to add “without assistance” following “self-preservation” in several rows, in the “Number or Type of Care Recipients” column. This language is added because the 2018 IBC describes buildings where the occupants are capable of self-preservation without assistance, capable of self-preservation with verbal or physical assistance, or are incapable of self-preservation. Without the addition of “without assistance,” building officials may be confused as to whether the facility occupants are expected to be capable of self-preservation without assistance or are capable of self-preservation with verbal or physical help. Similarly, the phrases “all of whom are capable of self-preservation without assistance” and “of which some may require limited assistance for self-preservation” are added for clarification.

The description for Family Child Care Home under Number or Type of Care Recipients is changed by adding footnote number 1. The term “school age” is defined in Minnesota Statutes section 245A.02, subd. 16 (2018). Footnote 1 clarifies the table by referring to the statutory definition.

The age of the children has been changed in the column “Number or Type of Care Recipients” in one of the rows labeled “Child Care (Day Care), Child Care Center < 24 hours per day.” Specifically, “< 2.5 years of age” has been changed to “≤2.5 years of age.” That’s because, in the next row, the age of the children is listed as “>2.5 years of age.” Therefore, the earlier row must have been intended to cover children who are equal to 2.5 years of age.

The phrase “and not classified as E” has been added to the column “Number or Type of Residents” in one of the rows labeled “Child Care (Day Care), Child Care Center < 24 hours per day.” This is needed to distinguish this row from the earlier row labeled “Child Care (Day

¹² Because these conditions were added as part of the 2015 IBC, they were not incorporated by reference in the current rule.

Center), Child Care Center < 24 hours per day,” which is classified as E.

The parenthetical “Day Services” is added after the general category “Adult Day Care,” and the term “Adult Day Care Center” is changed to “Adult Day Services Center.” The term “adult day services center” is preferred terminology used DHS. However, the model code sometimes uses the term “adult day care center,” so the table has been modified to include both “adult day care” and “adult day services.”

The rows in the table for Day Services Facilities are deleted because the category is the same as Adult Day Care (Day Services); the information from the Day Services Facilities rows has been moved to the Adult Day Care (Day Services) rows.

Family Adult Day Services has an added descriptor (“located in care giver’s primary residence”) because that is a qualifying definition of this type of use. The descriptor is included in the table in order to reduce confusion because the number of qualifying care recipients exceeds the lowest threshold listed for an Adult Day Services Center, which is not required to be located in a care provider’s home.

Also in the Family Adult Day Services row, “impaired adults” is changed to “care recipients age 13 and older.” There is no definition of “impaired,” and the phrase “care recipients” accurately describes the individuals receiving care without the need to define the reason for the care. Also, the term “adults” is inaccurate, because an adult is defined by statute as a person age 18 or older.¹³ Some of the care recipients may be over 12 and under age 18 years of age. The phrase “age 13 and older” is added to clarify that care recipients over the age of 12 are classified the same as adults.

Within Adult Day Services, the term “occupants” is changed to “care recipients” since occupants can technically also include support staff, and the phrase “age 13 and older” is added to clarify that care recipients over the age of 12 are classified the same as adults.

In the second row of Adult Day Care (Day Services), the phrase “unless meet criteria for E below” has been added to clarify that, if all of the individuals are capable of preservation without assistance, then the occupancy classification would be E under proposed rule 1305.0308, subp. 4, section 308.5.1.1. This is also the reason that the next row (with occupancy classification E) is added. Similarly, in the fourth row of Adult Day Care (Day Services), the phrase “E if compliant with all of 308.5.1.2” is added. This clarifies that, under certain circumstances, Adult Day Care (Day Services) can be classified as E even if it serves both persons capable and not capable of self-preservation without assistance. Because the list of circumstances is long, the table refers to the proposed rule rather than spelling out all the circumstances.

A new row is added to include “Day Training and Habilitation” facilities, which provide vocational training opportunities for persons requiring physical or cognitive support to facilitate the work environment. Staff to program participant ratios are typically 1:6 and are increased to 1:4 when program participants require significant assistance and/or require assistance with self-preservation in the event of an emergency. Because of the high support staff ratios, these

¹³ See Minn. Stat. §645.45(3) (2018).

facilities are classified as per their primary function which is typically B, business, or F-1 manufacturing, but can be any of the occupancy groups recognized in the model code.

The type of facility labeled “Housing with Services Facility” has been changed to “Housing with Services Establishment” for consistency with the terminology in the second column. The number of adult residents has been changed in the column “Number or Type of Care Recipients” in the last row labeled “Housing with Services Establishment.” Specifically, “16 adult residents” has been changed to “>16 adult residents.” That’s because, in the prior row, the number of adult residents is listed as 6-16. Therefore, the last row must have been intended to cover establishments with more than 16 adult residents.

In two of the rows for Boarding and Lodging facilities, the term “Bed and Breakfast” has been changed to “Lodging facilities.” This is needed and reasonable because “bed and breakfast” is commonly understood to include breakfast. Because these facilities may not provide breakfast, the more general term “lodging facilities” avoids confusion.

On two rows of the chart, the number of care recipients has been changed from “< 5 residents” to “≤ 5 residents”: the “Boarding Care” row for R-3 dwelling units, and the “Chemical Dependency and Mental Health Treatment Programs” row for R-3 dwelling units. These amendments are for clarification. In each case, the next row applies to 6-16 residents. Therefore, the amended line must apply to 5 residents.

The rows that are labeled “Chemical Dependency Treatment Programs” in the current rule are changed to “Chemical Dependency and Mental Health Treatment Programs.” This is a clarification rather than a substantive change. In the current code, Mental Health Treatment Programs fall under the umbrella of Supervised Living Facilities, Class A, which have the same occupancy criteria as Chemical Dependency Treatment Programs. *See* current part 1305.0302.

In the last two rows labeled “Chemical Dependency and Mental Health Treatment Programs,” the phrase “all of whom may not be capable of self-preservation without assistance” has been added. This is consistent with IBC sections 308.2.2 and 310.5.2.

The final three rows of the table are added in order to create a more comprehensive table. The information on these three rows is from the 2018 IBC, Sections 304.1 and 308.3, as amended by this proposed rule.

1305.0308 SECTION 308, INSTITUTIONAL GROUP I.

Subpart 1. IBC section 308.2, Institutional Group I-1. This subpart is amended by renumbering the IBC section references because the corresponding sections were renumbered in the 2018 IBC. The phrase “and its subsections” is added for clarity. The phrase “custodial care” is amended to “custodial care services,” and the word “homes” is added after “Boarding care” for consistency with the Minnesota State Fire Code. *See* Minnesota Rule 7511.0202, definition of Occupancy Classification, Group I-1.

A sentence is added to clarify that subsections 308.2.1, 308.2.2, and 308.2.3 are unchanged from the model code. The current rule language amending sections 308.3.1 and

308.3.2 is no longer needed. The current rule 308.3.2 is now covered in model code section 308.2.3. The current rule 308.3.1 is now rewritten as 308.2.4, discussed below.

308.2.4, Five or fewer persons receiving custodial care. Section 308.2.4 in the 2018 IBC is comparable to section 308.3.1 in the current rule. The existing section 308.3.1 is therefore proposed to be deleted and renumbered as section 308.2.4 for consistency with the 2018 IBC. The phrase in the current rule “such as the above” has been deleted because it is unnecessary. The phrase “such care” has been changed to “custodial care” for clarity.

Subp. 2. IBC section 308.3, Institutional Group I-2. This subpart is amended by renumbering the IBC section references because the corresponding sections were renumbered in the 2018 IBC. The other changes to the first sentence and to section 308.3 are for clarity. A sentence has been added at the end to clarify that subsections 308.3.1, 308.3.1.1 and 308.3.1.2 of the model code are not amended.

308.3.2, Five or fewer persons receiving care. The phrase “such as above” is deleted because it is unnecessary. The phrase “such care” has been changed to “care consistent with Group I-2 occupancies” for clarity.

Subp. 4. IBC section 308.5, Group I-4, day care and day services facilities. Almost all of the language in this subpart is new. One sentence in proposed section 308.5.4 is in current part 1305.0308, subp. 4.

308.5, Group I-4, day care and day services facilities. The first paragraph of this first section is comparable to the model code and almost identical to the fire code. *See* Minn. R. 7511.0202, definition of “occupancy classification,” group I-4. The only substantive change from the current fire code language, which is also included in proposed amendments to the fire code, is to update references to adult “day care” to “day services.”

308.5.1, Classification as Group E. This introductory sentence is needed because the specific classification requirements have been divided into three subsections, 308.5.1.1 through 308.5.1.3.

308.5.1.1, Adult day services centers serving only persons capable of self-preservation. This subsection has been added to coordinate with the Minnesota State Fire Code, Minnesota Rules, chapter 7511. The Minnesota State Fire Code allows adult day services facilities to be classified as Group E occupancies when all persons served at the facility are capable of self-preservation. *See* Minnesota Rules, part 7511.8100, IFC section 8102.1.1. The language of proposed rule 308.5.1.1 is comparable to this provision of the fire code.

308.5.1.2, Adult day services centers serving both persons capable and persons not capable of self-preservation. This subsection has been added to coordinate with the Minnesota State Fire Code, Minnesota Rules, chapter 7511. The Minnesota State Fire Code allows some adult day services facilities to be classified as Group E occupancies when at least 50 percent of the persons served at the facility are capable of self-preservation. *See* Minnesota Rules, part 7511.8100, IFC section 8102.1.3. In addition, the rooms where adult day services are provided must be on the level of exit discharge and the evacuation area must be easily accessible without use of stairs. The proposed rule as well as proposed amendments to the fire code would also

require an automatic fire alarm system in the hazardous areas. Proposed section 308.5.1.2 allows an adult day services facility to be classified as a Group E occupancy rather than an Institutional Group I-4, day services facility that has more stringent life-safety requirements. It is reasonable to allow less stringent life-safety protections where at least half of those cared for at the facility are capable of self-preservation without assistance, the evacuation area is easily accessible, and there is an automatic fire alarm system.

308.5.1.3, Child day care. This proposed subsection is added to specify the requirements for child day care facilities to be classified as Group E occupancies rather than Group I-4 occupancies. A child day care facility classified as a Group E occupancy has less stringent life-safety requirements than a child day care facility classified as a Group I-4 occupancy. A child day care facility classified as Group E is limited in the number of children receiving care and must be on the level of exit discharge. Each room providing care must have an exit door directly to the exterior allowing for rapid evacuation in the event of an emergency. The proposed requirements for the classification of a child day care facility as a Group E occupancy are the same as the requirements in the 2018 IBC, section 308.5.1. The 2018 IBC requirements have been reformatted in the proposed rule as a list, for clarity.

A sentence is added at the end to clarify that model code sections 308.5.2 and 308.5.3 are not amended.

308.5.4, Five or fewer persons receiving care in a dwelling unit. This subpart is amended by renumbering the IBC section reference because the corresponding section was renumbered in the 2018 IBC. The language of the rule part is amended by deleting “a facility such as above” and replacing it with “adult day services or child day care” for clarity. The 2018 IBC is modified by specifying that adult day services or child day care located in a one- or two-family dwelling or townhouse must be constructed in accordance with either the IBC or the International Residential Code (“IRC”). This is consistent with the language of the IBC. However, the proposed rule adds the requirement that, if constructed in accordance with the IRC, the dwelling must have an automatic fire sprinkler system installed when required by section 903.2.8 of the IBC. This is a needed and reasonable life-safety precaution, as discussed below.

The ICC produces two model documents for the general regulation of building construction, the IBC and the IRC. If a jurisdiction adopts only the IBC, then the provisions for one-family dwellings, two-family dwellings and townhouses that are normally in the scope of the IRC must then be included in the IBC adopted by that jurisdiction. However, Minnesota adopts both the IRC with amendments (Chapter 1309), and the IBC with amendments (Chapter 1305). Many small licensed adult or child day care facilities are located in residential dwellings constructed to the requirements of the IRC. Dwellings in Minnesota that are constructed to the requirements of the IRC are not required to have an automatic fire sprinkler system, because Minnesota does not adopt the sprinkler requirement contained in the IRC for all one- and two-family dwellings and townhouses. It is reasonable to allow adult or child day care facilities serving five or fewer persons to be located in a dwelling constructed to the requirements of the IRC due to the lower costs of construction for buildings built to that code. It is reasonable to cross-reference section 903.2.8 because that section specifies when sprinklers are required in Group R occupancies.

1305.0310 SECTION 310, RESIDENTIAL GROUP R.

Subp. 1. IBC section 310.1, Residential Group R. This subpart is amended by renumbering the IBC section references because the corresponding section references are renumbered in the 2018 IBC. The existing language referencing sections 310.5 and 310.6 is deleted and replaced with an exception that refers to Table 302.2. Table 302.2 coordinates the IBC residential occupancy classifications with the licensed facility classifications of MDH and DHS. The current amendment to Section 310.1 acknowledges the exclusion of buildings regulated by the International Residential Code, as amended by the chapter 1309 (the Minnesota Residential Code). However, the current rule incorporates allowances for R-3 and R-4 occupancies contained in sections 310.5 and 310.6 to be constructed in accordance with chapter 1309 when permitted as licensed uses by MDH or DHS. The proposed rule rephrases the amendment to Section 310.1 as an exception and provides more specific information. This amendment is reasonable because it clarifies what types of care facilities may be built to the requirements of chapter 1309. It is reasonable to cross-reference section 903.2.8 because that section specifies when sprinklers are required in Group R occupancies.

A sentence is added at the end of this section stating that residential occupancies are classified according to subsections 310.2 to 310.5. This is needed for readability and clarity.

IBC section 310.2, Residential Group R-1. Section 310.2 in the current rule is deleted because it is not necessary. Section 201.1 of the 2018 IBC states: “unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.” Therefore, all the definitions in chapter 2 apply throughout the code unless otherwise specified. It is unnecessary to state that chapter 2 contains definitions.

Section 310.2 in the 2018 IBC addresses Residential Group R-1 occupancies, which was addressed by section 310.3 in the 2012 IBC. Section 310.3 in the current rule is therefore renumbered 310.2. The current rule contains language in the R-1 occupancy for “bed and breakfast facilities with six or more guest rooms.” It also includes language redirecting “bed and breakfast facilities with fewer than six guest rooms” to the R-3 occupancy. The 2012 IBC had no language addressing bed and breakfast facilities or other types of smaller lodging facilities.

The 2015 IBC model code introduced a new definition for “lodging houses” that parallels what Minnesota allowed in the 2015 Minnesota Building Code for bed and breakfast facilities. The term lodging house eliminated the “breakfast” portion which has little to do with the greatest hazards associated with providing overnight guest accommodations, and clarified that the allowance to the R-3 occupancy was specific to facilities where at least one person is a permanent resident. The proposed rule eliminates the term “bed and breakfast facility” wherever it occurs, in favor of “lodging house” because “bed and breakfast” is not a defined term and “lodging house” is now defined. “Lodging House” is defined in the 2018 IBC as: “A one-family dwelling where one or more occupants are primarily permanent in nature and rent is paid for guest rooms.” The 2018 IBC categorizes lodging houses with five or fewer guest rooms and 10 or fewer occupants as an R-3 occupancy. The proposed new language is needed for clarity because the 2018 IBC does not specifically provide guidance for lodging houses with more than five guest rooms or with more than 10 guest accommodations. The amendment to Section 310.2 is necessary to clarify that these larger lodging house facilities are to be classified as an R-1

occupancy and to be consistent with the application of the current Minnesota amendment. The language redirecting bed and breakfast facilities with fewer than six guest rooms to the R-3 occupancy is eliminated from the R-1 occupancy list because language is now included in Section 310.4 for the R-3 occupancy group.

However, model code section 310.4 (like the proposed section 310.4 below) includes in the group R-3 classification lodging houses with five or fewer guest rooms and 10 or fewer occupants. It is reasonable to classify larger lodging houses as group R-1 because that is the appropriate classification for larger occupancies with sleeping units where the occupants are primarily transient in nature. The new language is identical to proposed language for the Minnesota State Fire Code. *See* proposed amendment to Minn. R. 7511.0202, definition of “occupancy classification,” group R-1.

IBC section 310.3, Residential Group R-2. Section 310.3 is amended for consistency with the list of facilities that are classified as Group R-2 occupancies in the 2018 IBC. The references to “boarding houses (nontransient) with more than 16 occupants” and “monasteries” are deleted and relocated under the heading titled “congregate living facilities (nontransient) with more than 16 occupants.” It is reasonable to relocate boarding houses and monasteries under this heading for consistency with the occupancy classifications in the 2018 IBC. Finally, a hyphen is added to “time-share” to correct a spelling error in the current rule.

IBC section 310.4, Residential Group R-3. Section 310.4 is amended for consistency with the 2018 IBC by reformatting the section and including additional residential purposes. The references to boarding houses are deleted and relocated under headings appropriate to their congregate living facility type. Boarding houses with 16 or fewer nontransient occupants are located under “congregate living facilities (nontransient) with 16 or fewer occupants.” Boarding houses with 10 or fewer transient occupants are relocated under the “congregate living facilities (transient) with ten or fewer occupants” heading. The listing for “buildings that do not contain more than two dwelling units” is added because this language is in model code section 310.4. Dormitories, fraternities, sororities, convents, and monasteries are added under the heading “congregate living facilities (nontransient) with 16 or fewer occupants.” It is reasonable to include those types of use under that heading because they are congregate living facilities and may have fewer than 16 occupants. This is consistent with the language in the 2018 IBC. The words “two or fewer” are added to “Dwelling units in mixed occupancy buildings” because this subsection is limited to R-3 residential occupancies. A mixed occupancy building with more than two dwelling units would be classified as an R-2 residential occupancy. *See* proposed rule 1305.0310, amending section 310.3 of the IBC. The added language on lodging houses is identical to the language in the 2018 IBC.

The final sentence of section 310.4 is deleted and relocated to section 420. Section 420 addresses special detailed requirements based on use and occupancy for Groups I-1, R-1, R-2, R-3, and R-4 occupancies. It is reasonable to modify section 420 to include the language cross-referencing the Minnesota Rules, chapter 1309, durability requirements for dwellings because chapter 4 addresses special requirements and is where designers and other code users look for other special requirements based on use and occupancy.

IBC section 310.4.1, Care facilities within a dwelling. This item is amended by

renumbering the item to coordinate with the renumbering of the 2018 IBC. For clarity, a sentence is added at the end stating that subsection 310.4.2 remains unchanged.

IBC section 310.5, Residential Group R-4. This item is amended by renumbering the item to coordinate with the renumbering of the 2018 IBC. Also, the sentence regarding capability of self-preservation is deleted, and is replaced with a sentence at the end specifying that the buildings will be classified as either condition 1 or 2. This change is needed because, in the 2018 IBC, there are differences in the two conditions regarding the amount of assistance needed to evacuate a building in the event of an emergency. Individuals receiving custodial care in buildings classified as condition 1 are capable of evacuating without any assistance. *See* section 310.5.1 of the 2018 IBC. Individuals receiving custodial care in buildings classified as condition 2 may need limited verbal or physical assistance to evacuate. *See* section 310.5.2 of the 2018 IBC.

1305.0402 SECTION 402, COVERED MALL AND OPEN MALL BUILDINGS.

Subpart 1. IBC section 402.4.2.2.2, Property lines. Repeal. This subpart is repealed because the 2018 IBC requirements include provisions for property lines in malls. Section 706.1.1, exception 1, of the 2018 IBC specifically addresses openings in party walls separating anchor buildings and the mall and makes allowances for openings per Section 402.4.2.2.1. Section 402.4.2.2.1 allows the openings with building code related conditions. The 1305 TAG determined that these provisions in the model code adequately address the safety concerns.

Subp. 3. IBC section 402.7.2, Smoke Control. This subpart is amended to correct a spelling error by deleting “postfire” and replacing it with “post-fire.” Also, the cross-reference at the end of the rule is changed to reflect the renumbering of the 2018 IBC.

1305.0403 SECTION 403, HIGH-RISE BUILDINGS.

Subp. 3. IBC section 403.4.8.3, Standby power loads. This subpart is amended by renumbering section reference numbers to coordinate with renumbering changes made to the 2018 IBC.

1305.0406 SECTION 406, MOTOR VEHICLE-RELATED OCCUPANCIES.

Subpart 1. IBC section 406.2.4, Floor surface. This subpart is amended by renumbering section reference numbers to coordinate with the renumbering of the 2018 IBC.

1305.0407 SECTION 407, GROUP I-2.

Subpart 1. IBC section 407.2.1, Spaces open to the corridor. This language is the existing language in 1305.0407. It has been numbered as subpart 1 because of the need to add additional subparts. Also, the phrase “automatic fire detection” has been changed to “automatic smoke detection.” These spaces are equipped with automatic sprinkler systems, based on requirements elsewhere in the IBC. An automatic sprinkler system is a type of automatic fire detection system that activates based on an increase in temperature. Automatic smoke detection detects smoke and therefore provides additional life safety protection. It is therefore reasonable to require automatic smoke detection in addition to the sprinkler system.

Subp. 2. IBC section 407.4.4.5.1, Area. The first sentence of the proposed section 407.4.4.5.1 is identical to the 2018 IBC. The exception to section 407.4.4.5.1 of the 2018 IBC is modified to add the requirement in proposed item 2 of the exception. Specifically, the exception would only apply in the described Group I-2 occupancies if the sleeping rooms are arranged to allow visual supervision by care providers. This proposed modification of the exception promotes life safety and is consistent with MDH's requirements pursuant to the NFPA 101 Life Safety Code, which that agency enforces. *See* Minn. Stat. § 144.50, subd. 6(c) (2018); Minn. R. 4664.0370, subp. 1(A) (2017). The modifications are reasonable to avoid conflicting requirements between the Minnesota Building Code and MDH.

