

2024 International Model Codes Review and Update

July 2025

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Technical Advisory Group Review of the 2024 International Model Building Codes

Introduction

The Minnesota Legislature requires the Commissioner of the Department of Labor and Industry to review the International Model Building Codes every six years for their potential adoption as amended for use in Minnesota, beginning with the 2018 edition of the model codes.¹ The Commissioner must consult with the Construction Codes Advisory Council (“CCAC”).² The CCAC is to review the new model codes in order to provide recommendations to the Commissioner for their adoption and recommendations for revisions to current Minnesota Rules.³ To facilitate their review of the model codes, the CCAC appointed nine Technical Advisory Groups (“TAGs”) and their members to review the 2021 and 2024 International Model Building Codes (“I-codes”), compare them to the current Minnesota rules which largely adopt the 2018 I-codes as amended for use in Minnesota, and report their findings.

Each TAG held open meetings that allowed the public to attend and participate in the review and discussion of changes in the 2021 and the 2024 I-codes. As a result, TAG members and the public identified concerns and drafted code change proposals to address those concerns. The TAG members and the public also discussed and identified any significant issues raised by those proposals.

Many of these code change proposals were editorial such as renumbering Minnesota rule parts to align with the 2024 I-codes or deleting code sections from Minnesota rules that are no longer necessary because the 2024 I-codes have adopted similar language. These types of changes recommended by TAG members do not require CCAC review because they do not present meaningful or substantive changes to the provisions of the 2024 I-codes or current Minnesota rules.

This report highlights some of the more significant changes in the 2024 I-codes and those code change proposals that TAG members recommend to the CCAC. The TAG members reviewing the International Residential Code (“IRC”), the energy provisions of chapter 11 of the IRC, and ANSI/ASHRAE/IES Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings (“ASHRAE 90.1”) have not completed their reviews, but an appendix below includes an update on their progress and code change proposals that have been reviewed.

The appendixes also discuss code change proposals that TAG members could not agree to recommend to the CCAC or were reviewed by TAG members since the previous report reviewing the 2024 I-codes, as well as the membership roster for each of the TAGs.

¹ See [Minnesota Statutes, section 326B.106](#).

² See [Minnesota Statutes Section 326B.106, subdivision 1](#).

³ See [Minnesota Statutes Section 326B.07](#).

- Appendix A summarizes code change proposals TAG members did not agree to recommend to the CCAC but identify as areas of concern with the provisions of the 2024 I-codes or current Minnesota code provisions and suggest modifications.
- Appendix B summarizes code change proposals that were reviewed since the previous report of TAG member findings.
- Appendix C summarizes code change proposals reviewed by the members of the Residential Building Code TAG, Residential Energy Code TAG, and Commercial Energy Code TAG. This includes code change proposals that TAG members agreed to recommend to the CCAC, proposals that they did not agree to recommend, and significant proposals that TAG members will review at upcoming meetings.
- Appendix D lists the TAGs, their members, and the organizations they represent.

TAG Recommendations

Commercial Building Code and Fire Code Compatibility TAG (Chapters 1305 and 7511)

Commercial Building Code and Fire Compatibility TAG members met six times to review the 2024 International Building Code (“IBC”) for compatibility with the 2024 International Fire Code (“IFC”). TAG members also reviewed Minnesota Rules, chapter 1305, which adopts the 2018 IBC with amendments and Minnesota Rules, chapter 7511, which adopts the 2018 IFC with amendments. The Commercial Building Code and Fire Compatibility TAG members were in agreement that the 2024 IBC be adopted and recommend the following significant code change proposals as amendments to modify the 2024 IBC to ensure its compatibility with the proposed modifications to the 2024 IFC.

Recommended Code Changes

- Modify section 306.2 of the 2024 IBC to permit water/sewer treatment facilities or portions of those facilities that do not use, process, or store materials that constitute a physical or health hazard to be classified as a Group F-1 occupancy.
- Modify section 310.4.2 of the 2024 IBC to not require automatic sprinkler systems to be provided in owner-occupied lodging houses with five or fewer guest rooms.
- Modify section 907.2 of the 2024 IBC to add elevator equipment rooms to the areas required to have automatic fire detection in certain occupancies including Group A; Group E; Groups I-1, I-2, I-3, and I-4; and Groups R-1, R-2, and R-4.
- Amend existing Minnesota Rules, part 1305.1010, subpart 6, to modify section 1010.1.9.4 of the 2024 IBC to add a new item that requires the means of egress door from retail spaces used by large firearms dealers to remain unlocked from the egress side when the space is occupied while permitting those spaces to comply with the security requirements of Minnesota Rules, part 7504.0300.
- Modify section 3314.1 of the 2024 IBC to permit the fire code official to require a fire watch be provided during nonworking hours for new multi-story construction.