Subp. 3. IBC Section 407.4.4.5.2, Exit Access. The language of Section 407.4.4.5.2 of the 2018 IBC is not modified but included to provide context for subsections 407.4.4.5.2.1 and 407.4.4.5.2.2. Subsection 407.4.4.5.2.1 requires that a sleeping room or care suite of more than 1,000 square feet located in a Group I-2 occupancy has one of the means of egress from the suite directly to a corridor or exit. "Corridor" is a defined term: "An enclosed exit access component that defines and provides a path of egress travel." 2018 IBC, section 202. Subsection 407.4.4.5.2.2 requires that an exit access door, providing a path from the suite to the exit, must be less than 100 feet from any point in the sleeping suite and the exit must be less than 200 feet from any point in the sleeping suite. These proposed modifications promote life safety and are consistent MDH's requirements pursuant to the NFPA 101 Life Safety Code, which that agency enforces. *See* Minn. Stat. § 144.50, subd. 6(c) (2018); Minn. R. 4664.0370, subp. 1(A) (2017). The modifications are reasonable to avoid conflicting requirements between the Minnesota Building Code and MDH.

Subp. 4. IBC section 407.4.4.6.1, Area. This section is modified so care suites in Group I-2 occupancies that do not contain sleeping rooms are limited to 10,000 square feet in area. This proposed modification promotes life safety and is consistent with MDH's requirements pursuant to the NFPA 101 Life Safety Code, which that agency enforces. *See* Minn. Stat. § 144.50, subd. 6(c) (2018); Minn. R. 4664.0370, subp. 1(A) (2017). The modification is reasonable to avoid conflicting requirements between the Minnesota Building Code and MDH.

Subp. 5. Section 407.4.4.6.2, Exit access. The first sentence of proposed section 407.4.4.6.2 is identical to the model code. The proposed rule adds a second sentence that requires a care suite, without a sleeping room, where at least two exit access doors are required, to have at least one of those exits directly to a corridor or exit. Proposed subsection 407.4.4.6.2.1 requires that an exit access door be less than 100 feet from any point in the care suite and that the exit be less than 200 feet from any point in the care suite. This proposed modification promotes life safety and is consistent with MDH's requirements pursuant to the NFPA 101 Life Safety Code, which that agency enforces. *See* Minn. Stat. § 144.50, subd. 6(c) (2018); Minn. R. 4664.0370, subp. 1(A) (2017). The modification is reasonable to avoid conflicting requirements between the Minnesota Building Code and MDH.

Subp. 6. IBC section 407.5.1, Smoke compartment size. Section 407.5.1 of the 2018 IBC is modified to eliminate the exceptions to this section allowing for larger smoke compartments in Group I-2 occupancies if certain criteria are met. Smoke compartments are a space enclosed by smoke barriers that prevent smoke from moving into a space. Smoke compartments are necessary in care suites because of the varying self-preservation capabilities of

patients. By modifying the code sections to eliminate the exceptions, the smoke compartments cannot have an area larger than 22,500 square feet. Restricting the size of the smoke compartments promotes life safety, and is necessary for consistency with MDH's requirements for licensed facilities pursuant to the NFPA 101 Life Safety Code, which that agency enforces. *See* Minn. Stat. § 144.50, subd. 6(c) (2018); Minn. R. 4664.0370, subp. 1(A) (2017). The modification is reasonable to avoid conflicting requirements between the Minnesota Building Code and MDH.

1305.0408 SECTION 408, GROUP I-3

Subp. 3. IBC section 408.9, Windowless buildings. The 2018 IBC includes section 408.9 addressing windowless buildings. The 2012 IBC did not include a section with requirements for windowless buildings. The introductory language “by adding a new subsection” is deleted and replaced with “is amended” because existing section 408.9 of the 2018 IBC is amended by this subpart. Also, the sentence is revised to correct a spelling error in the first sentence.

1305.0410 SECTION 410, STAGES, PLATFORMS AND TECHNICAL PRODUCTION AREAS

IBC section 410.7, Standpipes. This rule part is added to delete the 2018 IBC requirement that stages be equipped with standpipe systems that comply with section 905. Current rule 1305.0905, subp. 7, deletes the requirement in the 2012 IBC that stages be equipped with a Class III standpipe system. Because section 410.7 of the 2012 IBC remained in the code, however, some building officials interpreted the general provisions of section 905 as applying to stages, and therefore required stages to be equipped with a Class I standpipe system. The deletion of section 410.7 of the 2018 IBC clarifies that standpipe systems are not required for stages. This is needed and reasonable to provide consistent application and uniform enforcement of the code.

1305.0413 SECTION 413, COMBUSTIBLE STORAGE.

IBC section 413.3, Fire protection of floors. This subpart is amended by requiring Group R-4 occupancies used for combustible storage to comply with the requirements of the existing amendment to this chapter for the fire protection of floors. Group R-4 occupancies are required to meet all the requirements for Group R-3 construction unless otherwise stated in this code. The existing amendment to this section requires Group R-3 occupancies used for combustible storage to have fire protection of floors. Because Group R-4 occupancies are required to meet the code requirements for Group R-3 construction, it is reasonable to require that Group R-4 occupancies used for combustible storage must also have fire protected floors. The proposed amendments to this rule also renumber section 420.6 to section 420.12 for consistency with renumbering of the 2018 IBC.

1305.0420 SECTION 420, GROUPS I-1, R-1, R-2, R-3 and R-4.

Group R-4 occupancies are added to the rule part headnote because proposed subparts 1 and 11 include construction requirements for Group R-4.

Subpart 1. IBC section 420.1, General. This subpart is amended by requiring Group R-4 occupancies to comply with the requirements of this section. Because Group R-4 occupancies are required to meet the code requirements for Group R-3 construction, it is reasonable to specify that Group R-4 occupancies are required to meet the requirements of section 420 of the 2018 IBC. Section 420.1 of the IBC is modified by changing the section references "420.1 through 420.6" to "420.1 through 420.12." The 2018 IBC section 420 has been revised to include additional sections. As a result, the existing amendment adding section 420.6, is renumbered to section 420.12. A new section, 420.11, is added to address the durability requirements for Group R-3 and R-4 occupancies previously located in part 1305.0310. The notation that "[s]ections 420.2 to 420.5 remain unchanged" is deleted because it is unnecessary.

Subp. 1a. IBC section 420.7, Group I-1 assisted living housing units. The first sentence and items 1, 2 and 6 are identical to section 420.7 of the 2018 IBC. Items 3, 4, and 5 of Section 420.7 of the 2018 IBC are modified to replace "automatic fire detection system" with "automatic smoke detection." An automatic sprinkler system is an automatic fire detection system because the sprinkler system activates by detecting the heat of the fire. Section 420.4 of the 2018 IBC, which is not proposed for amendment, requires an automatic sprinkler system throughout Group I-1 occupancies. Section 420.7 is proposed for amendment to clarify that, for life safety reasons, automatic smoke detection is required in Group I-1 assisted living occupancies in addition to an automatic sprinkler system.

Subp. 1b. IBC section 420.10, Group R-2 congregate living cooking facilities. Section 420.10 of the 2018 IBC concerns only domestic cooking appliances for use by residents of Group R-2 college dormitories. The proposed rule modifies section 420.10 to allow all Group R-2 congregate living cooking facilities to meet requirements for domestic cooking appliances located in sections 420.10.1 and 420.10.2. The 2018 IBC requirements for domestic kitchen appliances located in Group R-2 college dormitories are more lenient than the requirements for domestic kitchen cooking facilities and appliances located in other Group R-2 congregate living facilities. Congregate living facilities are classified in the Group R-2 occupancy category due to their similar uses and risk hazards. Because Group R-2 congregate living facilities have similar uses and risk hazards, it is reasonable that all Group R-2 congregate living facilities have the same requirements for domestic cooking facilities and appliances. Having the same requirements for domestic cooking facilities and appliances for all Group R-2 congregate living facilities will lead to more uniform enforcement and application of code requirements for Group R-2 congregate living facilities.

In proposed section 420.10.1, the proposed rule changes "domestic cooking appliances" to "installed domestic cooking appliances." This is reasonable because the building code can only regulate items installed in the building, not portable items such as portable microwaves and coffee makers.

Section 420.10.2 is identical to the 2018 IBC.

Subp. 2. This subpart adds two new subsections to IBC section 420. Both of these subsections are comparable to current Minnesota rules.

IBC sections 420.11, Group R-3 and R-4 durability. The requirements in this new

subsection for Group R-3 occupancies are currently located in Minnesota Rules, part 1305.0310, amending section 310.5 of the 2012 IBC (renumbered 310.4 in the 2018 IBC). This current rule affects both Group R-3 and R-4 occupancies because current rule 1305.0310, amending section 310.6 of the 2012 IBC (renumbered 310.5 in the 2018 IBC), states: “Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.” Proposed subpart 2 requires Group R-3 and R-4 occupancies to meet certain building durability requirements. The current rule directs code users to specific durability and moisture requirements for residential dwellings that are located in Minnesota Rules, Chapter, 1309, the Minnesota Residential Code (MRC), and not the IBC. The MRC is intended to be used for construction of one-family and two-family dwellings and townhouses. Therefore, some of the required durability and moisture requirements for these structures have been located in the MRC. Because Group R-3 and R-4 occupancies in the IBC are licensed facilities that are one-family and two-family dwellings and townhouses, designers must be directed to the durability provisions that are located in the MRC. Because these durability requirements are detailed special requirements based on occupancy and use for Groups R-3 and Group R-4 that are licensed facilities, it is reasonable to relocate these requirements to this rule part (instead of current part 1305.0310). This rule part addresses special detailed requirements for Groups I-1, R-1, R-2, R-3, and R-4. Designers look to this rule part for information regarding special requirements for Group R-3 and Group R-4 occupancies rather than part 1305.0310, which describes what uses of dwellings are classified as Group R.

The proposed subpart clarifies that the durability requirements apply to both Group R-3 and R-4 occupancies. Furthermore, the proposed rule changes the numbers of the cross-references for the durability requirements because of the renumbering of sections in the 2018 IRC. This is consistent with amendments being proposed to chapter 1309.

IBC section 420.12, Fire protection of floors. This subsection is the same as the language in current subdivision 2 of part 1305.0420. This subsection is renumbered to correspond with the new subsection numbers in the 2018 IBC.

1305.0423 SECTION 423, STORM SHELTERS.

Subparts 1 and 2. IBC section 423.3, Critical emergency operations, and IBC section 423.4, Group E occupancies. These two new subparts modify sections 423.3 and 423.4 of the 2018 IBC. In both subparts, the model code language referencing Figure 304.2(1) of the ICC 500 (Standard on the Design and Construction of Storm Shelters) is replaced with a list of counties in Minnesota where the speed for tornadoes is 250 miles per hour. Figure 304.2(1) of the ICC 500 is a map of United States illustrating wind speed for tornadoes in different areas of the country. The map is difficult to interpret because wind speed for tornados varies within the state and the map does not show distinct geographic boundaries for where tornado wind speed changes. As a result, it is difficult for code users to interpret where in the state tornado wind speeds are 250 miles per hour. Replacing the reference to Figure 304.2(1) of the ICC 500 with a list of counties provides clarity as to what counties are affected by tornadoes with speeds of 250 miles per hour.

In subpart 1, the language of section 423.3 of the 2018 IBC is reformatted to include subsections 423.3.1 and 423.3.2. This makes the subpart easier to understand. In subpart 2, the language is reformatted for clarity. The exceptions are identical to the exceptions in the 2018

IBC.

A sentence is added at the end of subpart 2 to clarify that IBC sections 423.4.1 and 423.4.2 are not modified.

1305.0429 SECTION 429, GROUP E OCCUPANCIES.

This rule part is renumbered from 1305.0425 to 1305.0429 because of numbering changes made to the 2018 IBC. The section reference numbers are amended to coordinate with changes made to the 2018 IBC. With one exception, the language and content of this rule part remain unchanged. The only change is in the last sentence of proposed section 429.2.2. The current rule refers to “this subpart.” Because this is language that is being substituted into the model code, the rule should refer to this “section;” portions of the IBC are not referred to as “subparts.” This corrects an error in the current rule.

1305.0503 SECTION 503, GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

IBC section 503.1.4.1, Enclosures over occupied roofs. This new rule part modifies section 503.1.4.1 of the 2018 IBC. The first sentence is identical to the 2018 IBC. The 2018 IBC contains one exception, which has been reformatted into exception 1 and 2 for clarity. The proposed rule add two additional exceptions, exceptions 3 and 4. These new exceptions allow taller structures to enclose occupied roof areas and provide better wind protection for occupants. This revision is due to the climatic conditions in Minnesota. The improved wind protection will allow the roof to be occupied for more of the year. Exception number 3 allows enclosures that are more than 48 inches in height on occupied roofs, when the occupied roof is considered a story of the building and complies with IBC requirements for stories and floor area of a building. IBC requirements for stories and floor area are dependent upon the construction, occupancy classification, and whether there is an automatic sprinkler system installed throughout the building. An occupied roof that complies with the requirements for stories and floor area of a building is equipped with the life-safety features required for buildings of that type and occupancy classification. Exception number 4 allows enclosure walls that are unlimited in height where a standpipe is readily accessible from the roof. Standpipes are a type of rigid water piping in buildings that fire hoses can be connected to and provide firefighters with water supply on higher stories of buildings. These exceptions allow enclosures that are more than 48 inches in height and provide for the comfort of occupants while ensuring the necessary life-safety precautions for a taller enclosure on an occupied roof.

1305.0504 SECTION 504, BUILDING HEIGHT AND NUMBER OF STORIES

Subpart 1. IBC Table 504.3, Allowable building height in feet above grade plane. Table 504.3 is modified by deleting footnote (d) from all occupancies. Footnote (d) addresses existing buildings. Because this table relates only to new buildings, footnote (d) needs to be deleted to avoid confusion. Amending the text of footnote (d) to “Not used” is reasonable to avoid having to re-letter the remaining footnotes.

Subp. 2. IBC Table 504.4, Allowable building height in stories above grade plane. Table 504.4 is modified by deleting footnote (d). Footnote (d) addresses existing buildings. Because this table relates only to new buildings, footnote (d) needs to be deleted to avoid confusion.

Amending the text of footnote (d) to “Not used” is reasonable to avoid having to re-letter the remaining footnotes.

1305.0506 SECTION 506, BUILDING AREA

IBC Table 506.2, Allowable area factor in square feet. Table 506.2 is modified by deleting footnote (d). Footnote (d) addresses existing buildings. Because this table relates only to new buildings, footnote (d) needs to be deleted to avoid confusion. Amending the text of footnote (d) to “Not used” is reasonable to avoid having to re-letter the remaining footnotes.

1305.0507 SECTION 507, UNLIMITED AREA BUILDINGS. Repeal.

Section 507 of the 2018 IBC now contains requirements that are comparable to the requirements in current rule 1305.0507. This part is therefore no longer necessary.

1305.0509 SECTION 509, SPECIAL PROVISIONS. Repeal.

Section 509 of the 2012 IBC has been renumbered and amended as Section 510 in the 2018 IBC. The rule is no longer needed because Section 510.2, items 4 and 5, of the 2018 IBC contain requirements comparable to the requirements in current rule 1305.0509.

1305.0603 SECTION 603, COMBUSTIBLE MATERIALS IN TYPE I AND TYPE II CONSTRUCTION.

IBC section 603.1, Allowable materials. This subpart is amended by renumbering existing exception number 26 to exception number 27 to coordinate with renumbering of the 2018 IBC. The existing amendment is modified to extend use of wood above the roof deck from 24 inches to 48 inches. Most membrane and built-up asphalt roof systems require plywood backing as a substrate at the back side of parapets. Increasing the allowable amount of wood from 24 inches to 48 inches above the roof deck makes backing of parapets much easier without requiring transition of materials and corresponds to the modular sizing of plywood panels. The technical advisory group discussed this and concluded that the small additional amount of potential fuel added outside of the building envelope did not appreciably increase the hazard of the roof construction.

1305.0707 SECTION 707, FIRE BARRIERS

IBC section 707.5, Continuity. Section 707.5 of the 2018 IBC is amended to add exception number 3. Exception number 3 does not require the fire barrier to extend through the attic and allows the top enclosure of the fire barrier to be capped at the exterior wall, fire wall, or another fire barrier. Currently, fire barriers are required to extend up to the underside of the roof sheathing through an attic unless the fire barrier is for a stair shaft or elevator shaft. In small enclosures, such as trash shaft access rooms in apartment buildings, the requirement that the fire barrier extend through the roof sheathing results in multiple small enclosed spaces within the attic that are challenging to ventilate and insulate. The difficulty ventilating and insulating these spaces results in moisture accumulating in the attic, making the building less durable. The proposed exception will allow trash chute access rooms and similar spaces to be capped with a fire barrier at the top of the shaft with a horizontal fire barrier and perimeter fire barrier walls

rather than extending the shaft through the attic. The proposed exception to section 707.5 is reasonable because a similar exception exists for elevator and stair shafts that provides sufficient fire protection. *See* 2018 IBC section 707.5, exception 2.

1305.0709 SECTION 709, SMOKE BARRIERS

Subpart 1. IBC section 709.1, General. The first sentence of this section is identical to Section 709.1 of the 2018 IBC. The proposed second sentence is new, and adds a reference to section 909.5.3. Section 909.5.3 describes the technical requirements for smoke barrier installation. It is reasonable to provide a reference to the section describing the technical requirements for the installation of smoke barriers in the section describing the requirements for smoke barriers.

Subp. 2. IBC section 709.5, Openings. This section is amended to add exception number 3 to exempt doors located in smoke barriers within Group I-3 occupancies from complying with the opening protection requirements for smoke barriers. The occupants of Group I-3 facilities are incapable of self-preservation due to the security measures in place at the facility. Group I-3 facilities include jails, prisons, correction centers, and reformatories. The doors within Group I-3 facilities must comply with specific requirements as a security precaution and cannot comply with the requirements of this section for the protection of openings within a smoke barrier. Because Group I-3 facilities have different security requirements for doors than other facilities, the doors in Group I-3 facilities cannot be protected in the same way that other openings in smoke barriers are.

1305.0714 SECTION 714, PENETRATIONS.

Subpart 1. IBC section 714.5.1, Through Penetrations. The existing language of this subpart is deleted and relocated to subpart 3, which will be discussed below. In the proposed new subpart 1, the language of exception number 1 to section 714.5.1 of the 2018 IBC is amended by adding the phrase “not utilized as ducts for conveying air” in the first sentence. The rest of the exception is identical to exception 1 in section 714.5.1 the 2018 IBC. The additional phrase is needed to specify that mechanical ducts used to convey air for the ventilation of a building are not exempt from the requirements for through penetrations of horizontal assemblies. Horizontal assemblies are fire-resistance-rated floor assemblies that are designed to restrict the spread of fire. Electrical, plumbing, and mechanical items, such as conduits, pipes, tubes, ducts, and plumbing, are through penetrations into the horizontal assemblies. These through penetrations can be seen from either side of the floor. The opening for the through penetration of the horizontal assembly must be protected to prevent the spread of fire. Exception number 1 allows through penetrations by steel, ferrous or copper conduits, pipes, tubes or vents to follow an alternative method to protect the opening made in the horizontal assembly from fire. Some designers may incorrectly interpret this exception to include ductwork used to convey air, such as conduits and tubes. An opening in a horizontal assembly allowing for the penetration of ductwork that conveys air requires additional protection to prevent the potential for the spread of fire through the ductwork. It is reasonable to specify that exception number 1 does not apply to ductwork used to convey air because this type of penetration requires extra fire protection. The current code (2012 IBC section 714.1.1) requires this type of extra fire protection; for life safety reasons, it is reasonable to maintain this level of protection in the proposed amendments.

Subp. 2. IBC section 714.5.2, Membrane penetrations. Exception number 1 to IBC section 714.5.2 is amended by adding the phrase “not utilized as ducts for conveying air” in the first sentence. The rest of the exception is identical to exception 1 in section 714.5.2 of the 2018 IBC. As in subpart 1, the additional phrase is needed to specify that mechanical ducts used to convey air for the ventilation of buildings are not exempt from the fire protection requirements for membrane penetrations that are part of a horizontal assembly. Horizontal assemblies are fire-resistance-rated floor assemblies that are designed to restrict the spread of fire. Electrical, plumbing, and mechanical, such as conduits, pipes, tubes, ducts, and plumbing, breach the membrane of the horizontal assembly. By breaching the membrane of the horizontal assembly, these items do not penetrate through the entire floor assembly as to be visible from the other side. By breaching the membrane of the horizontal assembly, the item is contained within the floor assembly and only visible from the side it enters into the floor assembly from. The membrane penetration must be protected so the horizontal assembly may retain its fire-resistance properties to prevent the spread of fire. Exception number 1 allows penetrations through the membrane by steel, ferrous or copper conduits, pipes, tubes or vents to follow an alternative method to protect the opening into the membrane and the horizontal assembly from fire. Some designers may incorrectly interpret this exception to include ductwork used to convey air as conduits and tubes. A penetration of the membrane to allow ductwork that conveys air requires additional protection to prevent the potential for the spread of fire through the ductwork. It is reasonable to specify that exception number 1 does not apply to ductwork used to convey air because this type of penetration requires extra fire protection. The current code (2012 IBC section 714.1.1) requires this type of extra fire protection; for life safety reasons, it is reasonable to maintain this level of protection in the proposed amendments.

Subp. 3. IBC section 714.5.2, Membrane penetrations. This is the text of the current part 1305.0714, which is proposed to be relocated to subpart 3. This subpart is further amended by renumbering the IBC section references because the corresponding sections were renumbered in the 2018 IBC.

1305.0717 SECTION 717, DUCTS AND AIR TRANSFER OPENINGS.

Subp. 2. IBC section 717.6.1, Through penetrations. IBC section 717.6.1 is amended by renumbering the IBC section references because the corresponding sections were renumbered in the 2018 IBC. The word “a” is deleted in the first sentence to correct a grammatical error.

The first sentence of exception 1 is rephrased for clarity. Item (a) of exception number 1 is amended to clarify the two options for protection of the horizontal assembly from the spread of fire where a duct is within a wall that is either above or below the horizontal assembly. Items that penetrate fire-resistive assemblies (walls, floors, roofs) are traditionally required to be tested to ensure that the penetrating item (conduit, pipe, duct, and plumbing) does not negatively affect the fire-resistive assembly that is being penetrated. The first option is to enclose the duct within the wall both above and below the horizontal assembly. A duct enclosed within the wall does not come in contact with combustibles but the space around the duct must be protected to prevent the spread of fire. The amendment requires the area surrounding the duct, or annular space, within the wall cavity to be filled with fire blocking materials that resist the spread of fire.

The second option does not require the duct to be enclosed within the wall but requires

the annular space around the penetrating duct be filled with an approved through-penetration firestop system having both an F rating and a T rating that is equivalent to the rating of the horizontal assembly. The testing agency assigns an F and T rating to the penetrating item. An F rating designates the time frame used to determine the acceptance (1, 2 or 3 hour fire-resistivity) and the T rating determines whether the temperature of the penetrating item gets so hot that it is likely to ignite something combustible that it may be in contact with on the non-fire side of the assembly. The approved through-penetration firestop system must have both an F rating and T rating so the designer knows how long the system can resist fire and how hot the temperature may become.

The amendments to item (a) of exception number 1 clarify the two existing options for preventing the spread of fire through a penetration in a wall for a duct. The amendment to the first option is reasonable because it clarifies that fire blocking is required for the spaces around ducts that are enclosed within the wall. This provides additional fire protection that can slow the spread of fires. The amendment to the second option is also reasonable because it clarifies the requirements for the through-penetration firestop system. These changes clarify existing requirements, which lead to more uniform application and enforcement of the code.

Subp. 3. IBC section 717.6.3, Non-fire-resistance-rated floor assemblies. The first sentence of Section 717.6.3 of the model code is modified to refer to the Minnesota Mechanical Code rather than the International Mechanical Code. It is reasonable to direct readers to the applicable Minnesota code. Items 1 and 2 are identical to Items 1 and 2 in Section 717.6.3 of the 2018 IBC. Item number 3 of section 717.6.3 is modified to keep the 2012 IBC language. Item number 3 in 2018 IBC requires the floor assembly to be constructed from noncombustible materials. It is unnecessary to use noncombustible materials because the duct is protected with an approved noncombustible material and a fire damper is installed in the duct at each floor to close automatically when heat is detected to prevent the spread of fire. It is reasonable not to require the additional expense of constructing the floor from non-combustible materials because there are sufficient other protections to prevent the spread of fire. Other than removing the language requiring the floor to be composed of noncombustible materials, the rest of item 3, including the exception, is substantively the same as item 3 in the 2018 IBC.

1305.0803 SECTION 803, WALL AND CEILING FINISHES.

IBC section 803.3, Heavy timber exemption. This is a new rule part and modifies section 803.3 of the 2018 IBC by deleting the language at the end that requires heavy timber used for interior exit stairways, interior exit ramps, and exit passageways to comply with interior finish requirements. Other portions of building elements constructed from heavy timber are not required to comply with the interior finish requirements. The requirements for interior finish and decorative materials are intended to slow the spread of fire and the development of smoke. Heavy timber has inherent fire resistance qualities that slow the spread of fire. Walls that have fire resistance properties serve as enclosures for interior exit stairways, interior exit ramps, and exit passageways. A fire event that ignites the heavy timber used for the construction of interior exit stairways, interior exit ramps, and exit passageways will compromise the enclosure whether the requirements for interior finish are adhered to or not. It is reasonable to exempt heavy timber used for interior exit stairways, interior exit ramps, and exit passageways from the interior finish requirements because heavy timber has fire resistance qualities and the enclosure surrounding the

interior exit stairways, interior exit ramps, and exit passageways is fire resistant. The proposed amendment will ensure sufficient safeguards against the spread of fire while reducing construction costs.

1305.0806 SECTION 806, DECORATIVE MATERIALS AND TRIM.

IBC section 806.2, Combustible decorative materials. The 2018 IBC and 2018 IFC permit decorative materials to cover 10 percent of the wall or ceiling areas. In current part 7511.0807, subpart 1, the Minnesota State Fire Code permits decorative materials to cover 20 percent of the wall and ceiling areas and does not limit the amount of decorative materials in compliance with NFPA 701 that may cover wall and ceiling areas. The current Minnesota Building Code (chapter 1305) does not contain these amendments addressing combustible decorative materials, and therefore there is a conflict between the Minnesota State Fire Code and the Minnesota Building Code. In order to prevent conflict and confusion between codes, this new part 1305.0806 is proposed, and is identical to the contemporaneous amendments being proposed to part 7511.0807, subpart 1. Both of these proposed rules allow combustible decorative materials to cover 20 percent of the wall or ceiling areas in Groups A, B, E, I, M, and R-1 occupancies and Group R-2 dormitories, which is also permitted by the current Minnesota State Fire Code (rule 7511.0807, subpart 1).

Exception number 1 addresses combustible materials in Group A occupancies. Exception 1 is identical to exception 1 in section 806.2 of the 2018 IBC. A new exception number 2 is added to allow an unlimited amount of suspended decorative materials in existing Group A occupancies. By cross-referencing section 806.4 of the 2018 IBC, exception number 2 requires decorative materials to be flame resistant as determined by NFPA 701 or NFPA 289 flame propagation testing. This amendment is necessary so that existing theaters or auditoriums that are not equipped with an automatic sprinkler system may continue to use decorative materials such as stage curtains. Requiring stage curtains and other decorative materials to be flame resistant as determined by NFPA 701 or NFPA 289 testing is reasonable because it decreases the hazards to life and safety posed by combustible decorative materials while allowing for the use of existing Group A occupancies.

Exception number 2 of the 2018 IBC is renumbered to exception number 3. The only change to the 2018 IBC language is the grammatical correction of the word “ceiling” to “ceilings.”

Exception number 3 of the 2018 IBC is renumbered to exception number 4. The language of the exception is modified to permit Group A and E occupancies, in addition to Group B and M occupancies, to have an unlimited amount of combustible fabric partitions suspended from the ceiling. Under Section 806.4, the combustible fabric partitions must be determined to be flame resistant as determined by NFPA 701 or NFPA 289 flame propagation testing. This amendment is necessary so gymnasiums in Group A and E occupancies may use fabric room dividers. If this amendment is not adopted then gymnasiums are limited to 20 percent of the wall or ceiling area for combustible materials. Fabric partitions used in gymnasiums can easily exceed this amount. Requiring fabric partitions to be flame resistant as determined by NFPA 701 or NFPA 289 testing is reasonable because it decreases the hazards to life and safety posed by combustible fabric partitions while allowing for their use.

Exception number 4 of the 2018 IBC is renumbered to exception number 5. The language is modified from “10 percent limit” to “20 percent limit” because the language in section 806.2 is amended to allow combustible decorative materials to cover 20 percent of the wall or ceiling area. The rest of this exception is identical to exception 4 of the 2018 IBC.

IBC Section 806.2.1, Fixed or movable walls and partitions, paneling, wall pads, and crash pads. Section 806.2 is also modified by adding section 806.2.1. Section 806.2.1 permits fixed or movable walls and partitions, paneling, wall pads and crash pads covering less than 10 percent of the wall or ceiling area to comply with the requirements for decorative materials or furnishings. Fixed or movable walls and partitions, paneling, wall pads and crash pads that cover more than 10 percent of the wall or ceiling area must comply with the requirements for interior finish in section 803. The 2018 IBC requires all fixed or movable walls and partitions, paneling, wall pads and crash pads to comply with the requirements for interior finish without regard to the size of the item and its size relative to the ceiling or floor area. The requirements for interior finish are more restrictive than the requirements for decorative materials. It is reasonable to allow fixed or movable walls and partitions, paneling, wall pads and crash pads that cover 10 percent or less of the wall or ceiling area to comply with the requirements for decorative materials because the interior finish requirements are too restrictive for a small amount of material covering the walls.

The exception to section 806.2.1 allows fixed or movable walls and partitions, paneling, wall pads and crash pads to cover up to 20 percent of the wall or ceiling area in existing buildings if the room or area is protected by an automatic sprinkler system. Existing buildings used for wrestling rooms, gymnasiums, exercise areas, martial arts studios, and other similar purposes often use wall pads that cover more than 10 percent of the wall area. The replacement of wall pads in an average high school wrestling room can cost as much as \$30,000 to \$40,000. Foam plastic acoustic tiles are commonly used to cover the ceilings in existing buildings and are costly to replace. Adding an exception to allow up to 20 percent of wall or ceiling areas in existing buildings to be covered with fixed or movable walls and partitions, paneling, wall pads and crash pads is reasonable because of the cost of compliance for an existing building that was constructed to the requirements of a previous edition of the code. The requirement that the room or space with fixed or movable walls and partitions, paneling, wall pads and crash pads be protected by an automatic sprinkler system is reasonable because the additional combustible material may pose a hazard to life and safety during a fire and an automatic sprinkler system will ensure occupant safety.

1305.0901 SECTION 901, GENERAL.

IBC [F] section 901.6.3 Fire alarm systems. This rule part is amended by changing the reference section to match the corresponding reference section changed in the model code from 901.6.2 to 901.6.3.

1305.0903 SECTION 903, AUTOMATIC SPRINKLER SYSTEMS.

Subp. 1a. IBC [F] section 903.2.3, Group E. This proposed language is the same as the 2018 IBC, with three differences. Items two and three have been modified to add the word “Whenever” at the beginning. This is for clarification only, and does not change the meaning.

Also, the exception to item 2 is modified to clarify that the exterior exit door must discharge at a “*level of exit discharge*,” a defined term, rather than the less clear “ground level.” The change is necessary in order to avoid confusion or misinterpretation of the undefined term “ground level.” The change is reasonable because the change is consistent with other similar exiting requirements such as for I-4 day care found in section 903.2.6, Exceptions 2 and 3.

Subp. 1b. IBC [F] section 903.2.8, Group R. Subpart 1a in the current rule is renumbered subpart 1b to maintain the numerical order of the sections being amended. In subpart 1b, IBC section 903.2.8 is amended to coordinate with the Minnesota State Fire Code. The sentence in the current rule indicating that firewalls, party walls, or attached multiple fire-resistive exterior walls only create separate buildings where providing separation from occupancies other than Group R is proposed for deletion. This change is necessary because the current language forces sprinkler requirements for residential uses across property lines. Furthermore, the purpose of fire walls is to create separate buildings to contain and limit the spread of fire to compartments. The change is reasonable because the model code generally allows creating fire compartments as a passive design method to prevent the spread of fire as an alternative to installing automatic sprinkler systems throughout. The passive fire control technique is no less valid for residential occupancies than for other uses.

Exception 1 has been rephrased to avoid the ambiguity of the phrase “combined fire areas.” Exception 2 has been modified to clarify that the exception is not applicable if DHS licensing requirements mandate a sprinkler system; such a system would be mandated by DHS in day care uses.

IBC [F] section 903.2.8.1, Group R-3. This subsection is reformatted to be exclusive to Group R-3 and clarifies that an NFPA 13, 13R or 13D automatic sprinkler system is acceptable in this occupancy. The change is necessary to separately clarify differing requirements for R-4 occupancies because the model code added Condition 1 and Condition 2 sub-categories under the R-4 occupancy group and the conditions have different sprinkler requirements. Also, the current rule requires that the sprinkler system comply with section 903.3.1.3. Those requirements are less onerous than the requirements of either section 903.3.1.2 or 903.3.1.1. It is reasonable that, if the less onerous requirements are acceptable, the sprinkler systems that comply with more stringent requirements (903.3.1.2 or 903.3.1.1) should also be acceptable.

IBC [F] section 903.2.8.2, Group R-4. The current subsection specific to State Licensed Facilities (subsection 903.2.8.2 in the current rule) is renumbered to 903.2.8.3. A new subsection 903.2.8.2 is added to be exclusive to Group R-4 and to clarify that an NFPA 13 or 13R automatic sprinkler system is acceptable in this occupancy. There is also an added exception for newly created Condition 1 which allows use of an NFPA 13D automatic sprinkler system. Since R-4, Condition 1 has an exception to allow the NFPA 13D, then the only remaining occupancy in the R-4 category is R-4, Condition 2, which serves some people not capable of self-preservation. The higher level of sprinkler protection afforded by the NFPA 13 and the NFPA 13R systems is required because this vulnerable group needs more protection.

IBC [F] section 903.2.8.3, State licensed facilities. This subsection is renumbered from 903.2.8.2 to 903.2.8.3.

IBC [F] section 903.2.8.4, Residential hospice facilities. This subsection is renumbered from 903.2.8.3 to 903.2.8.4. This section overwrites the model code section pertaining to care facilities which is covered by amended section 903.2.8.3. The proposed amendments to the exception are for clarity, with no substantive change.

Subp. 1c. IBC [F] section 903.2.9, Group S-1. This proposed language is identical to IBC section 903.2.9 except that item 5 is deleted. Item 5 addresses Group S-1 occupancies that are used to store upholstered furniture and mattresses. This situation is addressed in a separate sub-section, 903.2.9.3. The last sentence clarifies that subsections 903.2.9.1 and 903.2.9.2 are not modified.

903.2.9.3 Group S-1 upholstered furniture and mattresses. Section 903.2.9, item 5, of the 2018 IBC requires an automatic sprinkler system if the following condition exists: “A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).” Instead of incorporating item 5, the proposed rule adds section 903.2.9.3. The first sentence of the proposed section is comparable to item 5. The exception is added to provide a code compliance path that does not require the sprinkling of one- or two-story self-storage facilities when every space has direct access to the building exterior. Minnesota has many existing one-story self-storage facilities where each compartment has direct access to the exterior. Adding the requirement to sprinkle these types of facilities would add substantial cost to their construction. These buildings have not proven to represent a significant hazard when constructed without sprinkler systems and it is reasonable to allow the practice to continue.

Subp. 1d. IBC [F] section 903.2.11.4. The reference to the International Mechanical Code is changed to Minnesota Rules chapter 1346 because that chapter adopts and amends the International Mechanical Code. The other amendments to the first sentence of section 903.2.11.4 are for clarity. The amendment to the second sentence is necessary to eliminate an ambiguity in the current rule. Specifically, the current rule is ambiguous regarding whether there is a choice to prevent water accumulation in the duct or design the duct to not flow water back to equipment. The amendment clarifies that water is not allowed to accumulate within the duct, and water flow back to equipment is only prohibited if it would result in a hazardous condition. The change is reasonable because the current fire code contains this requirement, which is more restrictive than the current building code. *See* part 7511.0903, subp. 2. The change is also reasonable because ductwork support is not designed to sustain the weight of water filling the ductwork and to do so would add significant cost to the construction. The change may result in fewer final field modifications of ductwork to comply with the fire code and to that end, save construction costs.

Subp. 2b. IBC [F] section 903.3.1.1.1. The phrase “required to have NFPA 13 systems” is added for clarification and as a convenient cross-reference. The other minor amendments are for clarity, and for consistency with the way in which this subpart has been interpreted.

Subp. 2c. IBC [F] section 903.3.1.2.1. This proposed language is almost identical to the current Minnesota State Fire Code, part 7511.0903, subp. 3, which amends section 903.3.1.2.1 of the 2012 IFC. The only change is that “Group R-1 and R-2” is changed to “Group R-1 or R-2.” This same amendment is being proposed for chapter 7511 as a clarification consistent with the intent of the rule. This subpart is needed and reasonable for consistency with the Minnesota State Fire Code.

Subp. 3a. IBC [F] section 903.3.1.3, NFPA 13D sprinkler systems. This subpart is amended by adding language specific to Group R-4, Condition 1. The change is necessary to address the newly created Condition 1 in the 2018 IBC and clarify that NFPA 13D sprinkler systems are not permissible in Group R-4, Condition 2 uses.

Subp. 5a. IBC [F] section 903.3.1.6, Modification to sprinkler standards. Subsection 903.3.1.6.2 is added, with an exception. Also, subsection 903.3.1.6.4 is amended to include a reference to section 23.2.1.1 of NFPA 13. The language of section 23.2.1.1 is also added. With two minor differences, these amendments make section 903.3.1.6 identical to the current Minnesota State Fire Code, part 7511.0903, subp. 4, which amends section 903.3.1.6 of the 2012 IFC. One minor difference is the substitution of “that” for the word “and” in the exception to subsection 903.3.1.6.2. This change is made for clarity. Also, the NFPA section was renumbered from 22.2.1.1 to 23.2.1.1. Amendments are being proposed to the Minnesota State Fire Code, with these same corrections. The amendments to this subpart are needed and reasonable for consistency with the Minnesota State Fire Code.

Subp. 6a. IBC [F] section 903.3.9, Sprinkler system design pressure safety margin. The section number is changed for consistency with the 2018 IBC. Also, an exception is added. This exception is identical to an exception in the current Minnesota State Fire Code. *See* Minn. R. 7511.0903, subp. 4a (2017). The same exception is needed in chapter 1305 for consistency.

Subp. 7a. IBC [F] section 903.4.2 Alarms. IBC [F] section 903.4.2 is amended to include visible alarms and to require that a visible alarm be located above the building exterior fire department connection to draw immediate attention to its location. The addition of the visual alarm is consistent with current industry practice and is necessary to enhance and facilitate firefighter response. Audible devices work well when firefighters are outside their vehicle, but visible devices can be seen as fire department personnel arrive on scene directing the vehicle towards the fire department connection. With sirens operating, firefighters are required to wear hearing protection and won't hear the audible alarm sounding. There will be minimal cost for adding one visible alarm or a device that includes both a visible and audible alarm. There is an approximate \$20 difference between an audible-only device and a combination audible/visual device.

1305.0904 SECTION 904, ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS.

This proposed amendment modifies the model code by using the phrase “congregate living facilities” instead of “college dormitories.” This change is needed because the proposed amendment to section 420.10 addresses cooking appliances for all Group R-2 congregate living facilities, not just college dormitories.

1305.0905 SECTION 905, STANDPIPE SYSTEMS.

Standpipes are water supply systems typically installed in tall or large buildings. The purpose of standpipes is to provide a fixed water supply and a hose connection inside the buildings so that fire personnel do not have to advance hose lines from firetrucks to the building

interior and up multiple stories. Most fire engines carry a limited amount of fire hose and typically not enough to be able to stretch up multiple stories in a building.

Subpart 1. IBC [F] Section 905.2.1, Modifications to standards. The intent of this subpart in the current rule was to not require standpipe pressure and flow requirements in fully sprinklered, non-high-rise buildings.¹⁴

The current subpart states, in part: “a Class I or III standpipe system need only meet the pressure requirements for the sprinkler system when such systems comply with Sections 905.2.1.1 through 905.2.1.5.”

Contrary to intent, this is being interpreted as requiring NFPA 14 standpipe flow, pressure and pipe size criteria due to the reference to Sections 905.2.1.2, 905.2.1.3 and 905.2.1.4. This is resulting in an increase of pipe sizing (e.g. 4-inch increased to 6-inch) for all or portions of the supply piping. Again, this is contrary to intent. The revisions to the first paragraph of section 905.2.1 clarify the intent of the section.

Furthermore, the deletion of Class III in the introductory paragraph is needed because Class III standpipes are being eliminated. See the discussion in connection with the definition of Classes of Standpipe Systems, proposed part 1305.0202, subp. 1.

Current section 905.2.1.1, Municipal water supply. The language of the current subsection 905.2.1.1 relates to municipal water supplies. This language is being deleted and replaced in the new subsection 905.2.1.2.

Proposed section 905.2.1.1, System pipe size. Current section 905.2.1.2 is renumbered as 905.2.1.1. The first two sentences of the current subsection 905.2.1.2 are deleted because those concern pressure, flow and testing. Those requirements are addressed in the new subsection 905.2.1.2. The third sentence of the current subsection 905.2.1.2 is amended to refer to combined standpipe systems. The current rule language implies, but does not specifically identify, that this amendment is applicable to **combined** standpipe systems. The 2016 edition of NFPA 14, *Installation of Standpipe and Hose Systems*, Section 3.3.17.3, includes the following definition: “**Combined System.** A standpipe system that supplies both hose connections and automatic sprinklers.” Adding the word “combined” in the proposed subsection 905.2.1.1 clarifies the type of system the amendment applies to. The 2016 edition of NFPA 14 is one of the referenced standards in chapter 35 of the 2018 IBC and, as such, is incorporated by reference under proposed part 1305.0011, subp. 1. Also, the NFPA 14 installation standard is required in the introductory paragraph of section 905.2 of the 2018 IBC, which is not being amended.