Mechanical and Fuel Gas Code TAG (Chapter 1309)

The Mechanical and Fuel Gas Code TAG members completed their review of the 2024 International Mechanical Code (“IMC”), 2024 International Fuel Gas Code (“IFGC”), and Minnesota Rules chapter 1346, which adopts the 2018 IMC and 2018 IFGC with amendments. The TAG met an additional five times to review chapters 12 through 24 of the 2024 International Residential Code (“IRC”) for adoption as the mechanical and fuel gas requirements for one- and two-family dwellings and townhouses. TAG members received 40 code change proposals. The Mechanical and Fuel Gas Code TAG members recommend that Minnesota Rules, chapter 1309, adopt chapters 12 through 24 of the 2024 IRC with the following significant code change proposals as amendments:

Recommended Code Changes

- Modify section M1411 of the 2024 IRC to require refrigeration systems used in heating and cooling equipment to be installed in accordance with the manufacturer’s installation instructions and permit the installation to comply with ASHRAE 15.2 Safety Standard for Refrigeration Systems in Residential Applications.
- Modify section M1503.6 of the 2024 IRC to maintain makeup air requirements that are similar to those in the current chapter 1346 but with some updates to address the decreased air leakage rates of building envelope due to Minnesota Residential Energy Code requirements.
- Relocate current mechanical ventilation requirements from chapter 1322 to chapter 1309 by modifying section M1505 of the 2024 IRC to require whole-house mechanical ventilation systems that consist of a heat recovery or energy recovery ventilator. This is consistent with energy efficiency requirements in chapter 11 of the 2024 IRC.
- Modify section 1101.1 of the 2024 IMC to allow the use of refrigerants permitted by Minnesota Statutes, section 326B.106, subdivision 17.
- Modify section M2105.1 of the 2024 IRC to require interior and exterior plastic ground source heat-pump loop piping to comply with section M2105 except for exterior piping located more than 15 feet below the ground surface that is required to comply Minnesota Department of Health rules.
- Modify section G2407.5 of the 2024 IRC to provide a table with combustion air requirements for gas-fired appliances.

Conclusion

1. TAG members reviewed the 2024 I-codes and recommend the adoption of the of the 2024 IBC and chapters 12 through 24 of the 2024 IRC.
2. TAG members reviewed and recommended adoption of code change proposals that modify the 2024 I-codes or amend an existing Minnesota code provision as described in this report to promote consistency among the building codes, to ensure uniform safety standards, and to accommodate Minnesota’s climatic conditions.

Appendix A

TAG members did not agree to recommend all code change proposals they reviewed. Although TAG members did not agree to recommend the following code change proposals, the CCAC should be aware of the concerns they identify.

Commercial Building Code and Fire Code Compatibility TAG (Chapters 1305 and 7511)

Other Code Change Proposals

TAG members did not agree to recommend the following code change proposals:

- Modify section 3103 of the 2024 IBC to permit structures erected for a period of less than 210 days to comply with the requirements for temporary structures.
- Modify section 3301 of the 2024 IBC to add a new section with requirements for the partial occupancy of an existing building during construction.

Appendix B

The Structural TAG and the Accessibility Code TAG have previously submitted reviews of their findings. Appendix B includes significant code change proposals that each TAG has reviewed since the previous report in November 2024.

Minnesota Provisions (Chapters 1303)

Structural TAG members recommended amending Minnesota Rules, part 1303.1700, to update the ground snow loads used to determine design snow loads for structures constructed in accordance with the IRC. The proposal updates the ground snow load as follows:

- 60 pounds per square foot in the following counties: Big Stone, Brown, Cook, Cottonwood, Jackson, Lac Qui Prairie, Lake, Lincoln, Lyon, Martin, Murry, Nobles, Pipestone, Redwood, Rock, St. Louis, Traverse, Watonwan, and Yellow Medicine.
- 40 pounds per square foot in the following counties: Dodge, Fillmore, Goodhue, Houston, Kittson, Marshall, Mower, Norman, Olmsted, Pennington, Polk, Red Lake, Roseau, Winona, and Wabasha.
- 50 pounds per a square foot in all other counties.

The ground snow load for buildings constructed in accordance with the IBC is to be determined by that code and in accordance with ASCE 7.