Finally, the language, “Pipe sizes ... shall be not be less than four inches (101.6 mm)” in Section 905.2.1.1 mirrors the minimum pipe sizing in NFPA 14, Section 7.6.2.1, which states: “Where the building is protected throughout by an approved automatic sprinkler system in accordance with NFPA 13 or NFPA 13R, the minimum standpipe size shall be 4 in. for systems hydraulically designed in accordance with 7.8.1.” However, since the Section 7.6.2.1 language refers to “hydraulically designed in accordance with 7.8.1” and the amendment does not require

¹⁴ See pages 15-16 of the Statement of Need and Reasonableness dated 9/18/06, for the amendments to chapter 1305 that became effective in 2007. <https://www.leg.state.mn.us/archive/sonar/SONAR-03551.pdf>.

hydraulic design of the standpipe, minimum standpipe size language should be included in the amendment. This would assure a minimum standpipe size of four inches on the occasion that the hydraulic calculations for the sprinkler system would be satisfied with pipe size less than four inches.

905.2.1.2, System design flow and pressure. As described above, this subsection is being added as a replacement for the current subsection 905.2.1.1. The proposed subsection 905.2.1.2 is a subsection of 905.2.1, which modifies the installation standard (NFPA 14). When compared with current section 905.2.1.1, proposed section 905.2.1.2 provides for greater design flexibility with respect to the municipal water supply and redirects requirements to final results.

NFPA 14 is based on hydraulic calculations for systems having two or more standpipes, and therefore could require a flow rate in excess of 500 gallons per minute (gpm). This proposed subsection relaxes this requirement for fully sprinklered buildings and instead sets a minimum flow rate of 250 gpm at the two most hydraulically remote hose connections (500 gpm total). This acknowledges that higher flow rates are not necessary in a fully sprinkler-protected building. Higher flow rates will often require the costly installation of a fire pump, and the requirements are relaxed in order to avoid this.

The minimum pressure of 100 psi is reasonable because this is the minimum pressure allowed in NFPA 14 (Section 7.8.1). The minimum flow rate of 250 gpm at the two most hydraulically remote hose connections (for a total of 500 gpm) is reasonable because this is the minimum flow rate set by NFPA 14 (Section 7.10.1.1.1).

Current section 905.2.1.4, Hose connection. This language is being deleted because it is redundant; this language mirrors the language in NFPA 14, Sections 7.12.3 and 6.4.5.

Proposed 905.2.1.4, Automatic sprinkler system demand. Current section 905.2.1.5 is renumbered as 905.2.1.4. This language is being amended to clarify that the municipal water supply system is responsible for both the inside and outside hose stream demands. This was an oversight in the current code. Both inside and outside hose stream demands should have been included in the current code. NFPA 13 has requirements for both inside and outside hose stream demands.

Subp. 1a. IBC [F] section 905.3, Required installations. This new subpart modifies model code section 905.3 to expand the scoping through 905.3.10 because of reformatting within the model code. The rest of the language is the same as the 2018 IBC.

Subp. 1b. IBC [F] section 905.3.1, Height. Section 905.3.1 is modified to indicate Class I standpipes since Class III standpipes are eliminated. Separate and apart from this classification system, the installation standard (NFPA 14) defines whether a standpipe is wet, dry, automatic or manual. The word “wet” is added to section 905.3.1 for clarification, because the intent of the section is to require a wet standpipe by default. The first six exceptions in the model code are deleted because they pertain to allowing Class I standpipes under given conditions; these are no longer needed since the amended 905.3.1 would already allow Class I standpipes. The seventh exception in the model code has been redrafted into subsection 905.3.1.1 (see below). The proposed rule’s exception is a new exception. This exception is needed and reasonable because it

will prevent a wet standpipe system from being subjected to freezing temperatures that might damage it and put the system out of service.

IBC [F] section 905.3.1.1, Lowest level. This is a slightly revised version of exception 7 to IBC section 905.3.1. The first sentence has been rephrased for clarity. The word “areas” has been substituted for the IBC word “conditions” because it is more accurate to describe the fire department vehicle having difficulty accessing the building in certain areas.

Subp. 2. IBC [F] section 905.3.2.1, Group A exhibition. This subpart is modified to reflect the elimination of Class III standpipes from this code.

Subp. 3. IBC [F] section 905.3.4, Stages. This subpart is amended to clarify that standpipes are not required for stage areas. Some jurisdictions have interpreted the current rule as meaning that, since the Class III standpipe requirement was deleted, this meant that Class I standpipes were required. This was never the Department’s intent. The proposed amendment alleviates the confusion. Because standpipes are not required for stage areas, subsection 905.3.4.1 also needs to be deleted.

Subp. 4a. IBC [F] section 905.3.6, Helistops and heliports. This model code section is modified to eliminate the option for Class III standpipes, and substitute Class I standpipes instead. See the discussion in connection with the definition of Classes of Standpipe Systems, proposed part 1305.0202, subp. 1.

Subp. 6. IBC [F] section 905.3.9, Detention and correctional facilities. This section is modified to eliminate the option for Class III standpipes, and substitute Class I standpipes instead. This is needed and reasonable for the same reasons that Class III is proposed to be deleted from section 905.2.1 (as described above).

Subp. 6a. IBC [F] section 905.3.10, Group R-2 occupancies small hose connections. This subpart is amended by spelling out “fire department” instead of using the undefined acronym “FD.” This is for clarity.

Subp. 8. IBC [F] section 905.6, Location of Class III standpipe hose connections. This section and the subsections are deleted because Class III standpipes are eliminated from the Minnesota Building Code. See the discussion in connection with the definition of Classes of Standpipe Systems, proposed part 1305.0202, subp. 1.

1305.0907 SECTION 907, FIRE ALARM AND DETECTION SYSTEMS.

Subp. 1a. IBC [F] section 907.1.2, Fire alarm shop drawings. . Section 907.1.2 is amended to delete the reference to NFPA 72, which provides requirements for shop drawings. The proposed rule instead provides the list of requirements right in the code. This is needed and reasonable because not all designers and code officials have direct access to NFPA 72. Inclusion in the building code will therefore enhance compliance and field coordination.

Section 907.1.2 is also amended to include language from section 907.1.2 of the 2015 IBC that clearly delineated which particular shop drawing documents are required for a complete

plan review. It is reasonable to include an itemized list for the convenience of the designers to ensure a comprehensive submittal for plan review and permitting purposes.

Subp. 1b. IBC [F] section 907.2, Where required in new buildings and occupancies. Current subpart 1a is renumbered 1b to maintain the numerical order of the sections being amended. The section reference numbers are changed to coordinate with the reformatting of the 2018 IBC. The title of this section is changed for consistency with the Minnesota State Fire Code, part 7511.0907, subp. 2. There are no technical changes.

Subp. 2a. IBC [F] section 907.2.1, Group A, General. The last sentence of item 4 has been deleted for clarity, because it is not necessary. There is no technical change.

Subp. 11. IBC [F] section 907.2.3.1, Initiation. The word “janitors” is updated to “custodial,” which is the preferred term now used in the industry. The section is also amended so that exception 1 is expanded to include a fire alarm system and only require manual boxes in the main office and a custodial area. Exception 1 will not be numbered to be consistent with model code formatting because exception 2 is deleted. Exception 2 is deleted because exception 1 as modified now incorporates exception 2 with less restrictive criteria. The change was made to make alarm systems more secure against live-shooter activation by providing fewer manual pull stations in publicly accessible areas. Automatic activation of the alarm systems is much more prevalent than in the past, making manual pull stations less critical. This proposed change will allow the vast majority of schools to remove most of their common-use manual fire alarm boxes (a.k.a. pull stations) in order to reduce the possibility of an active shooter initiating a fire alarm evacuation signal in order to draw occupants out into common areas. Due to the recent mass shooting event in Parkland, Florida, the State Fire Marshal Division and local fire code officials have received numerous inquiries from schools about removing their fire alarm pull stations. Reduction of publicly accessible manual pull stations also reduces the overall hazard by reducing alarm fatigue in the form of nuisance alarms and false alarms.

Group E shops, labs, kitchens and boiler rooms will either have sprinkler protection or fire alarm system detection; pull stations in these areas are not essential. Either sprinkler heads or detection devices will eventually activate and initiate the fire alarm evacuation signal. Group E schools are also controlled and supervised environments, and all Group E emergency plans require staff to immediately notify administration of an unwanted fire. In this case, due to the negligible benefit pull stations provide for these areas, removing these devices in deference to security concerns is warranted.

The code change will result in a reduction in construction costs.

Subp. 13. IBC [F] section 907.2.3.3, Notification. The section is amended to provide more specific direction as to requirements by adding references to Sections 907.5.2.2 and 907.6, requiring both visible and audible/voice alarm communications rather than just a general audible alarm.

The 2018 IBC includes the requirement for an emergency voice/alarm communications system. Such systems are critical in Group E occupancies because schools greatly benefit from the ability to communicate detailed instructions to occupants during any type of emergency such

as fire, lockdown, tornado, etc. In essence, the fire alarm system functions as a complete all-hazard emergency communications system. Such systems also allow schools to safely implement a delayed or defend-in-place response to fire alarm activations, allowing staff to investigate the source of an alarm and ensure there is no intruder or active shooter threat.

An exception is added so that E occupancies with less than 100 occupants need not provide both components of the emergency voice/alarm communication system. This is comparable to section 907.2.3, exception 2, of the 2018 IBC. It is reasonable to exempt schools with an occupant load of 100 or less because these are small schools where there is a general awareness of the reason for the general evacuation signal, such as the presence of smoke.

The addition of an emergency voice/alarm communication system is estimated to add, on average, an additional 20-percent to the cost of a fire alarm system in a Group E occupancy. General fire alarm system installation for new school construction is estimated to be up to \$0.75/square foot. The average size of a school building in Minnesota is approximately 100,000 square feet. Thus, as an example, a fire alarm system installed in a new 100,000 square foot school building would cost approximately \$75,000. Including a voice/alarm communications system would increase the cost by approximately 20-percent, resulting in an additional cost of \$15,000. This section only applies to new construction or a change in use, and thus would not apply to existing Group E occupancies.

Subp. 17. IBC [F] section 907.2.5, Group H, general. The only change to this subpart is changing “IFC” to “Minnesota State Fire Code.” This is reasonable because the Minnesota State Fire Code is applicable in Minnesota.

Subp. 18. IBC [F] section 907.2.5.1, Initiation. The only change to this subpart is changing “2012 IFC” to “Minnesota State Fire Code.” This is reasonable because the Minnesota State Fire Code is applicable in Minnesota. Also, the proposed amendments to chapter 7511 adopt the 2018 IFC, not the 2012 IFC.

Subp. 22. IBC [F] Section 907.2.6, Group I, general. There are several reference number changes due to reformatting of the 2018 IBC. Also, in several places the phrase “janitors’ closets” has been changed to “custodial closets.” “Custodial” is an updated term that is used in the industry. References to “janitors” were previously changed to “custodial” in the Minnesota State Fire Code; updating the term in chapter 1305 is therefore reasonable for consistency with the fire code.

Subp. 25. IBC [F] section 907.2.8, Group R-1, general. A few references in this subpart are being changed due to reformatting of the 2018 IBC. In exception 2, the phrase “smoke detectors” has been changed to “smoke alarms.” This is needed for consistency with the fire code. *See* current rule 7511.0907, subp. 10. Also, several locations have been added to the list of locations where approved automatic fire detectors are needed under subsection 907.2.8.1. The new locations (soiled linen rooms, kitchens, custodial closets, and lounges) are all potentially hazardous areas because of the nature of the use. For example, soiled linen rooms and custodial closets contain potentially flammable materials. Cooking appliances in kitchens make them hazardous. Lounges are included because they can be used by a large number of people.

Subp. 26. IBC [F] section 907.2.9, Groups R-2 and R-4, general. Reformatting in the model code precipitated the need to consolidate requirements specific to R-4 occupancies into this subpart. The section and subsections are renumbered to follow the modified format of the model code. The substantive requirements for R-2 occupancies have not changed. The section is expanded to include R-4 occupancies within the scoping.

In subsection 907.2.9.1, item 1 has been changed to require a fire alarm system in Group R-2 occupancies where any sleeping or dwelling unit is located two more stories above the lowest level of exist discharge, rather than three or more stories. This is for consistency with the current Minnesota State Fire Code, part 7511.0907, subp. 11, item 1 under current section 907.2.9. The proposed amendments to the fire code renumber this subsection as 907.2.9.1, but do not change item 1.

In subsection 907.2.9.1.1, several locations have been added to the list of locations where automatic fire detectors are needed. The new locations (common kitchens, locker rooms and lounges) are all potentially hazardous areas because of the nature of the use. For example, cooking appliances in common kitchens make them hazardous. Locker rooms and lounges are included because they can be used by a large number of people.

The amended requirements for R-4 occupancies previously located in 907.2.10 are relocated into this section and renumbered as 907.2.9.2 and its subsections. (The language regarding IBC section 907.2.10 is currently located in rule 1305.0907, subpart 26b.) Code reference citations within the body of the subsections are renumbered to correspond with formatting changes in the model code. Minor wording changes in the revised exceptions to section 907.2.9.2 are for clarity.

In 907.2.9.2.1, several locations have been added to the list of locations where automatic fire detectors are needed. The new locations (soiled linen rooms, common kitchens and lounges) are all potentially hazardous areas because of the nature of the use. For example, soiled linen rooms contain potentially flammable materials. Cooking appliances in kitchens make them hazardous. Lounges are included because they can be used by a large number of people.

The word “multistation” in section 907.2.9.3 has been changed to “multiple-station” for clarification.

Subp. 26b. IBC [F] section 907.2.10. Repeal. As previously discussed, the amended requirements for R-4 occupancies were previously located in 907.2.10, current part 1305.0907, subp. 26b. Those requirements have been renumbered as 907.2.9.2 and its subsections, in proposed rule 1305.0907, subp. 26. Therefore, current subpart 26b is no longer needed and can be repealed.

Subp. 27. IBC [F] section 907.2.11.4, Power source. Repeal. This subpart is repealed. The requirements listed in this subpart are now obsolete due to advances in smoke alarm technology and changes in the model codes regarding smoke alarm design and function. At the time of adoption of the current rule, there were very few hard wired smoke alarms with battery back-up. It is now commonplace that hardwired smoke alarms come with battery back-up. Repealing subpart 27 will also delete the exceptions which allow dwelling units and sleeping

units in R-1 and R-2 occupancies to have hard wired smoke alarms without battery backup. It is during power outages that the need for battery operated smoke alarms is highest because people use candles and fueled space heaters which increase the fire risk. The cost differential between the smoke alarms with or without battery back-up is negligible.

Subparts 27b and 27c. IBC [F] section 907.2.22, Battery rooms, and Table 907.2.22.

The model code is modified to add section 907.2.22 and Table 907.2.22. Both section 907.2.22 and Table 907.2.22 are being proposed for consistency with the Minnesota State Fire Code. Section 907.2.22 of the 2018 IFC states: “An automatic smoke detection system shall be installed in areas containing stationary storage battery systems as required in Section 1206.2.” Section 1206.2 of the 2018 IFC states: “Stationary storage battery systems having capacities exceeding the values shown in Table 1206.2 shall comply with Section 1206.2.1 through 1206.2.12.6, as applicable.” Table 1206.2 in the 2018 IFC is identical to proposed table 907.2.22 in proposed subdivision 27c of part 1305.0907. Minnesota is proposing to adopt 2018 IFC sections 907.2.22, 1206.2 and its subsections, and Table 1206.2 without amendment.

Energy storage is a developing technology. The 2018 IFC requirements for stationary storage battery systems are new requirements to add safeguards to battery storage systems, which are becoming more common. Proposed subparts 27b and 27c of 1305.0907 include the same requirements as the requirements being incorporated into the fire code. Including these requirements in the building code to show battery capacity limits will increase the likelihood of compliance due to convenience and does not change the fire code requirements.

Subp.27d. IBC [F] section 907.2.23, Capacitor energy storage systems. The model code is modified to add the requirements referred to in the fire code so that capacitor limits are also included in the building code. These fire code requirements are being proposed for incorporation into the Minnesota State Fire Code, without amendment. *See* 2018 IFC section 1206.3. Energy storage is a developing technology. The 2018 IFC requirements for capacitor energy storage systems are new requirements to add safeguards to capacitor energy storage systems, which are becoming more common. Including these requirements in the building code will increase the likelihood of compliance due to convenience and does not change the code requirement.

Subp. 28. IBC [F] section 907.2.24, Residential hospices. The first sentence of section 907.2.24 is amended to clarify that both sections 907.2.24.1 and 907.2.24.2 apply to residential hospices. In subsection 907.2.24.1, the proposed rule changes “janitors’ closets” to “custodial closets.” “Custodial” is an updated term that is used in the industry. References to “janitors” were previously changed to “custodial” in the Minnesota State Fire Code; updating the term in chapter 1305 is therefore reasonable for consistency with the fire code. The cross reference in the exception to subsection 907.2.24.1 is amended for consistency with the renumbering of the model code.

Subp. 31. IBC [F] section 907.3, Fire safety functions. The first sentence of section 907.3 is amended to clarify that the reference to section 907.2 is to the Minnesota Building Code. Also, the reference to the IFC is changed to the Minnesota State Fire Code because that applies in Minnesota. Finally, the sentence “Subsection 907.3.4 remains unchanged” has been added to the end. This is for clarification only.

Subp. 31a. IBC [F] section 907.6.5. Repeal. This subpart is being repealed. Section 907.6.5 of the 2012 IBC concerned monitoring. The monitoring provisions have been moved to section 907.6.6 of the 2018 IBC, and are addressed in proposed new subpart 32a.

Subp. 31b. IBC [F] section 907.5.2.1.2, Maximum sound pressure. The proposed new language relates to maximum sound pressure. Beginning with the second sentence, this section is identical to section 907.5.2.1.2 of the model code. The first sentence has been added to require lower maximum sound pressures in quieter ambient environments. The model code introduced the new section 907.5.2.1.1, “average sound pressure,” which specifies the maximum average sound pressure. If the overall maximum sound pressure is set at 110 decibels (dB) (which is the threshold for pain), then the minimum sound pressure to balance the average may not be sufficient in some cases to alert occupants of an alarm condition. The amendment to the first sentence is necessary to establish a more even sound pressure throughout quieter environments so that sound pressures can be reduced under alarm conditions.

Fire alarm designers consistently design fire alarm systems to exceedingly high levels to ensure the fire alarm can be heard in all areas. However, this often leads to complaints by building occupants due to painfully high noise levels when the fire alarm activates. The intent of the code is, and always has been, that the fire alarm be designed at 15 decibels above the ambient sound pressure level (as stated in section 907.5.2.1.1) and not be excessively loud to the point where it physically hurts people’s ears when exposed to the fire alarm audible appliances. This proposal establishes a sound pressure cap of 35 dB above the average or peak ambient sound level, to ensure that alarms are not excessively loud but can still be heard above the ambient sound levels for the designed space. This code change is reasonable because it establishes a cap that fire alarm designers must adhere to when designing fire alarm systems to ensure audibility levels are not excessive. As an example, school classrooms are assigned an ambient sound pressure of 45 dB. The model code requires a minimum of 15 dB above the ambient sound pressure or 60 dB minimum for an alarm in that environment. The model code also requires a maximum sound pressure of 110 dB for an alarm at any location. The amendment will fit within the model code minimum and maximum, and will limit the average sound pressure to 45 dB + 35 dB or 80 dB so that the systems are not so startlingly and painfully loud when they need not be so. Overly loud alarms can contribute to confusion, fear, and can inhibit critical communication and evacuation during emergency conditions. A human voice shouting is approximately 88 dB and a chainsaw is approximately 90 dB as points of comparison. The selection of 35 dB above the average or peak ambient sound level as the maximum is reasonable so that, for example, in school environments, a teacher’s shouted instructions to the students (at 88 dB) could be heard above the alarm (80 dB).

Subpart 32a. IBC [F] section 907.6.6, Monitoring. Section 907.6.5 in current chapter 1305 and 7511 has been renumbered 907.6.6 in the updated model codes. The current rule in the Minnesota Building Code regarding monitoring is 1305.0907, subpart 31a, which states: “IBC [F] section 907.6.5 and its subsections are deleted in their entirety.” This differs from the current rule in the fire code (7511.0907, subp. 15b) which states: “IFC section 907.6.5 is deleted.” This was an error in the building code, as explained below.

The intent of the current rule in the fire code was to delete section 907.6.5 and its exceptions, but to still leave in its subsections (907.6.5.1 and 907.6.5.2, which have been

renumbered as 907.6.6.1 and 907.6.6.2 in the 2018 IFC and IBC). The current complete Minnesota Building Code (including IBC provisions) states “deleted” for section 907.6.5 and does not include subsections 907.6.5.1 and 907.6.5.2.¹⁵ On the other hand, the current complete Minnesota State Fire Code (including IFC provisions) states “deleted” for section 907.6.5 but does include subsections 907.6.5.1 and 907.6.5.2.¹⁶ This understandably causes confusion. Proposed subpart 32a therefore amends model code section 907.6.6 to include one sentence referring to the two subsections. This change corrects the error in the building code and is consistent with the intent of the current fire code. The exceptions are still deleted, as in the current rule. A comparable amendment is being proposed to the fire code.

The sentence “Subsections 907.6.6.1 and 907.6.6.2 remain unchanged” is added for clarification.

1305.0908 SECTION 908, EMERGENCY ALARM SYSTEMS. Repeal.

IBC [F] section 908.7, Carbon monoxide alarms. Repeal. This part is being repealed because the 2018 IBC addresses the topic of carbon monoxide detection in section 915. As discussed below, a new part 1305.0915 is proposed, which amends the new model code language.

1305.0909 SECTION 909 SMOKE CONTROL SYSTEMS.

Subp. 1c. IBC [F] section 909.4.8, Door opening force. This existing subpart is amended to renumber the subsection due to the addition of a subsection in the model code. A code section citation within the subsection is also renumbered to correspond to model code modifications.

Subp. 1d. IBC [F] section 909.22, High-rise and covered mall smoke-exhaust systems. This subpart is added to coordinate with and include the same language found in the Minnesota State Fire Code. The requirement is in the current fire code. *See* Minn. R. 7511.0909, subp. 2 (amending section 909.21 of the 2012 IFC). Inclusion into the building code will ensure that designers don’t overlook the requirement.

1305.0910 SECTION 910, SMOKE AND HEAT REMOVAL.

Subpart 1. IBC [F] section 910.1.1, Required venting method. This section is amended to correct a spelling error.

Subp. 2. IBC [F] section 910.4, Mechanical smoke exhaust. This subpart is amended to correct a cross-reference in the current code. Also, a sentence is added at the end for clarification.

Subp. 2a. IBC [F] section 910.4.3.1, Supply Air. This subpart is amended to reflect numbering changes in the model code. This is relocated from subpart 4 to maintain numerical order consistent with the renumbering of the model code sections.

¹⁵ <https://codes.iccsafe.org/content/MBC2015/chapter-9-fire-protection-systems>

¹⁶ <https://codes.iccsafe.org/content/MFC2015/chapter-9-fire-protection-systems>

Subp. 3. IBC [F] section 910.4.4, Operation. This subpart is amended to reflect the renumbering of sections within the model code, and to eliminate the redundant words “in addition.”

Subp. 5. IBC [F] section 910.5, Calculated engineering design of mechanical smoke exhaust. The first sentence of subpart 5 is amended because the 2018 IBC has a section 910.5, which is being replaced. (Section 910.5 of the 2018 IBC concerns maintenance, which is addressed in subpart 6 below.) Subsection 910.5.5 is amended to reference both subsections 910.4.5 and 910.4.6 in the requirements for wiring and controls. This is reasonable because subsection 910.4.5 addresses manual controls while subsection 910.4.6 addresses wiring. Also, in subsection 910.5.5 the term “interlocks” has been changed to “interlock controls.” This is for clarification, because the term used in the industry is interlock controls.

Subp. 6. IBC [F] section 910.6, Testing and maintenance. This new subpart modifies the current rule by creating a separate subpart for section 910.6. Also, the reference in section 910.6.1 is clarified. No substantive changes are made to the language in section 910.6.

1305.0915 SECTION 915, CARBON MONOXIDE DETECTION.

This new rule part addresses modifications to the IBC requirements for carbon monoxide alarms in new buildings. These changes are necessary to avoid conflict with Minnesota Statutes sections 299F.50-51, which regulate CO alarms in single family and multifamily dwellings. Also, these changes are needed for consistency with the scope of the Minnesota Building Code.

Subpart 1. IBC section 915.1, General. The first sentence of proposed section 915.1 is identical to the first sentence of section 915.1 of the 2018 IBC. The second sentence in the 2018 IBC has been deleted because it relates to existing buildings. Requirements for existing buildings are beyond the scope of chapter 1305, and are found in Minnesota Rules chapter 1311. The first sentence of proposed subsection 915.1.1 is identical to subsection 915.1.1 of the 2018 IBC. The proposed rules adds an exception. This exception is needed and reasonable because it incorporates the requirements in Minnesota Statutes section 299F.51, subd. 5(a) for localized detection and centralized alarm systems for multi-family buildings with a centralized carbon-monoxide producing fixture. A sentence is added at the end of subsection 915.1.1 to clarify that model code sections 915.1.2 through 915.1.6 are not amended.

Subp. 2. IBC section 915.2, Locations. The first sentence of proposed section 915.2 is identical to the model code. In both subsection 915.2.1, “Dwelling units” and subsection 915.2.2, “Sleeping units,” the IBC requires carbon monoxide detectors to be located “in the immediate vicinity” of the bedrooms or sleeping units. The proposed rule deletes this vague language and replaces it with specific language, “within 10 feet.” This is the consistent with Minnesota Statutes section 299F.51, subd. 2(1), which requires the owner of each multifamily dwelling to “provide and install one approved and operational carbon monoxide alarm within ten feet of each room lawfully used for sleeping.” Proposed subsection 915.2.1 also adds language requiring a carbon monoxide detector within a bedroom if a fuel-burning appliance is located within the bedroom or its attached bathroom. This is needed for safety because of the increased risk of fire when there is a fuel-burning appliance. This is comparable to the requirement in subsection 915.2.2 and its exception which, when read together, require a carbon monoxide detector in a

sleeping unit where the unit or its attached bathroom has a fuel burning appliance and is not served by a forced air furnace. Section 915.2.2 of the model code, with its exception, contains a comparable requirement. A sentence is added at the end of proposed subsection 915.2.2 to clarify that model code section 915.2.3 is not amended.

[Note: Current part 1305.0916 SECTION 916, POST FIRE EXHAUST SYSTEM is renumbered as part 1305.0919. See below.]

1305.0916 SECTION 916, GAS DETECTION SYSTEMS.

IBC section 916.2, Documentation. The first sentence of the model code section is deleted because it refers to the fire code for all of the documentation required for permits. Instead, the specific documentation requirements from the fire code are included within the building code for ease of reference. Subsection 916.2.1 is identical to the model code. Subsection 916.2.2 is added so that the fire authority is given notice when a gas detection system is proposed. Fire authorities have not had a mechanism whereby they are notified of specialized systems prior to their first inspection. This requirement will provide them with an opportunity for input prior to construction or modification.

1305.0917 SECTION 917, MASS NOTIFICATION SYSTEMS.

IBC section 917.1 College and university campuses. This section is being deleted because it concerns mass notification systems. Those systems are beyond the scope of the building code.

1305.0918 SECTION 918, EMERGENCY RESPONDER RADIO COVERAGE.

IBC section 918. This section is deleted. The section refers to the fire code for requirements and the proposed amended fire code deletes these requirements.

1305.0919 SECTION 919, POST FIRE EXHAUST SYSTEM.

IBC section 919. This part is identical to the current part 1305.0916 except for the renumbering of the rule and subsections, as required by the renumbering of the model code.

1305.1006 SECTION 1006, NUMBER OF EXITS AND EXIT ACCESS DOORWAYS.

Subpart 1. IBC Table 1006.2.1, Spaces with one exit or exit access doorway. Except as discussed below, proposed Table 1006.2.1 is identical to the 2018 IBC.

Table 1006.2.1 of the 2018 IBC includes Group I-4 occupancies in the same row with Group I-1 and I-2 occupancies. Group I-1 and I-2 occupancies must be equipped with an automatic sprinkler system but, under the Minnesota code, Group I-4 occupancies are permitted to forego an automatic sprinkler system under certain circumstances. The IBC table is therefore modified to create a new row for Group I-4 occupancies listing the maximum common path of egress travel distance for Group I-4 occupancies equipped with automatic sprinkler systems and Group I-4 occupancies not equipped with automatic sprinkler systems. The common path of egress travel is the distance an occupant must cover from the most distant point of a room or

space to an exit. For a Group I-4 occupancy, whether or not it is equipped with an automatic sprinkler system, the maximum distance permitted from the most distant part of the room or space to an exit is 75 feet. The same requirement exists in the 2012 IBC. The modifications to include Group I-4 occupancies on a separate row and to permit a maximum common path of egress travel of 75 feet in those occupancies is reasonable because it ensures that requirements are consistent with other code provisions, which will provide consistent application and uniform enforcement.

Table 1006.2.1 of the 2018 IBC is modified for Group R-1, R-2, R-3, and R-4 occupancy classifications to provide a maximum common path of egress travel distance of 75 feet for Group R-1, R-2, R-3, and R-4 occupancies that are not equipped with an automatic sprinkler system. Unlike the Minnesota code, the 2018 IBC requires sprinkler systems in all R occupancies. The table in the model code therefore does not have values for non-sprinklered residential occupancies. The proposed modification of this table carries forward the 2012 IBC requirement of a 75 foot maximum common path of egress travel distance for residential occupancies not equipped with an automatic sprinkler system.¹⁷ This will provide consistent application and uniform enforcement while maintaining current life safety requirements for residential occupancies.

Footnote (e) in Table 1006.2.1 of the 2018 IBC is deleted because it limits the maximum common path of egress travel distance for a Group R-3 occupancy only where it is located in a mixed occupancy building. A building might have a Group R-3 occupancy as the only occupancy type in the building. Because Group R-3 occupancies may be located in buildings with mixed occupancy groups or a single occupancy group, it is reasonable to delete footnote (e) so the maximum common path of egress travel distance applies to ensure the safety of occupants.

Footnotes (f) and (g) in Table 1006.2.1 of the 2018 IBC are re-lettered as footnotes (e) and (f). The new footnote (e) has been rephrased slightly for clarity, but the substance of the footnote is the same as the substance of footnote (f) in Table 1006.2.1 of the 2018 IBC.

Subp. 2. IBC section 1006.2.2.1, Boiler, incinerator, and furnace rooms. Section 1006.2.2.1 of the 2018 IBC is modified by adding a sentence at the end of the section to specify the required distance between the two means of egress in boiler, incinerator, and furnace rooms. Means of egress is the path of travel from the boiler, incinerator and furnace rooms to the public way. Boiler, incinerator, and furnace rooms are often located below ground level so stairs or a ladder are required to reach the exit and the public way. The stair or ladder is usually in the same location as the main door into the space. The stair or ladder and door are considered two separate means of egress; however, because of their proximity within the space they are effectively the same means of egress with only one path to the public way in the event of an emergency. The proposed changes will ensure that the two means of egress do not meet and there are two separate exits to the public way. It is reasonable to require two separate exits and paths to each exit in boiler, incinerator, and furnace rooms due to the hazards they pose to occupants in those rooms. In the event of an emergency, one means of egress may be obstructed by fire or debris so a second means of egress is a necessary life and safety precaution for occupants in boiler,

¹⁷ See Table 1014.3 of the 2012 Minnesota Building Code, <https://codes.iccsafe.org/content/MBC2015/chapter-10-means-of-egress>.

incinerator, and furnace rooms.

Subp. 3. IBC section 1006.2.2.4, Group E and I-4 means of egress. Section 1006.2.2.4 of the IBC refers to Group I-4 facilities rather than Group E facilities. Proposed section 1006.2.4 changes “I-4” to “E and I-4” but is otherwise identical to the model code. Under proposed section 308.5.1.3 (in proposed part 1305.0308, subp. 4), a child day care facility with 10 to 100 children age 2½ or less would be classified as Group E if each room providing day care is on the level of exit discharge and has an exit door directly to the exterior. The I-4 occupancy already requires two means of egress under the same conditions listed here for the E occupancy. The purpose of this amendment is to apply one of the I-4 requirements to day care facilities reclassified as E occupancy. This is a life and safety precaution.

Subp. 4. IBC section 1006.2.2.7, Educational occupancy laboratories and prep areas. This section has been relocated from current part 1305.1015, item 4, due to a change in the model code numbering structure. The requirement that laboratories and prep areas that are more than 500 square feet and contain hazardous chemicals have two means of egress when located in a Group E occupancy is unchanged. The language of the amendment has been revised for clarity. The language “not less than two means of egress” is added to indicate that more than two means of egress are permitted. “Prep room” is revised to “prep area” because a laboratory prep space may not necessarily be a room, which is an 80 percent enclosed area. The changes to this section are reasonable because they maintain the existing requirement but with clarifications that will result in more uniform enforcement and application of the code.

Subp. 5. IBC section 1006.3.3, Single exits. The first sentence and items two through four listed in this proposed section are identical to the 2018 IBC. Items 1 and 5 in this section are modified to add sleeping units. This would require sleeping units to comply with the same requirements as dwelling units in order for a single exit or access to a single exit to be permissible. Dwelling units have spaces intended for living, sleeping, eating, cooking and sanitation. Sleeping units must have spaces intended for sleeping and may have spaces for living or eating but can have either spaces for sanitation or kitchen facilities but not both. It is reasonable that sleeping units have the same requirements as dwelling units for a single exit or access to a single exit because sleeping units do not have any additional hazards or fire risks. Item 5.1 in the model code has been re-written to add sleeping units. Item 5.2 in the model code has been rewritten for clarity and to add sleeping units. A sentence has been added at the end of section 1006.3.3 to clarify that subsection 1006.3.3.1 remains unchanged.

1305.1009 SECTION 1009, ACCESSIBLE MEANS OF EGRESS.

The existing part 1305.1009 has been renumbered 1305.1011 because of the renumbering of the IBC. Proposed amendments to 1305.1011 are discussed below.

A new part 1305.1009 is proposed to correspond with section 1009 of the 2018 IBC. The proposed rule modifies Section 1009.1 of the 2018 IBC to add exception number 3. Exception number 3 does not require alterations or renovations to an existing building to include an accessible means of egress. An accessible means of egress is a continuous and unobstructed path of travel from any accessible point in a building to a public way. For some existing buildings, the installation of an accessible means of egress is technically infeasible because of the structural conditions of

the building or so costly as to make the renovation and reuse of an existing building cost-prohibitive. The exception to the accessible means of egress requirement exists in the 2012 IBC, Section 1007.1, Exception 1, and the 2018 edition of the International Existing Building Code (“IEBC”), Section 305.6, Exception 2. An existing building renovated using the prescriptive method of the IEBC must comply with IBC requirements with exceptions. Because some existing buildings are renovated to the requirements of the IBC, it is reasonable to include in the IBC exceptions for existing buildings from IBC requirements. Exception number 3 clarifies code requirements and allows for cost-effective renovation and reuse of existing buildings.

1305.1010 SECTION 1010, DOORS, GATES, AND TURNSTILES.

Current rule 1305.1008 is renumbered as 1305.1010, and the section reference numbers are renumbered because the corresponding sections were renumbered in the 2018 IBC. All other proposed amendments are discussed below.

Subp. 5. IBC section 1010.1.5, Floor elevation. The only amendment other than renumbering is to remove the word “Exceptions.” Because only one exception is modified and the other exceptions are not reprinted, the word “exceptions” should be deleted.

Subp. 5a. IBC section 1010.1.9.2. This exception to section 1010.1.9.2 of the 2018 IBC needs to be amended. The purpose of the exception is to allow hardware for latches in gates protecting pools, spas and hot tubs to be high (54 inches), in order to prevent young children from being able to reach the latch and access the water. The exception as written in the model code would allow these latches to have 54 inch high hardware on both sides of the gate. The proposed rule rewrites the exception to make sure that the latch is high only on the access side of the gate; the proposed rule is needed so as not to inhibit egress by all (including young children) in the event of an emergency.

Subp. 6. IBC section 1010.1.9.4, Locks and latches. The subpart is modified, items renumbered, and new items added as follows:

Items number 1, 2, 2.1, 2.2, 3, 4, and 5 are identical to the current rule.

Item number 2.3 is changed to correct the spelling of “revocable.”

Item number 6 is added to the subpart, and is identical to item 6 in the 2018 IBC.

Items number 6 and 7 of the current rule are renumbered as items 7 and 8. Also, the cross references are renumbered to reflect renumbering in the 2018 IBC. In proposed item 8, the phrase “Special locking arrangements” is replaced with “Controlled egress doors.” “Controlled egress doors” is the newer terminology used in the 2018 IBC.

Item number 8 of the current rule is renumbered to item 9. “Electromagnetic” is deleted and replaced with “electrically” to be consistent with the code language as written in sections 1010.1.9.9 and 1010.1.9.10 of the 2018 IBC. Electromagnetic locks are the most common type of electrical locks but not the only type of electric locking hardware. Other electric locks perform the same function as electromagnetic locks. Item number 8 has also been amended to refer to both sections 1010.1.9.9 and 1010.1.9.10. The current rule refers only to section 1008.1.9.9 of

the 2012 IBC because this was the only section in the 2012 IBC dealing with release of electromagnetically locked egress doors. In the 2018 IBC, there are two sections dealing with this issue: section 1010.1.9.9 concerning sensor release of electrically locked egress doors, and section 1010.1.9.10 concerning door hardware release of electrically locked egress doors. It is therefore reasonable to reference both sections of the 2018 IBC.

Item number 9 of current rule 1305.1008, subpart 6, is renumbered to item 10. The IBC section reference is renumbered because the corresponding section was renumbered in the 2018 IBC. The language is revised to clarify that the cells referred to are detention cells intended to restrict an occupant's movement for safety or security reasons. The amendment is reasonable because monastic cells are a type of cell, but occupants of monastic cells are not being restrained for safety or security reasons.

Item number 11 is new. This item is added for consistency with section 1010.1.9.12 of the 2018 IBC. Exception number 3 to that section, as amended by proposed rule 1305.1010, subp. 7a, allows exit doors in stairways serving not more than four stories to be locked, as long as the door is operable from the egress side. Item 11 in proposed rule 1305.1010, subp. 6, is needed and reasonable because this is an example of a situation where locks are permitted to prevent the operation of doors – in this case, from the side opposite the egress side.

Subp. 6a. IBC section 1010.1.9.7, Controlled egress doors in Group I-1, I-2, R-3, and R-4 occupancies. The language in this subpart is revised for consistency with the language in section 1010.1.9.7 of the 2018 IBC. The title is changed for consistency with the 2018 IBC. “Approved special door locking arrangements” is replaced with “Controlled egress door locking systems, including electromechanical locking systems and electromagnetic locking systems.” Throughout the 2018 IBC, the phrase “special locking arrangements” is replaced with the newer terminology, “controlled egress doors.” The new language providing examples of controlled egress door locking systems clarifies code requirements as to what type of locking system is permitted. Electric locking systems are installed on doors so egress from a space can be controlled. Electric locking systems and controlled egress doors must meet condition number 1 through condition number 11. The last sentence before condition number 1 has been deleted because similar language has been moved to the Exceptions, consistent with the 2018 IBC. The other changes in the paragraph before item 1 are for clarity.

The amendments to items 1 through 6 as well as 8 and 9 are for clarity and consistency with the 2018 IBC. In addition, the phrase “fire-detection system” in item 1 is replaced with “smoke-detection system” because the automatic systems detect smoke, not fire. The phrase is added at the end of item 1 to clarify that the locks must unlock with the means of egress served by the locked area. This is needed and reasonable to allow escape in an emergency.

In item 3, the words “or switch” are added because the fire command center may use switches to unlock the locking system. A sentence is added at the end to clarify that the signal or switch must directly break power to the lock, rather than signaling a person to manually break the power.

In item 5, the reference to the IFC is changed to the Minnesota State Fire Code for ease of reference.

Item 7 is amended to clarify that both sides of the door with a controlled egress locking device must have emergency lighting. This is needed to ensure that emergency egress is not hindered by dark conditions.

Item 8 is amended to add “resident or” because the occupancies covered by this rule include assisted nursing homes and other occupancies where the individuals are more commonly known as residents than patients.

Item number 11 is added to require the door locks to be listed as UL 294. UL is an acronym for Underwriters Laboratories, a product safety and testing organization. The requirement that door locks be listed as UL 294 is contained in item 8 of the 2018 IBC.

Exceptions number 1 and 2 are identical to the 2018 IBC. Exception number 3 is similar to the existing “Exception to item #10” in Minnesota Rules 1305.1008, subpart 6a. The existing exception applies only to R-3 occupancies. It is reasonable for this exception to also apply to R-4, Condition 1 occupancies because the criteria for I-1 and R-4 occupancies are very similar except R-4 occupancies are limited to 16 occupants. The language has also been modified to update the cross-reference to the 2018 IBC, and for clarity.

Subp. 7. IBC section 1010.1.9.8 and 1010.1.9.8.1. The current subpart 7 has been substantially rewritten for consistency with the model code. Sections 1010.1.9.7 and 1010.1.9.7.1 in the 2012 IBC have been renumbered as sections 1010.1.9.8 and 1010.1.9.8.1 in the 2018 IBC. All differences from sections 1010.1.9.8 and 1010.1.9.8.1 of the 2018 IBC will be discussed below.

1010.1.9.8, Delayed egress door locks. The proposed rule has three changes from section 1010.1.9.8 of the 2018 IBC. First, where the proposed rule says “an approved smoke detection system,” the model code says “an approved smoke or heat detection system.” The proposed rule eliminates the option of a heat detection system because a smoke detection system provides the earliest warning for occupants; if there is no smoke detection system but only a heat detection system, occupants will not have as much time for emergency egress, which is a risk to life safety.

The second change in the proposed rule is the addition of the phrase “throughout the means of egress” before item 1. This phrase is added for clarity.

The third change is the wording of item 2. The model code’s item 2 states: “Group E classrooms with an occupant load of less than 50.” In the proposed rule, item 2 states: “Group E in locations where the means of egress does not serve an assembly use area.” This is consistent with the current Minnesota State Fire Code, Minn. R. rule 7511.1008, subp. 2. For life safety reasons, it is important that school assembly areas not have delayed egress door locks; it’s possible to have an assembly area where the occupant load is less than 50. If a delayed egress door were allowed in such an assembly area, this would delay egress from the assembly area in an emergency situation, and pose a life safety risk.

The proposed exception is identical to the exception in the model code.