Accessibility Code TAG (Chapter 1341)

The Accessibility Code TAG members met an eighth time to review a code change proposal to modify section 1109 of the IBC to require overhead fixed lifts be provided in Group B medical care and dental facilities and add a new section to chapter 8 of the 2017 edition of the ICC A117.1 Accessible and Usable Buildings and Facilities standard ("ICC A117.1") to clarify existing accessibility requirements that are applicable to exam and treatment rooms. These existing requirements include an accessible route be provided to the space and that a compliant turning space and clear floor space be provided. The TAG members did not agree to recommend requirements for fixed overhead lifts but did recommend the ICC A117.1 be modified to clarify that existing accessibility requirements are applicable to exam and treatment rooms.

Appendix C

The Residential Building Code TAG, Residential Energy Code TAG, and Commercial Energy Code TAG have not completed their reviews. However, Appendix C includes significant code change proposals the TAG members have recommended as amendments and those code change proposals that they did not agree to recommend or will review at an upcoming meeting that identify areas of concern with the provisions of the model code or current Minnesota code provisions and suggest modifications.

Residential Building Code TAG (Chapter 1309)

The Residential Building Code TAG members met seventeen times to review chapters 2 through 10 of 2024 IRC and Minnesota Rules, chapter 1309, which adopts the 2018 IRC with amendments. TAG members received twenty-nine code change proposals. The Residential Building Code TAG members recommend adopting the 2024 IRC with the following significant proposed code changes.

Recommended Code Changes

- Modify section R312.2 of the 2024 IRC to require the floor area of habitable rooms other than kitchens to be not less than 7 feet in any horizontal dimension.
- Modify section R319.5 of the 2024 IRC to exempt replacement windows for emergency escape and rescue openings from the minimum size requirements when they are of the same operating style, are the manufacturer's largest standard size window that will fit within the existing frame or rough opening and are not a part of a change of use of a space that requires an emergency escape and rescue opening. Replacement windows that are of a different operating style must provide a minimum net clear opening of 4 square feet with a minimum net clear opening height of 22 inches and a minimum net clear opening width of 20 inches.
 - The TAG will review a code change proposal at an upcoming meeting that modifies section R319.5 to exempt replacement windows for emergency escape and rescue openings from the minimum size requirements when they are the same operating style as the existing window or a style that provides an equal or greater window opening area than the existing window provided that the replacement window is the manufacturer's largest standard size window that will fit within the existing frame or rough opening and is not part of change of occupancy or the change of use of a space.
- Modify sections R325.1, R325.2, and R325.3 to require dwellings be provided with a mechanical ventilation system and directing code users to chapters 12 through 24 for requirements.
- Modify section R325.8 of the 2024 IRC to add two sections to require forced air heating system in new dwellings to be designed in accordance with section M1201.1 of the 2024 IRC and the installed system to be tested in accordance with industry accepted practices to verify that it is capable of maintaining a room temperature in each habitable room of not less than 68° Fahrenheit at a point 3 feet above the floor and 2 feet from the exterior walls.
- Repeal existing Minnesota Rules, part 1309.0402, to eliminate the current Minnesota requirement that footings be constructed with concrete having a compressive strength of 5,000 psf.

- The Structural TAG members supported the proposal because concrete having a compressive strength of 5,000 psi is not structurally necessary and may not improve foundation durability.
- Amend existing Minnesota Rules, part 1309.0404, to modify the requirements of Tables R404.1.1(5), R404.1.1(6) and R404.1.1(7), to improve the structural capacity of tall, cantilevered concrete and masonry foundation walls.
 - The Structural TAG members supported the proposal.

Other Code Change Proposals

TAG members did not agree to recommend the following code change proposals.

- Modify chapter 3 of the 2024 IRC to add a section that requires parking spaces be provided with one space that is EV capable, EV ready, or EVSE-installed unless the local electric distribution entity certifies that it is unable to provide 100 percent of the necessary distribution capacity within 2 years of the completion of construction or the installation of EVSE infrastructure increases utility costs to the builder by more than \$450 per dwelling unit.

TAG members are also reviewing the following code change proposals.

- Adopt Appendix BJ of the 2024 IRC to permit strawbale construction.
- Adopt Appendix BL of the 2024 IRC to permit hemp-lime construction.

Residential Energy Code TAG (Chapter 1322)

The Residential Energy Code TAG members met nine times to review chapter 11 of 2024 IRC and Minnesota Rules, chapter 1322, which adopts the residential provisions of the 2012 International Energy Conservation Code (“IECC”) with amendments. TAG members received sixteen code change proposals. The Residential Energy Code TAG members recommend adopting chapter 11 of the 2024 IRC with the following significant proposed code changes.