1010.1.9.8.1, Delayed egress locking system. This new subsection parallels the 2018 IBC, with some amendments.

The first sentence of the proposed rule and items 1, 2 and 3 are identical to the 2018 IBC.

Item 4 parallels the 2018 IBC, but the model rule has been amended to reflect the increased life safety requirements in the current rule. Specifically, the IBC uses the phrase “physical effort” without defining it. The proposed rule, like the current fire code (Minn. R. 7511.1008, subp. 2), uses the phrase “of not more than 15 pounds” to qualify the maximum amount of force. This is needed and reasonable to ensure that the amount of force needed to open the door is not excessive. (Note that the current fire code says that 66 N¹⁸ is the equivalent of 15 pounds of force. This is an error and is corrected in the proposed item 4 to 67 N.) Item 4 of the model code states that the door must open when the physical force is applied for “not more than 3 seconds.” The proposed rule amends this to “not more than 1 second.” This one-second phrase is in the current fire code, Minn. R. 7511.1008, subp. 2. This shorter period of time is needed to ensure prompt egress in an emergency. In the model code, the last sentence of item 4 before the exception uses the term “rearming.” This word has been changed to “relocking” in both the proposed rule and the current rule. “Relocking” is a more accurate term, because this section is dealing with locks rather than alarm systems. Also, the proposed rule adds the phrase “from an approved location.” This is a clarification of the intent of the rule. Finally, the phrase “to item 4” is added after the word “exception” to clarify that the exception is only an exception to item 4.

Item 5 is identical to the 2018 IBC, except that the phrase “to item 5” has been added after the word “exceptions” for clarification.

Item 6 is identical to the 2018 IBC, except that the phrase “to item 6” has been added after the word “exception” for clarification.

Items 7 and 8 are identical to the 2018 IBC.

Subp. 7a. IBC section 1010.1.9.12, Stairway doors. The section reference numbers are renumbered to coordinate with renumbering changes made to the 2018 IBC. The subpart is otherwise unchanged.

Subp. 8. IBC section 1010.1.11, Special detention arrangements, and subsections 1010.1.11.1, 1010.1.11.2, 1010.1.11.3 and 1010.1.11.4. The section reference numbers are renumbered to coordinate with renumbering changes made to the 2018 IBC. The only other proposed amendment is to section 1010.1.11.1. The proposed amendment to the last sentence of this section states that the conditions are specified in items 1 through 6 above, rather than just saying that the conditions are specified above, and deletes the word “of.” These changes are for clarification only and do not change the substantive meaning.

1305.1011 SECTION 1011, STAIRWAYS.

This rule part is being renumbered and relocated because this section was renumbered from Section 1009 to Section 1011 in the 2018 IBC. The title is changed for consistency with the

¹⁸ N is the abbreviation for the unit of force known as “Newtons.”

2018 IBC.

Subpart 1. IBC Section 1011.14, Alternating tread devices. This subpart is amended by renumbering the section reference numbers to coordinate with numbering changes made in the 2018 IBC. The word “and” is added for clarification.

Subp. 2. IBC section 1011.15, Ships ladders. This subpart is amended by renumbering the section reference numbers to coordinate with numbering changes made in the 2018 IBC. The first sentence is amended to clarify that the proposed language replaces all of 1011.15, including its subsections. The current rule cross-references current part 1305.1209. However, that in turn cross-references the Minnesota Mechanical Code. The reference in the proposed rule has therefore been changed to the Minnesota Mechanical Code for ease of reference. The word “less” has been changed to “fewer” in item 2 and the subitems under item 2 have been numbered for consistency with the current Minnesota State Fire Code, Minn. R. 7511.1009, subp. 2 (2017). Item 3 has been amended to generally reference the Minnesota Mechanical Code rather than a specific section of that code. This is reasonable to avoid the need to amend this rule whenever the Minnesota Mechanical Code is amended.

Current 1305.1015 SECTION 1015, EXIT AND EXIT ACCESS DOORWAYS. Repeal.

This rule part is being repealed because IBC section 1015 was renumbered to section 1006, and all new language has been proposed for the amendment of section 1006. The reasons for the new language are described above in connection with proposed rule 1305.1006.

New 1305.1015 SECTION 1015, GUARDS.

Part 1305.1013 is being renumbered as part 1305.1015 because this section in the 2018 IBC was renumbered.

Subpart 1. IBC section 1015.2, Where required. The 2018 IBC has been renumbered from 1013.2 to 1015.2 so the section reference number must be renumbered to coordinate with the change. The other changes are not substantive, but are for clarity and consistency with the grammatical construction used in the 2018 IBC.

Subp. 2. IBC section 1015.3, Height. This section of the 2018 IBC has been renumbered from 1013.3 to 1015.3 so the section reference number must be renumbered to coordinate with the change. The reference to section 1028.14 in the 2012 IBC is renumbered to section 1029.17 to correspond with renumbering in the 2018 IBC.

Subp. 2a. IBC section 1015.6, Mechanical equipment, systems, and devices. This subpart is added to modify section 1015.6 of the 2018 IBC to direct the user to the appropriate rules governing guard requirements for mechanical equipment. Because this section is specific to the requirements for guards needed for the installation and service of mechanical equipment, it is reasonable to direct the user to the Minnesota Mechanical Code.

Subp. 3. IBC section 1015.8, Window openings. This section of the 2018 IBC has been renumbered from 1013.8 to 1015.8 so the section reference number must be renumbered to coordinate with the change. Similarly, cross-references have been modified in accordance with

the new numbering of sections in the 2018 IBC. The section heading is changed from “[w]indow sills” to “window openings” because the section heading is changed in the 2018 IBC. Language regarding subsection 1013.8.1 is no longer needed because identical language (except for the cross-reference number) is now in subsection 1015.8.1 of the 2018 IFC. A sentence has been added at the end of section 1015.8 to clarify that subsection 1015.8.1 remains without amendment. Exception 5 in the current rule is deleted because the Minnesota Building Code does not cover repairs or replacement windows. Repairs and alterations are governed by chapter 1311, the Minnesota Conservation Code for Existing Buildings.

1305.1018 SECTION 1018, AISLES.

Part 1305.1017 is being renumbered as part 1305.1018 because this section in the 2018 IBC was renumbered. Because the entire model code section 1018 is being replaced, the section heading is added for clarity. All subsections are renumbered and two section reference numbers are amended to coordinate with changes made to the 2018 IBC. For improved clarity, a sentence is rewritten in section 1018.2. In sections 1018.2.1 and 1018.2.2, references to the Minnesota Accessibility Code are added for clarification and for consistency with the Minnesota Accessibility Code. Under that code, certain aisles will need to be wider to allow for wheelchair access. In section 1018.2.2, the word “that” is added for clarity.

1305.1020 SECTION 1020, CORRIDORS.

Part 1305.1018 is being renumbered as part 1305.1020 because this section in the 2018 IBC was renumbered.

Subpart 1. IBC Table 1020.1. This table of the 2018 IBC has been renumbered from 1018.1 to 1020.1; the section reference number must be renumbered to coordinate with the change. A title has been added to the table for improved readability. The table is changed to add a new row for Group I-4 occupancies. Some conditions or uses of Group I-4 occupancies are exempt from the requirement to be equipped with an automatic sprinkler system if the building corridors have a 1-hour fire-resistance rating. The change to Table 1020.1 is therefore reasonable and needed to recognize that not all Group I-4 occupancies are required to be sprinklered and that buildings that are not equipped with an automatic sprinkler system must have a 1-hour fire-resistive corridor system to protect the exit system from smoke and fire.

The table is also changed by requiring a half-hour or 1-hour fire-resistance rated corridor in buildings containing residential occupancies equipped with automatic sprinkler systems. Footnote (d) is added to require buildings containing Group R-3 and R-4 occupancies to have 1-hour fire-resistance rated corridors when the automatic sprinkler system is installed in accordance with the requirements of section 903.3.1.3, which cross references NFPA 13D. NFPA 13D compliant automatic sprinkler systems are smaller systems that can use the pipes that serve other plumbing fixtures and only use two heads to control a fire. They are intended for use in one- and two-family dwellings and townhouses. Automatic sprinkler systems compliant with NFPA 13R are served by their own pipes and use a maximum of four heads to control a fire. They are intended for use in residential occupancies that are up to four stories in height. Because NFPA 13D systems provide less life-safety protection in the event of fire, it is reasonable to require the additional protection provided by a corridor with a fire resistance rating of 1-hour.

Subp. 2. IBC section 1020.6, Corridor continuity. This section of the 2018 IBC has been renumbered from 1018.6 to 1020.6 so the section reference number must be renumbered to coordinate with the change. Exception number 3 is added to clarify that elevator lobbies that comply with section 1016.2, item 1 are not intervening rooms within an exit system. This exception is identical to the 2018 IBC, section 1020.6, exception 2.

1305.1023 SECTION 1023, INTERIOR EXIT STAIRWAYS AND RAMPS.

Part 1305.1022 is being renumbered as part 1305.1023 because this section in the 2018 IFC was renumbered. The proposed amendments more closely reflect the language in section 1023.5 of the 2018 IBC.

With the proposed amendments, the introductory phrase (before the numbered items) is identical to the 2018 IBC. The items are numbered for readability. Proposed items 1, 2, 6 and 7 are identical to items 1, 2, 5 and 6 in the model code. In item 1, the current language regarding sprinkler piping and standpipes is no longer necessary because those are part of the fire protection systems (item 2). Proposed items 3 and 5 are revised versions of items 3 and 4 in the model code. These items have been amended to limit penetrations for security systems and two-way communication systems to those serving the exit stairway or ramp. This amendment is reasonable because the enclosures for interior exit stairways and ramps are fire barriers that are fire-resistance-rated wall assemblies intended to restrict the spread of fire. This amendment would reduce the number of permitted penetrations, to limit any negative effect to the fire-resistance of the enclosure. The new model code significantly reduced the protection requirements for these critical exit enclosures. This amendment retains the level of protection required by the 2015 Minnesota Building Code. Proposed item 4 is new: “Wiring that serves the exit stairway or ramp.” This addition is reasonable because penetrations for wiring that are not properly protected can negatively affect the fire resistance of the exit stairway or ramp. The amended language at the end of section 1023.5 is almost identical to the 2018 IBC. The last sentence has been modified to change the model code language, “between adjacent interior exit stairways and ramps,” to the following: “between adjacent interior exit stairways and ramps or adjacent exit passageways.” This amendment is needed to limit penetrations to all adjacent features that could negatively affect the fire-resistance of the enclosure.

Section 1023.5 of the IBC is also modified by deleting the exception to the section. The exception is deleted because it would permit miscellaneous penetrations for items such as electrical pipes, plumbing pipes, outlets, or mechanical ducts. These penetrations may cause oversized holes around the items penetrating the wall and could potentially allow fire or smoke to enter the protective enclosure, thus jeopardizing fire protection for occupants while exiting downward in an exit enclosure during a fire.

1305.1024 SECTION 1024, EXIT PASSAGEWAYS.

Current rule 1305.1023 is being renumbered as 1305.1024, and the IBC references are renumbered, for consistency with the 2018 IBC.

IBC section 1024.6, Penetrations. This modifies section 1024.6 of the 2018 IBC to limit penetrations into or through an interior exit passageway to items necessary for fire protection or

those that are serving the interior exit passageway. The proposed amendments closely reflect the language of the model code. An exit passageway is a fire-resistive rated “tunnel,” used only for the purposes of exiting, that runs from the interior of a building to a safe exterior exit discharge area.

With the proposed amendments, the introductory phrase (before the numbered items) is almost identical to the 2018 IBC. The proposed rule adds the word “interior” for clarity; the intent of this rule is to regulate interior exit passageways. The items are numbered for readability. Proposed items 1, 2, 6 and 7 are identical to items 1, 2, 5 and 6 in the model code. Proposed items 3 and 5 are revised versions of items 3 and 4 in the model code. These items have been amended to limit penetrations for security systems and two-way communication systems to those serving the exit passageway. This amendment is reasonable because the enclosures for interior exit passageways are fire barriers that are fire-resistance-rated wall assemblies intended to restrict the spread of fire. This amendment would reduce the number of permitted penetrations, to limit any negative effect to the fire-resistance of the enclosure. The new model code significantly reduced the protection requirements for these critical exit enclosures. This amendment retains the level of protection required by the 2015 Minnesota Building Code. Item 4 in the proposed rule is new: “Wiring that serves the exit passageway.” This addition is reasonable because penetrations for wiring that are not properly protected can negatively affect the fire resistance of the exit passageway. The amended language at the end of section 1024.6 is almost identical to the 2018 IBC. The last sentence has been modified for clarity and to change the model code language, “between adjacent exit passageways,” to the following: “between adjacent interior exit stairways and ramps or adjacent exit passageways.” This amendment is needed to limit penetrations to all adjacent features that could negatively affect the fire-resistance of the enclosure.

Section 1024.6 of the IBC is also modified by deleting the exception to the section. The exception is deleted because it would permit miscellaneous penetrations for items such as electrical pipes, plumbing pipes, outlets, or mechanical ducts. These penetrations may cause oversized holes around the items penetrating the wall and could potentially allow fire or smoke to enter the protective enclosure, thus jeopardizing fire protection for occupants while exiting downward in an exit enclosure during a fire.

1305.1029 SECTION 1029, ASSEMBLY.

Current rule 1305.1028 is being renumbered as 1305.1029 because this section in the 2018 IBC was renumbered. The IBC section references are renumbered in accordance with reformatting in the model code. All other amendments are discussed below.

Subpart 1. IBC section 1029.1.1, Bleachers. In the exception to ICC 300 section 404.5, 1,676 mm is changed to 1,676 mm to correct an error in the metric conversion of 66 inches. Exception 1 to ICC 300 section 408.1, item 1, is rewritten for clarity. There is no substantive change.

Subp. 2. IBC section 1029.6.4, Width of means of egress for bleacher facilities. This subpart is added for consistency with the Minnesota State Fire Code. Except for renumbering the

cross-references to correspond with the 2018 IBC, the proposed language is identical to the language in Minnesota Rule part 7511.1028, subpart 2 (2017).

Subp. 3. IBC section 1029.9.5, Dead-end aisles. This subpart is added for consistency with the Minnesota State Fire Code. Except for renumbering the cross reference to correspond with the 2018 IBC, the proposed language is identical to the language in Minnesota Rule part 7511.1028, subpart 3 (2017).

Subp. 4. IBC section 1029.17, Assembly guards. This new exception to section 1029.17 of the 2018 IBC is needed and reasonable to incorporate the requirements of the Minnesota Bleacher Safety Act. The language of the proposed exception is identical to the language in the current fire code, Minnesota Rule 7511.1028, subpart 4 (2017), except that the cross-references have been changed due to renumbering of the 2018 IBC. Also, a sentence is added at the end to clarify that subsections 1029.17.1 through 1029.17.4 remain unchanged.

1305.1030 SECTION 1030, EMERGENCY ESCAPE AND RESCUE.

Current rule 1305.1029 is renumbered as part 1305.1030 to coordinate with numbering changes made to the 2018 IBC. The code sections within the part are renumbered in accordance with reformatting in the model code.

The model code language needs to be amended because it relies on mandatory sprinkling of all Group R occupancies. Because Minnesota does not require sprinkling of all R occupancies, it is important to ensure that all non-sprinklered R occupancies have emergency escapes.

Subpart 1. IBC section 1030.1, General. The first sentence is reworded to make it easier to understand. The last two sentences before the exceptions are amended to be identical to the last two sentences before the exceptions in the 2018 IBC.

In exception 1, the phrase “and not used for purposes other than mechanical equipment or storage” has been added to the language of IBC exception 1. This phrase is needed and reasonable for clarification. Spaces with a ceiling height under 80 inches are technically not able to be occupied; in other words, it would be illegal to use these spaces as a laundry room, family room, or bedroom. However, the model code language is not clear enough for plain language understanding. This plainer language is important so that the code can be correctly enforced in out-state Minnesota where there are no local building officials for interpretation.

Exceptions 2 and 3 are identical to IBC exceptions 2 and 3.

Exception 4 is a rewritten version of exception 1 in the current rule. Exception 1 in the current rule refers to tables 1021.2(1) and table 1021.2(2) of the 2012 IBC. Those tables have been renumbered and moved to section 1006 of the 2018 IBC. Instead of referring to certain occupancies “in accordance” with these tables, the proposed language is easier to understand. It clarifies (in clause B) that the means of occupancy must not rely on section 1006.3.3 for compliance. Proposed section 1006.3.3 refers to the same (renumbered) tables, table 1006.3.3(1) and 1006.3.3(2). Proposed section 1006.3.3 specifies conditions in which only one exit is needed. Proposed exception 4 (in proposed section 1305.1030, subpart 1) limits the circumstances under which certain residential occupancies are not required to provide emergency

escape and rescue openings. Proposed exception 4 limits those circumstances to occupancies that: (1) have an approved automatic sprinkler system throughout; and (2) have not used section 1006.3.3 to provide only one exit. This limitation is needed and reasonable because the added life and safety protection provided by the sprinkler system and multiple exits is sufficient; the cost of providing emergency escape and rescue openings in those circumstances is not warranted.

Exceptions 5 through 8 are identical to exceptions 2, 3, 4 and 8 in the current rule.

Current exceptions 5 and 6 are deleted because they are comparable to proposed exceptions 2 and 3. They have been moved so that the proposed exception numbers match the exception numbers in the IBC, to avoid confusion.

Current exception 7 is deleted because the condition it addresses is now covered by proposed exception 4.

Current exception 9 is deleted because this exception concerns existing buildings. Existing buildings are covered in Minnesota Rules Chapter 1311, the Minnesota Conservation Code for Existing Buildings.

Subp. 2. IBC section 1029.4, Operational constraints. Repeal. This subpart is repealed because the 2018 IBC now contains the same language in section 1030.1.1. Therefore, this modification is no longer necessary.

Subp. 3. IBC section 1029.6 Replacement windows. Repeal. This subpart is repealed because the 2018 IEBC now contains the same language in section 505.3. Minnesota adopts the IEBC as part of the Minnesota Conservation Code for Existing Buildings. *See* Minn. R. 1311.0010, subp. 1. The Department is in the process of amending this rule to adopt the 2018 IEBC by reference. Therefore, current rule 1029.6, subp. 3, is no longer necessary.

1305.1202 SECTION 1202, VENTILATION.

IBC section 1202.1, General. Current rule 1305.1203 is being renumbered as 1305.1202 because this section in the 2018 IBC was renumbered and revised. Section 1202.1 and the cross-reference are renumbered accordingly.

Current rule 1305.1209 SECTION 1209, ACCESS TO UNOCCUPIED SPACES. Repeal.

The 2012 IBC section 1209 has been renumbered to section 1208 in the 2018 IBC. The current rule 1304.1209 is being repealed because 2018 IBC section 1208 does not need any amendment. This section is specific to mechanical equipment access, which is addressed in the Minnesota Mechanical Code, chapter 1346. The Minnesota Mechanical Code adopts the International Mechanical Code with amendments. Section 1208 of the 2018 IBC correctly refers the reader to the International Mechanical Code.

New 1305.1209 SECTION 1209, TOILETS AND BATHROOM REQUIREMENTS.

Current rule 1305.1210 is renumbered as 1305.1209 for consistency with the numbering of the 2018 IBC. The IBC section reference is renumbered accordingly. The rule heading is also

amended for consistency with the section heading in the 2018 IBC.

1305.1402 SECTION 1402, PERFORMANCE REQUIREMENTS.

Current rule 1305.1403 is renumbered as 1305.1402 for consistency with the numbering of the 2018 IBC. The IBC section reference is renumbered accordingly.

1305.1404 SECTION 1404, INSTALLATION OF WALL COVERINGS.

Current rule 1305.1405 is renumbered as 1305.1404 for consistency with the numbering of the 2018 IBC.

Subpart 1. IBC section 1404.4.2. The IBC section number and the cross reference within the rule are amended because the corresponding sections were renumbered in the 2018 IBC.

1305.1502 SECTION 1502, ROOF DRAINAGE.

Current rule 1305.1503 is being renumbered 1305.1502, and references to sections are renumbered, because of the renumbering of sections in the IBC. The title of the rule is also changed for consistency with the title of section 1502 of the 2018 IBC. All other amendments are discussed below.

Subpart 1. IBC section 1502.1, Roof drainage.

IBC section 1502.1.1, Where required. The drainage requirements for one- and two-family dwellings are deleted because Minnesota Rules, chapter 1309, the International Residential Code, regulates the roof drainage requirements for one- and two-family dwellings.

IBC section 1502.1.2, Roof design. The word “structurally” is added for clarity. The purpose of the rule is to ensure that the structure is designed for maximum ponding, not that the rest of the roof is designed to create maximum ponding.

Subp. 1a. IBC section 1502.2. A new subpart 1a is added and subsections are numbered because of the renumbering of the IBC.

IBC section 1502.2.2, Sizing of secondary drains. This section is modified to require secondary drains to have the same capacity as the primary roof drains. This amendment is necessary to ensure that roofs have proper drainage in the event of a heavy storm. Secondary drains are intended to replace the primary drains in the event of a clog, and therefore must be sized the same as the primary drain system capacity.

The title of the plumbing code is corrected to Minnesota Plumbing Code, in accordance with Minn. R. 1300.0050, item S. The chapter number of the Minnesota Plumbing Code is added for ease of cross-reference.

IBC section 1502.2.3, Sizing of scuppers. This section is modified to refer to the new Table, for ease of reference. Also, the phrase “weir length” has been added for clarity.

Table 1502.2.3. Table 1502.2.3 is added to provide users with the correct size for the

scupper based on the size of the roof for which the scupper provides drainage. The sizing of the scuppers in Table 1502.2.3 is consistent with the sizing requirements for scuppers located in the Minnesota Plumbing Code. *See* 2012 Uniform Plumbing Code Section 1108, as amended by Minn. R. 4714.1108 (2017).

Subp. 2. IBC section 1502.3, Scuppers. The IBC section number in this subpart is renumbered because of the renumbering of the 2018 IBC.

1305.1510 SECTION 1510, ROOFTOP STRUCTURES.

Current rule 1305.1509 is being renumbered 1305.1510, and references to sections are renumbered, because of the renumbering of sections in the IBC.

Current 1305.1511 SECTION 1511, SOLAR PHOTOVOLTAIC PANELS/MODULES. Repeal.

Current rule 1305.1511 is being repealed. Section 1512 of the 2018 IBC completely addresses the issues addressed by the current rule.

New 1305.1511 SECTION 1511, REROOFING.

Current rule 1305.1510 is being renumbered 1305.1511 to correspond with the renumbering of the IBC. The language of the current rule is proposed as subpart 2, with no changes other than renumbering. Proposed subparts 1 and 3 are new language, as discussed below.

Subpart 1. IBC section 1511.1, General. A minimum slope is required for roofs to provide adequate drainage and prevent water from ponding, or collecting on the roof. Ponding due to inadequate drainage can result in damage to the roof, or even collapse of the roof. The first sentence of this proposed section 1511.1 is identical to the first sentence of section 1511.1 of the 2018 IBC. The 2018 IBC contains two exceptions. This proposed rule replaces the first of these two exceptions, which addresses “roof replacement or roof recover,” with a proposed exception addressing reroofing. “Reroofing” is defined as follows in the IBC: “The process of recovering or replacing an existing roof covering. See ‘Roof recover’ and ‘Roof replacement.’” 2018 IBC, section 202. “Reroofing” therefore covers both replacing and recovering a roof, and is used for clarity in the proposed exception. The first IBC exception exempts from the minimum design slope (2 percent) roofs that provide positive drainage. The proposed exception adds three additional conditions for that exemption to apply. Specifically, the proposed rule would permit reroofing that does not comply with the minimum design slope where: (a) the minimum slope is technically infeasible; (b) a structural analysis demonstrates that the existing structure is able to support ponding to the point of overflow or level of the secondary drainage system; and (c) a secondary (emergency) drainage system is installed; and. Regarding the infeasibility condition, design conditions must maintain positive drainage from not only the roof, but adjacent wall flashings, curbs, and parapets. Where the increased thickness of the roof insulation to provide code compliant drainage would result in a covering or blocking of existing wall flashing weeps, or exceed existing curb or parapet flashing heights where these conditions are unalterable, the change in roof slope is deemed to be technically infeasible. Many older buildings have not been evaluated to determine if the roof is able to withstand the additional stress of water or have secondary emergency roof drains

installed. It is reasonable to require that a structural analysis be completed to determine whether the structure is able to withstand the additional stress caused by ponding and whether the roof is at risk of failure due to overloading.

Most buildings are already designed so that the roofs allow water to spill over the sides, have perimeter scuppers or have secondary roof drains. In the rare event that this is not part of the original design, the solution is often as simple as adding a scupper (\$250 installed) to the sidewall of a roof. Very large buildings may require a secondary drain. Adding a second roof drain costs approximately \$350 to \$400 and then the piping costs depend upon the distance to a discharge location. The cost of damage to the structure or failure of a roof is considerable compared to the cost of a structural analysis and secondary emergency roof drain. As a result, the costs associated with the proposed amendment are reasonable to ensure roofs unable to comply with the minimum slope requirement are able to withstand the stresses caused by ponding.

The second exception in section 1511.1 of the 2018 IBC provides an exception for roofs that provide for positive roof drainage. The proposed rule deletes the second exception because it creates a structurally dangerous condition. Where roofing systems are replaced with more insulation in order to comply with energy code requirements, the heat escaping from the roof is reduced and snow loading can be significantly increased. During spring months, the primary drains can become clogged with ice dams creating ponding conditions. Where the snow has not melted down because of added insulation, a secondary drainage system is necessary to prevent structural failure. Alternatively, the existing roof can be demonstrated to support the potential ponding under the revised exception 1.

Subp. 3. IBC section 1511.7, Drainage. This new subpart adds requirements for a secondary drainage system for existing roofs where the construction has the capability to entrap and pond water if primary drains become clogged. Roofs are required to slope toward the drains at a quarter inch per foot. As a result, the water collects near drains, and if the drains are clogged and there is no secondary drainage system, the water ponds on the roof. Currently, roofs must be designed to withstand a design snow load of thirty-five pounds per square foot in the southern part of the state and forty-two pounds per square foot in northern Minnesota. Some existing roofs were not designed to withstand that much weight. Ponded water with a depth of six and three-quarter inches can exceed thirty-five pounds per square foot and ponded water nine and a half inches in depth can exceed forty-two pounds per square foot, which is more weight than the roof is designed to withstand under current requirements. The excessive weight can result in damage to the roof or failure. This new subpart is reasonable because the addition of a secondary drainage system will mitigate the risk of structural damage to the roof.

An exception is added so a secondary drainage system is not required for existing roofs that are able to withstand the weight of ponded water where the water will discharge over the edge of the building. This exception is reasonable because a secondary drainage system is unnecessary for a building where another mechanism is in place to remove water from the roof.

1305.1607 SECTION 1607, LIVE LOADS. Repeal.

This rule part is being repealed because the 2018 IBC now contains similar provisions in IBC section 1607. Therefore, this rule part is no longer necessary.

1305.1904 SECTION 1904, DURABILITY REQUIREMENTS.

IBC section 1904.3, Corrosion Protection. This rule part is added because a similar requirement was inadvertently excluded from the proposed rule during the adoption of the 2012 IBC. The proposed amendment requires steel within concrete to be protected when used in structures such as parking ramps. It is necessary to protect steel used in concrete because the de-icing salts used in the winter can have corrosive effects. The specific requirements are from the design code for concrete, ACI 318. It is reasonable to apply this design code because Section 1901.2 of the 2018 IBC requires structural concrete to meet the requirements of ACI 318: “Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as amended”

1305.2308 SECTION 2308, CONVENTIONAL LIGHT-FRAME CONSTRUCTION.

Subpart 1. IBC Figure 2308.9.3. Repeal. This subpart is repealed. This current subpart amends a table in the 2012 IBC entitled “Basic Components of the Lateral Bracing System.” The 2018 IBC includes a Figure 2308.6.1 with this same title, and that figure does not need to be amended. The requirements from Table 2308.9.3 of the 2012 IBC are now included in proposed Table 2308.6.1, which is addressed in subpart 2. It is therefore reasonable to repeal subpart 1.

Subpart 2. IBC Table 2308.6.1. The title of this table has been changed in the 2018 IBC to “Wall Bracing Requirements” and the table has been renumbered. These changes are reflected in the proposed rule.

Table 2308.6.1 in the 2018 IBC has a column for “Seismic Design Category.” Because Minnesota is not subject to earthquakes, proposed Table 2308.6.1 has a column for wind speed rather than seismic design category. This is the same as current rule 1305.2308, subpart 1. The reference to 1609.3 for wind speed is needed because wind speed varies across the state. Section 1609.3 specifies how to calculate basic design wind speed for determination of wind loads. Other than that, the first three rows of proposed Table 2308.6.1 are identical to the first three rows of Table 2308.6.1 in the 2018 IBC. In the 2018 IBC, these three rows address seismic design categories A and B, which correspond to buildings in areas that are the least susceptible to earthquakes. The other rows are for areas more susceptible to earthquakes. Because this does not apply to Minnesota, these rows have been removed.

The footnotes to the table have been amended. For clarity, a definition of NP has been added. This is the same definition in model code Table 2308.6.1. Proposed footnotes a through d are identical to the comparable footnotes in the 2018 IBC. Footnote e in the model code has been removed because it does not apply to the first three rows of the table. Footnotes c and d in the current rule are no longer needed because of changes made to the 2018 IBC.

1305.2510 SECTION 2510, LATHING AND FURRING FOR CEMENT PLASTER (STUCCO)

The section reference number in this rule part is amended from 1404.2 to 1403.2 in the 2018 IBC because the corresponding section was renumbered in the 2018 IBC.

1305.2603 SECTION 2603, FOAM PLASTIC INSULATION. Repeal.

Sill plates, joist headers, and rim joists are building elements between the basement wall and floor, so the application of the foam plastic spray is limited in area. Foam plastic spray is applied to these elements to provide insulation and prevent cold air from entering the structure.

The current rule part amended section 2603.4.1.13 of the 2012 IBC so that the maximum thickness of foam plastic spray applied to sill plates, joist headers, and rim joists in Type V construction is five and one-half inches. The current rule also removed density requirements for the foam plastic spray.

The current rule is repealed so that section 2603.4.1.13 of the 2018 IBC would apply. That section includes density requirements (by requiring a range of 1.5 to 2.0 pcf), and states that the maximum thickness of the foam plastic is three and one-quarter inches.

The current rule was added during the adoption of the 2006 IBC to delete foam density requirements because only a few foam plastic spray manufacturers produced foam plastic spray meeting those specifications. Since the adoption of the 2006 IBC, more foam plastic spray manufacturers are able to meet the density requirements. Therefore, there is no longer a need to delete the model code's density requirements.

The amendment to the 2006 IBC also required the foam to be five and a half inches thick; however, testing that occurred for the 2006 IBC model code determined that foam plastic spray with a maximum thickness of three and a quarter inches did not pose any additional fire hazard provided the other conditions in the section are met. Foam plastic spray that is three and one-quarter inches in thickness provides sufficient insulation without increasing fire risk. Therefore, there is no need to modify the model code's maximum thickness requirement.

The 2012 IRC, as adopted with amendments, requires foam plastic spray that is a maximum three and one-quarter inches in thickness, and this provision is carried forward in the 2018 IRC. The 2018 IRC is being adopted as a part of a contemporaneous rulemaking, amending Minnesota Rules Chapter 1309. The repeal of current rule 1305.2603 will allow provisions for the maximum thickness of foam plastic spray applied to sill plates, joist headers, and rim joist to be the same for both residential and commercial construction, which will result in more uniform application and enforcement of the code.

1305.2702 SECTION 2702, EMERGENCY AND STANDBY POWER SYSTEMS.

This rule part is amended by renumbering the IBC section number because the corresponding section was renumbered in the 2018 IBC.

1305.2902 SECTION 2902, MINIMUM PLUMBING FACILITIES.

Subpart 1a. Repeal. This subpart is being repealed. The 2018 IBC adequately addresses the calculation of the number of fixtures in section 2902.1.1.

Subp. 2. IBC Table 2902.1, Minimum number of required plumbing fixtures. This subpart is amended by re-lettering the footnotes because the corresponding footnotes were re-

lettered in the 2018 IBC. Existing footnotes “e,” “f” and “h” are re-lettered as “g,” “h” and “i” respectively. As a result, in section A of this subpart, item 1, “h” is deleted and replaced with “i”. Also, “A-5 Use Group” has been changed to “No. 1, Assembly Classification” to correspond with the designation of the applicable row in the 2018 IBC. In item 2, “f” is replaced with “h” and footnote “g” is added. This footnote was inadvertently omitted during the adoption of the 2012 IBC. It is necessary to add footnote “g” to the “Drinking Fountains” heading to direct the user to accessibility requirements for drinking fountains located in Minnesota Rules, chapter 1341.

Proposed item 4 deletes the requirement in the 2018 IBC that adult day care and child day care facilities have at least 1 bathtub or shower. Operational procedures for adult day services and child day care facilities typically do not permit staff to bathe those in their care. Therefore, the required bathing fixtures typically go unused and are an unnecessary expense. It is reasonable to delete this requirement.

The text of the footnotes is set out in section B of this subpart. Existing footnote “e” is proposed footnote “g,” with the added reference to the accessibility requirements in chapter 1341. Existing footnote “g” is re-lettered as “e” and amended to only require service sinks at buildings classified as business or mercantile with an occupant load of more than 50 instead of an occupant load of more than 15. Service sinks are often floor mounted and useful for businesses and stores regularly cleaned by mopping. Businesses and stores that are small are usually carpeted, and carpet is not cleaned by mopping. As a result, a service sink is not useful for businesses and stores with occupancies of 50 or less.

Proposed footnote “f” is modified from IBC footnote “f” by replacing “International Swimming Pool and Spa Code” with “Minnesota Rules, part 4717.3650.” Minnesota does not adopt the International Swimming Pool and Spa Code, and therefore its provisions do not apply. The requirements for number and type of plumbing fixtures for swimming pools are located in Minnesota Rules, part 4717.3650. It is reasonable to provide code users with the correct reference for the number and type of plumbing fixtures required for swimming pools.

Existing footnote “f” has been re-lettered to footnote “h.” Existing footnote “h” has been re-lettered to footnote “i.”

Subp. 3. IBC section 2902.2, Separate facilities. Exception number 2 is amended by deleting the occupant load of “20” and replacing it with “25.” Section 2902.2 in the 2018 IBC has four exceptions. Exception number 4 in the IBC is specific to a business occupancy and allows a unisex restroom to be used for up to 25 occupants. If exception 2 is changed to allow a single toilet facility to serve up to 25 occupants in any occupancy group, then exception 4 which is specific to B occupancies allowing the same is no longer necessary. It is reasonable and necessary to increase the number of occupants serviced by a unisex restroom in exception number 2 from 20 to 25 occupants so that the change of occupancy of a small tenant space, such as from office to light manufacturing will not force the addition of a second restroom for the same number of people. This will result in lower cost to business owners because restrooms are one of the most expensive spaces per square foot in a building due to finishes, equipment and fixtures.

1305.3001 SECTION 3001, GENERAL.

Chapter 30 of the 2012 IBC is currently incorporated by reference into Minnesota Rules Chapter 1307, with amendments. Under the proposed rule, chapter 30 of the 2018 IBC is incorporated with proposed amendments into Minnesota Rules Chapter 1305. Accordingly, amendments to chapter 1307 are being proposed as part of a contemporaneous rulemaking. The proposed amendments to chapter 1307 repeal the existing amendments to chapter 30 of the 2012 IBC (found in the current part 1307.0095). In proposed part 1305.0011, IBC chapter 30 is proposed to be incorporated by reference into chapter 1305 with amendments because chapter 30 addresses the requirements for buildings equipped with an elevator, such as requirements for elevator lobbies and occupant evacuation. The requirements in IBC chapter 30 are useful to building officials inspecting buildings with elevators installed, so it is reasonable to incorporate IBC chapter 30 by reference into chapter 1305.

As indicated below in connection with specific proposed rules, some of the language from part 1307.0095 is being relocated to chapter 1305 because of the incorporation of chapter 30 by reference into chapter 1305.

Subpart. 1. IBC section 3001.2, Emergency elevator communications systems for the deaf, hard of hearing and speech impaired. The proposed amendment deletes section 3001.2 of the 2018 IBC, which requires elevators to be equipped with an emergency elevator communication system for the deaf, hard of hearing and speech impaired. The proposed amendment deletes this section because the requirements for the emergency communication system cannot be readily met with existing elevator or broadband technology. Section 3001.2 requires emergency elevator communication systems to be a “visual and text-based and a video-based 24/7 live interactive system” that allows individuals to communicate with emergency personnel using video conference technology or chat/text software. An emergency elevator communication system with these capabilities is reliant upon broadband technology for the elevator occupant to communicate with emergency personnel or others outside of the elevator. Many communities in greater Minnesota have limited or no access to broadband so the emergency elevator communications system will not function in these communities.¹⁹ Wireless broadband technology is unreliable for sending chat messages or transmitting video from an elevator because the materials used in the construction of the elevator and the shaft weaken or block wireless signals. Wireless broadband signal strength within elevators may be improved in the future by the development of new technologies. At this time, a continuous video system is not feasible; at best, a video system may function periodically to determine if there are occupants in the elevator.

An emergency elevator communication system with text messaging capability is more feasible with current broadband and elevator technology but is still impractical. Elevator passengers inadvertently activate emergency call functions by bumping the panel equipped with a phone or intercom, and it is anticipated passengers will inadvertently text at higher rates. Elevator call centers need to distinguish inadvertently placed calls from calls placed during an

¹⁹ The Minnesota Department of Employment and Economic Development publishes maps showing broadband availability. For a map showing the percentage of households served by broadband in the different Minnesota counties, see: https://mn.gov/deed/assets/county-wireline_tcm1045-255857.pdf. County maps providing more detail are available at: <https://mn.gov/deed/programs-services/broadband/maps/county-maps.jsp>

emergency, and will need to perform the same function for any text message received. The addition of text messages would overwhelm elevator call centers, and ultimately worsen response time to emergencies because the call center must determine whether the text message was sent due to an emergency.

Subp. 2. IBC section 3001.3, Referenced standards. This section is modified to direct the code user to Minnesota Rules, chapters 1307 and 1335. The technical standards listed in the 2012 IBC table 3001.3 are currently incorporated by reference, with amendments, in Minnesota Rules, chapter 1307, the Minnesota Elevator Code. *See* Minn. R. 1307.0020, subp. 1. The reference to Minnesota Rules, chapter 1335, replaces the 2018 IBC language directing the code user to flood hazard construction requirements located in ASCE 24 and section 1612.3. Current rule 1305.0011, subpart 5, which is not proposed for amendment, replaces all floodproofing provisions with the floodproofing provisions located in Minnesota Rules, chapter 1335. It is reasonable to assist code users by providing references to other applicable codes. The remaining content is unchanged.

Subp. 3. IBC section 3001.4, Accessibility. This section is amended to provide the code user with a reference to Minnesota Rules, chapter 1341, for the accessibility requirements for elevators. It is helpful to provide code users with references to applicable codes. This language is similar to Minnesota Rule 1307.0095, subpart 1(C), which states: “Passenger elevators required to be accessible by the 2012 IBC, Chapter 11, shall conform to Minnesota Rules, chapter 1341.” Because the proposed rule is part of the IBC, no reference to the IBC is needed. Also, the proposed rule includes the phrase: “or to serve as part of an accessible means of egress.” This is a reasonable addition because Minnesota Rule 1341 contains the technical criteria for accessibility requirements.

Subp. 4. IBC section 3001.5, Change in use. This section is amended to provide the code user with a reference to Minnesota Rules, chapter 1307, for the requirements for elevators undergoing a change in use. It is reasonable to provide code users with references to applicable codes. Except for the change in IBC section number, this language is identical to Minn. R. 1307.0095, subp. 1(D).

1305.3002 SECTION 3002, HOISTWAY ENCLOSURES

Subpart 1. IBC section 3002.3, Emergency signs. With two changes, this is the same language that is currently in part 1307.0095, subp. 2(C). The first change is that the current rule references the 2010 edition of ASME A.17.1. The 2018 IBC now references the 2016 edition of ASME A.17.1. *See* 2018 IBC, chapter 35. It is reasonable to leave out the date so that the rule will refer to whatever edition of ASME A17.1 is the referenced standard for the incorporated edition of the IBC. The second change is that the exceptions are removed from the rule, and a sentence is added stating that the exceptions remain the same as in the 2018 IBC. This is reasonable because the exceptions in the rule are the same as the exceptions in the 2018 IBC other than one different cross-reference number, which is different because of the renumbering of the IBC.

Subp. 2. IBC section 3002.4, Elevator car to accommodate ambulance stretcher. This language is comparable to the language in current part 1307.0095, subp. 2(D). One long sentence

has been split in two to make this easier to understand. Also, the words “at each floor level” have been added at the end of the sentence before the exception. This clarifies that the star of life symbol must be placed on both sides of the door frame at each floor level, to assist ambulance personnel. Finally, the word “in” has been added in the first line of the exception for improved readability.

Subp. 3. IBC section 3002.6, Prohibited doors. With one change, this language is identical to current part 1307.0095, subp. 2(F). The only change is that, in item 2, the phrase “from the car” is proposed to be replaced with the phrase “from inside the car.” This is a clarification of the current language, and is not intended to change the meaning.

Subp. 4. IBC section 3002.9, Plumbing and mechanical systems. This is new language. Section 3002.9 of the 2018 IBC is modified to add sections 3002.9.1 and 3002.9.2 addressing plumbing and mechanical systems in elevator hoistways. Section 3002.9.1 directs the code user to Minnesota Rules, chapter 1307, for the requirements for plumbing in elevator hoistways. Plumbing in elevator hoistways is addressed in the technical standard ASME A17.1, which is incorporated by reference with amendments in Minnesota Rules, chapter 1307. It is reasonable to assist code users by providing references to other applicable codes. Section 3002.9.2 limits mechanical systems and mechanical components in hoistways to those serving the hoistways. This amendment is reasonable because it corresponds with the 2018 IBC requirement in section 3002.9 that mechanical systems not be located in elevator hoistway enclosures.

The exception to section 3002.9 of the 2018 IBC is deleted because that exception permits certain floor drains, sumps and sump pumps. Under the Minnesota Plumbing Code, sumps and sump pumps are not permitted in an elevator hoistway. The Minnesota Plumbing Code requires an indirect connection from floor drains to outside of the elevator hoistway. *See* Minn. R. 4714.0418, subp. 2, amending Uniform Plumbing Code section 418.6.