Recommended Code Changes

- Modify section N1101.7 of the 2024 IRC to assign the following counties to climate zone 7: Aitkin, Beltrami, Carlton, Cass, Clearwater, Cook, Crow Wing, Hubbard, Itasca, Kittson, Koochiching, Lake, Lake of the Woods, Mahnomen, Marshall, Norman, Pennington, Pine, Polk, Red Lake, Roseau, St. Louis, Wadena. All other counties are located in climate zone 6A. This is consistent with the climate zones used in the Minnesota Commercial Energy Code.
- Modify section N1102.1.6 of the 2024 IRC to require the combustion air openings of fuel-burning appliances to be interlocked with the main burner to prevent the operation of the appliance when the combustion air supply damper is not fully open.

- Amend existing Minnesota Rules, 1322.0403, subpart 2, to delete requirements for mechanical ventilation. The mechanical ventilation requirements will be relocated to chapter 1309.

Other Code Change Proposals

TAG members continue to review the following code change proposals.

- Modify section N1106.1 of the 2024 IRC to define “residential building” as detached one- and two-family dwellings and townhouses so the Minnesota Residential Energy Code no longer applies to Group R-2, R-3, and R-4 buildings that are 3 stories or less. The scope of Minnesota Rules, chapter 1323, will be modified to include all Group R-2, R-3, and R-4 buildings.
- Modify section N1102.5.1.3 of the 2024 IRC to change the air leakage metric from air changes per hour at 50 Pascals (“ACH50”) to cubic feet per a minute at 50 Pascals (“CFM50”) and require buildings to comply with an air leakage rate not greater than 0.18 CFM per square foot. The change in metrics allows air leakage to be assessed based on the exterior envelope area of the building.
- Delete section N1105 of the 2024 IRC to eliminate the simulated building performance compliance option.
 - Some TAG members were concerned that the proposal will increase the cost of construction by eliminating a compliance option that allows for additional design flexibility. Other TAG members were concerned that the simulated building performance is too complex compared to the other performance option, the Energy Rating Index (“ERI”), and will allow for dwellings with less energy efficient building envelopes than those constructed in compliance with prescriptive requirements.

TAG members did not agree to recommend the following code change proposal.

- Modify section N1104 of the 2024 IRC to add a new section that requires electrification ready circuits be provided for appliances that use fuel gas or liquid fuel, such as water heaters, clothes dryers, and cooking appliances.

Commercial Energy Code TAG (Chapter 1323)

The Commercial Energy Code TAG members met seven times to review the 2022 edition of ANSI/ASHRAE/IES Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings (“ASHRAE 90.1”) and Minnesota Rules, chapter 1323, which adopts the 2019 edition of ASHRAE 90.1 with amendments. TAG members received nine code change proposals. The Commercial Energy Code TAG members recommend adopting the 2022 edition of ASHRAE 90.1-2022 with the following significant proposed code changes.

Recommended Code Changes

- Modify Table 5.5-6 of ASHRAE 90.1-2022 to reduce the U-factor for dwelling unit windows.

- Modify section 5.1.4 of the ASHRAE 90.1-2022 to delete exception 9. The deletion of exception 9 will require all replacement windows to comply with the U-factor requirements of the current Minnesota Commercial Energy Code.

Other Code Change Proposals

TAG members did not agree to recommend the following code change proposal.

- Modify section 6.5.10 of the ASHRAE 90.1-2022 to exempt exterior doors of individual dwellings from the requirement that a door switch be provided that disables or resets the mechanical heating or cooling within five minutes of the door opening.

Appendix D

The CCAC appointed eleven TAGs and their members to review the 2021 and 2024 International Model Building Codes (“I-codes”), compare them to the current Minnesota rules, which largely adopt the 2018 I-codes as amended for use in Minnesota. The members of the TAG were appointed to represent associations with experience with each of the model codes. Below is a list of TAG members and the organizations they represent.

Commercial Building Code and Fire Code Compatibility TAG

TAG representation	Member	Employer	Association
DLI staff	Ryan Rehn	DLI	CCLD
	Britt McAdamis	DLI	CCLD
	Dean Mau	DLI	CCLD
Municipal building official	Jerry Norman	City of Rochester	AMBO
	Steve Ubl	City of St. Paul	AMBO
Code compliance	Jim Williamette	City of St. Paul	AMBO
State Fire Marshal	Forrest Williams	State Fire Marshal	
Licensed design professional	Vince DiGiorno	KOMA Inc	MN AIA
	Scott Oswald	IGH Architects & Engineers	FMAM