1305.3003 SECTION 3003, EMERGENCY OPERATIONS

Subpart 1. IBC Section 3003.1.1, Manual transfer. IBC section 3003.1.1 states: “**3003.1.1 Manual Transfer.** Standby power shall be manually transferrable to all elevators in each bank.” The proposed language includes this language in the first sentence, but adds the words: “At elevator locations where standby power is required.” The proposed rule also adds a second sentence: “Standby power shall not be transferred from elevator banks where standby power is required to elevator banks where standby power is not required.” These changes are needed because not all elevator locations require standby power. The model code language has caused confusion; building officials have interpreted the language as meaning that standby power must be transferrable to ALL elevators in a building, potentially resulting in standby power being transferred away from locations where it is required, or even more costly, mandating standby power at all elevators in order to maintain standby power at the required locations and have it available at all other elevator banks. The proposed amendments clarify the intent of the model code language.

Subpart 2. IBC Section 3003.1.3, Two or more elevators. The language in this subpart is comparable to the current amendment to section 3003.1.3 contained in part 1307.0095, subpart

3(A). The first sentence is modified by adding the words “where standby power is required” and “controlled by that common operating system.” These amendments are needed and reasonable because: (1) the intent of the rule is to apply only where the operating system is required to have standby power; and (2) the intent of the rule is to apply only to the elevators controlled by the operating system that are required to have standby power, not to all elevators in the building. The citation at the end of the subpart has also been modified to update it to the most current version.

1305.3030 CHAPTER 30, ELEVATORS AND CONVEYING SYSTEMS. Repeal.

This rule part is being repealed because Chapter 30 of the 2018 IBC is proposed to be incorporated by reference into chapter 1305 instead of chapter 1307, with the proposed amendments to IBC chapter 30 in the proposed amendments to chapter 1305 as described above. As a result, the rule part is no longer necessary.

1305.3111 SECTION 3111, SOLAR PHOTOVOLTAIC PANELS/MODULES.

Almost all of the language in this part is new. The title of this part has been changed to correspond with the 2018 IBC. The discussion below explains how and why this rule differs from section 3111 of the 2018 IBC.

Subpart 1. IBC section 3111.1, General. The lead-in sentence has been changed to clarify that the rule amends both section 3111.1 and all of its subsections. The first sentence of the proposed section 3111.1 is identical to the first sentence of section 3111.1 of the 2018 IBC. The exception is not in the IBC. The exception is needed and reasonable because buildings regulated by chapter 1309 must comply with the specific requirements of that chapter relating to solar energy systems. *See* section R324 of the 2018 International Residential Code.²⁰

IBC section 3111.1.1, Wind resistance. The 2018 IBC language is unchanged, but the section is included in the proposed rule to provide context for the entire amendment. Including this language will clarify to the user that the subsection applies and is not deleted from the code.

IBC section 3111.1.2, Roof live load. The 2018 IBC language is unchanged, but the section is included in the proposed rule to provide context for the entire amendment. Including this language will clarify to the user that the subsection applies and is not deleted from the code.

IBC section 3111.1.3, Roof access points. This is proposed new language that is not in the model code. This language is identical to language being proposed in the Minnesota State Fire Code as part 7511.1204, adding subsection 1204.1.2. This subsection is added to include seven criteria for roof access points to ensure firefighters have unobstructed access to the roof and an area on the roof that is free from hazards or obstacles. The roof access points must be located where the firefighters have access to the roof from the ground. This is necessary to ensure that there is a location to place a ground fire ladder. The roof access points must not require the ladder to be placed over window or door openings and must be at strong points of building construction so that the ladder can be secured to the building to allow firefighters safe

²⁰ Chapter 1309 currently adopts the 2012 IRC, and does not amend section R324. The Department is contemporaneously proposing to amend chapter 1309 to adopt the 2018 IRC, and does not anticipate amending section R324 of the 2018 IRC.

access to the roof. Also, the proposed amendments do not permit roof access points in locations with overhead obstructions to further ensure the safety of firefighters accessing the roof. Item 5 indicates that the roof access point must lead to a landing on the roof that is six feet in each direction without any obstacles. The landing size at the roof access point is consistent with the minimum width required in the model code for a perimeter clear access pathway. This proposed criteria is reasonable for life safety to allow firefighters to perform vertical ventilation or extinguish a fire on the roof. Roofs with slopes greater than two units vertical in twelve units horizontal must be provided a direct access pathway to the roof ridge so that the ladder reaches the peak of the roof. This is necessary because roofs with slopes of 2:12 and steeper are not required to have perimeter access pathways, so the firefighters must have the roof access point align with the pathway to the ridge in order to be able to utilize the required access pathway to the ridge. Item 6 requires two roof access points so that an alternative path is available if an obstacle such as a fire burn-through blocks one roof access point. The building code means of egress requires a minimum separation of one-half the distance of the diagonal of a space when two exits are required, and has an exception allowing separation of one-third the diagonal distance when the building is fully sprinklered. *See* IBC Section 1007.1.1, exception 2. The one-third diagonal distance standard is applied to the roof to provide firefighters working on the roof another safe means of roof access if the primary access point is compromised by fire.

IBC section 3111.1.4. This section is added to require the notification of fire officials when a roof mounted solar installation is planned. This modification is reasonable because fire inspection officials are often unaware of a roof mounted solar installation until the project is substantially completed and undergoing final inspection. Any changes to the roof mounted solar installation required by the fire inspection official after the project is substantially complete will be more expensive than changes required during the early stages of the project.

Subp. 2. IBC section 3111.3, Photovoltaic solar energy systems. This section of the IBC is modified to delete the references to NFPA 70 and the IFC and add an exception for nonhabitable structures. The reference to NFPA 70 is replaced with a reference to the Minnesota Electrical Code, which is the appropriate reference for electrical requirements in Minnesota. NFPA 70 is the National Electrical Code (NEC). The 2017 edition of the NEC has been adopted in Minnesota Rules, chapter 1315, the Minnesota Electrical Code. *See* Minn. R. 1315.0200. Referencing the Minnesota Electrical Code clarifies which edition of the NEC applies. The reference to the IFC is replaced with a reference to the Minnesota State Fire Code, which incorporates the IFC and is the appropriate reference for fire code requirements in Minnesota. *See* Minnesota Rule 7511.0050, which is being proposed for amendment to incorporate the 2018 IFC.

An exception is added to exempt the installation of solar photovoltaic power systems on detached, nonhabitable Group U structures from compliance with section 3111 of this code. Group U occupancies are buildings and structures of an accessory and miscellaneous structural use not classified in any other specific occupancy group by the IBC. Group U occupancies include structures such as agricultural buildings, barns, carports, and sheds. Group U occupancies are more fully described in section 312 of the IBC. It is reasonable to exempt Group U occupancies from the installation requirements for photovoltaic solar energy systems in section 3111 because Group U occupancies are detached from habitable structures and pose little hazard to life-safety. This exception is consistent with the current exception from IBC

photovoltaic solar energy system installation located in existing Minnesota Rules, part 1305.3113.

Subp. 3. IBC section 3111.3.4, Access and Pathways. This subpart modifies section 3111.3.4 of the 2018 IBC and adds additional subsections. The additional subsections incorporate the language of section 1204 of the 2018 IFC. It is reasonable to coordinate IBC and IFC requirements for photovoltaic solar energy systems because photovoltaic solar energy systems must meet the requirements of both codes. It is reasonable to include the IFC requirements for photovoltaic solar energy systems in this chapter because designers may not refer to the IFC when designing buildings to be equipped with photovoltaic solar energy systems. Including the IFC requirements for photovoltaic solar energy systems will lower the costs of installation because designers will be aware of all requirements as they begin the project. Additionally, locating IFC requirements for photovoltaic solar energy systems in this chapter ensures that designers include the required roof access for firefighters, which improves life safety for building occupants.

Except for one change, the first two sentences of section 3111.3.4 are identical to section 1204.2 of the 2018 IFC. The only change in the first sentence is that the proposed rule references the subsections of section 3111.3 rather than comparable references to subsections of 1204 in the fire code. The third sentence has been changed because the 2018 IFC permits “minimal obstructions, such as vent pipes, conduit or mechanical equipment.” The revised sentence prohibits all obstructions. It is reasonable to not permit any such obstructions, for the safety of firefighters and to ensure that firefighters can rapidly access all areas affected by the fire. The exceptions are identical to the exceptions in section 1204.2 of the 2018 IFC.

IBC section 3111.3.4.1, Solar photovoltaic systems for roof slopes greater than 2 units vertical in 12 units horizontal (2:12). The requirements for roof access and pathways are determined based on occupancy groups in sections 1204.2.1 and 1204.3 of the 2018 IFC. The 2018 IFC presumes that Group R-3 buildings have sloped roofs and buildings belonging to all other occupancy classifications have flat roofs. Because roof slope is not determined by occupancy type, the requirements of sections 1204.2.1 and 1204.3 are modified so that the requirements for roof access and pathways are based on the roof slope. Sections 3111.3.4.1.1 to 3111.3.4.1.3 address the roof pathway requirements for sloped roofs, which are roofs with slopes more than two units vertical in twelve units horizontal.

IBC section 3111.3.4.1.1, Pathways to ridge. This section modifies the language of section 1204.2.1.1 of the 2018 IFC to require: (1) pathways at intervals of 150 feet throughout the length and width of the roof; and (2) at least one pathway on the fire department access side of a roof as an alternative to having at least one pathway on the street or driveway side. Pathways to the ridge are necessary to allow firefighters a route to access the highest point of the roof. Requiring pathways at intervals of 150 feet throughout the length and width of the roof is consistent with the pathway requirements for flat roofs of large-scale commercial buildings, as found in section 1204.3.2, Item 1, of the 2018 IFC. Proposed section 3111.3.4.1.1 requires large scale sloped roofs to have a similar number of pathways for fire department access to the roof.

Section 1204.2.1.1 of the 2018 IFC requires at least one pathway on the street or driveway side of the roof. The proposed amendment would allow the pathway to be on the fire-

department-access side of the roof. This allows an alternative method of access to the pathway for buildings without street or driveway access. The requirement allows a pathway to be in any place where there is access for the fire department.

IBC section 3111.3.4.1.2, Setbacks at ridge. This section incorporates the language of section 1204.2.1.2 of the 2018 IFC with one minor change. The IFC erroneously listed 36 inches as 457 mm. The correct equivalency is 914 mm. Setbacks are areas of the roof not covered by photovoltaic solar arrays. Setbacks are measured as the distance from the photovoltaic solar array to the roof ridge. Setbacks are necessary to provide firefighters with unobstructed access to the ridge line.

IBC section 3111.3.4.1.3, Alternative setbacks at ridge. This section incorporates the language of section 1204.2.1.3 of the 2018 IFC, with minor changes. First, the reference in the IFC to section 903.3.1.3 is deleted because the application of this section as amended goes beyond R-3 occupancy groups and goes beyond IBC section 903.3.1.3, the type of sprinkler system associated with smaller dwelling type structures. Also, the proposed rule corrects an error in the IFC, which had erroneously indicated that 36 inches equals 457 mm. The correct equivalency is 914 mm. Finally, the IFC language is changed to replace “dwelling” with “building.” It is reasonable to replace “dwelling” with “building” because the term “dwelling” refers to a building classified as a residential occupancy and the proposed amendments to this section apply the requirements for roofs of Group R-3 occupancies to a building of any occupancy with a sloped roof.

IBC section 3111.3.4.1.4, Emergency escape and rescue openings. This section modifies the requirements of section 1202.2.2 of the 2018 IFC to apply to Group R occupancies. A portion of Group R occupancies may be used for sleeping purposes. As a result, it is necessary for these occupancies to have an access pathway from the emergency escape and rescue opening to the roof edge so firefighters can evacuate occupants. Also, the words “from the roof edge” are added to the last sentence. This is needed for clarification of how to measure the pathway.

IBC section 3111.3.4.2, Solar photovoltaic systems for roofs with slopes of 2 units vertical in 12 units horizontal and less. The model fire code section 1204.3 refers to all buildings other than Group R-3 and presupposes flat roofs for these buildings. The section is rewritten to specifically address low sloped roofs regardless of occupancy. With this new language, the exception is no longer needed. References in this section and subsections are renumbered to correspond to the building code sections.

IBC section 3111.3.4.2.1, Perimeter pathways. This subsection and its exception are identical to section 1204.3.1 of the 2018 IFC.

IBC section 3111.3.4.2.2, Interior pathways. With one change, this subsection is the same as section 1204.3.2 of the 2018 IFC. The proposed rule adds item 4, which is a requirement for a pathway from an emergency escape and rescue opening to a roof edge. This pathway is necessary to ensure that emergency escape and rescue openings do not have solar panels installed directly beneath them and that such openings can provide the means of egress intended by the code without the added hazard of trying to navigate through a solar array under emergency egress conditions.

IBC section 3111.3.4.2.3, Smoke Ventilation. This subsection is identical to section 1204.3.3 of the 2018 IFC.

Subpart 4. IBC section 3111.3.5, Ground-mounted photovoltaic panel systems. This section is copied from 2018 IFC section 1204.4 with only the code cite changed for coordination with the building code.

Subpart 5. IBC section 3111.3.6, Buildings with rapid shut down. This section and its subsections, figures and table are copied from 2018 IFC section 1204.5. Code cites are changed for coordination with the building code. The only other change is that the second sentence of item 2 in section 3111.3.6.1 has been broken into two sentences for clarity.

[Note: Current rule 1305.3112 has been renumbered 1305.3114.]

1305.3113 SECTION 3113, RELOCATABLE BUILDINGS.

The language of the current rule, relating to solar photovoltaic power systems, is deleted because this topic is addressed in proposed section 1305.3111.

The proposed rule deletes all the subsections of IBC section 3113 (3113.1 through 3113.4) and replaces them with a new section 3113.1. The proposed new section refers readers to Minnesota Rules, chapter 1361. Chapter 1361 addresses the requirements for industrialized and modular buildings. This change is reasonable to direct code users to the correct Minnesota Rules chapter for the requirements for industrialized and modular buildings.

1305.3114 WINDOW CLEANING ANCHORS

IBC section 3114, Window cleaning anchors. Current rule 1305.3112 has been renumbered as 1305.3114 to coordinate with the numbering of the 2018 IBC. For consistent formatting, the title of the section is added at the top and the new IBC section number has been changed to 3114.1.

1305.3401 CHAPTER 34, EXISTING STRUCTURES. Repeal.

This rule part is being repealed because chapter 34, Existing structures, has been removed from the 2018 IBC. As a result, the amendment is no longer applicable and needs to be repealed to correlate with changes made to the 2018 IBC.

1305.3500 CHAPTER 35, REFERENCED STANDARDS.

Subp. 1a. ANSI MH29.1-2012. This subpart is needed to update this standard from the 2008 version to the 2012 version. The 2012 version is the most current version.

Subp. 1b. ANSI A18.1-2017. This subpart is needed to update this standard from the 2014 version to the 2017 version. The 2017 version is the most current version.

Subp. 2. Supplemental standards. This subpart is amended by deleting the reference to the 2011 version of NFPA 45. This standard is no longer needed because chapter 35 of the 2018

IBC includes the 2015 version of NFPA 45, which is a more current standard and is used in the industry.

This subpart is also amended by adding the 2012 editions of NFPA 99 and NFPA Standard 101. The proposed amendment is reasonable and needed to ensure consistent and standard code application and enforcement across state agencies. MDH and DHS have indicated that they are currently enforcing the 2012 editions of NFPA 99 and NFPA 101 and will continue to do so for at least the next six years. The 2018 IBC criteria differ from and are in direct conflict with those of the 2012 NFPA 99 and 2012 NFPA 101 standards.

EFFECTIVE DATE.

Amendments to the Minnesota State Fire Code (chapter 7511) and the following chapters of the building code are being proposed to be effective simultaneously: chapters 1300, 1305, 1307, 1309, 1311, 1323, 1341 and 1346. It is important that amendments to these chapters be effective at the same time because these chapters overlap and all work together. For example, chapter 1300, the Minnesota Administrative Code, contains procedures relating to the administration and enforcement of all the other codes, except the Minnesota State Fire Code, chapter 7511. The Minnesota State Fire Code overlaps with chapter 1305, the Minnesota Building Code. *Compare, e.g.,* Minn. R. 1305.0903 to 1305.0912 *with* Minn. R. 7511.0903 to 7511.0912. The chapters all cross-reference each other. For example, the proposed amendments to chapter 1305 cross-reference not only the fire code but also chapter 1300 (*see* part 1305.0011 and the proposed definition of “historic buildings” in proposed part 1305.0202), chapter 1341 (*see* part 1305.0011, subp. 2 and current rule 1305.1017, to be renumbered 1305.1018), and chapter 1346 (*see* proposed amendment to definition of “alternating tread device” in 1305.0202, proposed rule 1305.0717, subp. 3, proposed rule 1305.0903, subp. 1d, proposed rule 1305.1011, subp. 2, proposed rule 1305.1015, subp. 2a, and proposed rule 1305.1202). Regulations for elevators and conveying systems are being proposed to be moved from chapter 1307 to chapter 1305. Specifically, the current chapter 1307, Elevators and Related Devices, amends the requirements in chapter 30 of the 2012 International Building Code governing elevators and conveying systems. *See* Minn. R. 1307.0095. The proposed chapter 1307 would repeal this part while the proposed chapter 1305 would include amendments to chapter 30 of the 2018 IBC.

Because of the coordination of the fire code and the building code chapters listed above, the commissioner finds that it is necessary for public health and safety that the amendments to the fire code and all chapters of the building code being amended become effective on the same date. If amendments were effective on different dates, there would be inconsistent and in some cases contradictory rules in effect. This would cause confusion as well as potential health and safety problems.

Not only do the amendments to all of these chapters need to be effective simultaneously, but the amendments also need to be effective as soon as possible. Under Minnesota Statutes, section 326B.13, subdivision 8, a rule to adopt or amend the state building code is effective 270 days after publication of the notice of adoption in the State Register. However, the statute allows the Commissioner of Labor and Industry to set an earlier effective date if the commissioner finds that an earlier effective date is necessary to protect public health and safety after considering, among other things, the need for time for training of individuals to comply with and enforce the

rule.

The commissioner finds that it is necessary for public health and safety that the chapters of the building code being amended, as well as amendments to the fire code, become effective as soon as possible. There are many provisions in these chapters that will result in improved public safety. One important example is the regulation of carbon monoxide detection. The proposed chapter 1305 adopts the 2018 IBC; section 915 of the 2018 IBC expands and details the requirements for carbon monoxide detection. Similarly, the proposed chapter 7511 adopts the 2018 International Fire Code; section 915 of the 2018 IFC also expands and details the requirements for carbon monoxide detection. The proposed chapter 1309 adopts the 2018 International Residential Code; section 35 of the 2018 IRC expands and details the requirements for carbon monoxide detection. The proposed chapter 1311 adopts the 2018 International Existing Building Code; sections 503, 804 and 1105 of the 2018 IEBC include new requirements regarding carbon monoxide detection.

The commissioner has determined that March 31, 2020, is the earliest date when all the chapters could be effective, given the large amount of work in amending all of these chapters. In selecting March 31, 2020, or five days after the publication of the notice of adoption, as the effective date for all of these chapters, the commissioner has considered the need for time for training of individuals to comply with and enforce the rules. The model code books have been available since the fall of 2017, despite the edition date of 2018. Many regulated parties are already familiar with the model codes. However, the commissioner recognizes the need for time to train individuals on the Minnesota rules amending the codes.

The commissioner intends to publish the final rules on the department's website as far as possible before the March 31, 2020 date, and before the publication of the notice in the State Register. The commissioner also intends to begin offering training sessions to the regulated parties well before the effective date. Many regulated parties and building code officials responsible for enforcing the building code have been involved in the rule amendment process, and are therefore aware of the proposed amendments. The additional notice plan for all of these rules also ensures that regulated parties are aware of the proposed rules. The commissioner recognizes that, if the rules are to be effective 5 days after publication of the notice in the State Register, it may be necessary to delay that publication so that all of the rule amendments are ready at the same time. However, the commissioner will post the amended rules on its website and begin training before publication of the notice of adoption.

CONCLUSION

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

7/31/19
Date



Nancy J. Leppink, Commissioner
Department of Labor and Industry

EXHIBIT A

1305 Technical Advisory Group Members

Greg Metz, TAG Lead, Department of Labor and Industry

Scott McKown, TAG Co-Lead, Department of Labor and Industry

Jerry Norman, Association of Minnesota Building Officials

Ben Foster, Fire Marshals Association of Minnesota

Gerhard Guth, American Institute of Architects Minnesota

EXHIBIT B

1305 and 7511 Compatibility Technical Advisory Group Members

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Forrest Williams, Minnesota State Fire Marshal Division

David Leschak, American Institute of Architects Minnesota

EXHIBIT C

Construction Codes Advisory Council Members

Scott McLellan, Department of Labor and Industry Commissioner's Designee/Chair

Jim Smith, Department of Public Safety Commissioner's Designee

Scott Novotny, Board of Electricity

Patrick Higgins, Certified Building Official

Ken Hinz, Commercial Building Industry

Thomas Erdman, Commercial Building Owners/Managers

Laura McCarthy, Fire Marshal

Todd Gray, Heating and Ventilation Industry

Gerhard Guth, Licensed Architect

Thomas Downs, Licensed Professional Engineer

Mike Paradise, Licensed Residential Building Industry

Jennifer DeJournett, Local Units of Government

Mark Brunner, Manufactured Housing Industry

Dan McConnell, Minnesota Building and Construction Trades Council