Residential Building Code TAG

TAG representation	Member	Employer	Association
DLI staff	Terence Olson	DLI	Construction Codes and Licensing Division (“CCLD”)
	Jesse Szykulski	DLI	CCLD
	Chris Rosival	DLI	CCLD
Code compliance	Lisa Hartwig	City of Minneapolis	Large Municipalities
	Steve Kartak	City of Eden Prairie	AMBO

	Greg Olson	ProEd Resources	AMBO
	Keith Demarest	City of Anoka	AMBO
	Nathan Webter	City of Detroit Lakes	AMBO
Residential building industry	Curtis Johnson	Pulte Homes	Housing First Minnesota
Licensed architect	Kyle Thrapp	McMonigal Architects	American Institute of Architects Minnesota (MN AIA)

Residential Energy Code TAG

TAG representation	Member	Employer	Association
DLI staff	Steve Shold	DLI	CCLD
	Chris Rosival	DLI	CCLD
Code compliance	Randy King	Prokore	Building officials
Residential builders	Greg Olson	Olson Associates Consulting	Builders Association of Minnesota (BAM)
	Eric Boyd	ARCXIS	Housing First Minnesota
	Jim Kummon	Heirloom Properties	Small developers
	Mike Robertson	Habitat for Humanity	NGO home builders
Mechanical engineer	John Smith	Consultant	Practical Engineering
Licensed architect	Alyssa Jagdfeld	SALA Architects	MNAIA
Energy advocacy	Isaac Smith	Center for Energy and Environment	Residential programs
	Eric Fowler	Fresh Energy	Public interest and energy conservation
	Alison Lindburg	Midwest Energy Efficiency Alliance	Energy advocacy

Commercial Energy Code TAG

TAG representation	Member	Employer	Association
DLI staff	Steve Shold	DLI	CCLD
	Chris Rosival	DLI	CCLD
Municipal building official	Dennis Schilling	City of West St. Paul	AMBO
Licensed architects	Rachael Spires	BWBR Architects	MN AIA
Engineering	John Smith	Consultant	Mechanical Engineering
	Russ Landry	Center for Energy and Environment	Energy Conservation Engineer
	Eric Johansen	CenterPoint Energy	Energy Efficiency Engineer
	Richard Hermans	Mechanical Engineering	MN Chapter of ASHRAE
Energy advocacy	Michael Waite	American Council for an Energy-Efficient Economy	Energy conservation advocate
	Sam Friesen	Fresh Energy	Building energy efficiency
	Chris Burgess	Midwest Energy Efficiency Alliance	Energy advocacy

Accessibility Code TAG

TAG representation	Member	Employer	Association
DLI staff	Karen Gridley	DLI	CCLD
	Lee Gladitsch	DLI	CCLD
Municipal building official	Dave Matthews	City of Lakeville	AMBO
	Chris Machmer	City of Duluth	AMBO
Licensed design professionals	Haidee Tan	MN AIA	MN AIA
Accessibility specialist	David Fenley	Minnesota Council on Disability	
	Mara Peterson	Julee Quarve-Peterson, Inc	CCAC

Commercial plan reviewer	Dori Dufresne	University of Minnesota	Post secondary education
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Mechanical and Fuel Gas Code TAG

TAG representation	Member	Employer	Association
DLI staff	Chris Rosival	DLI	CCLD
	Tim Manz	DLI	CCLD
Building officials	Kevin Johnson	City of St. Cloud	Mechanical inspectors
	Kirk Luthe	City of Rochester	AMBO
	Brian Stemwedel	City of Golden Valley	AMBO
Licensed design professional	Jennifer Books	Miller Dunwiddie	MN AIA
Mechanical engineers	John Smith		American Council of Engineering Companies of MN
	Lewis Johnson		ASHRAE
Trade union representative	Mario Salute	City of St. Paul	Sheet Metal Workers Local #10
Mechanical inspector	Troy Burger	University of Minnesota	Post secondary education

Structural TAG

TAG representation	Member	Employer	Association
DLI staff	Dan Kelsey	DLI	CCLD
	Wendy Rannenberg	DLI	CCLD
Municipal building official	Kyle Dimler	City of Hutchinson	AMBO
	Randy Johnson	City of Maplewood	AMBO
Licensed engineers	Craig Oswell	Oswell Engineering and Consulting, LLC	BAMN
	Christopher Kehl	Braun Intertec	ACEC, MnSEA

	John Timm	BKBM Structural & Civil Engineers	MN AIA, AIA, ACEC, MnSEA
	Mitch Okeson	Sandman Engineering	MnSEA, ACEMN
	Rueben Verdoljack	LHB	MnSEA, ACEMN
Building performance	Eric Boyd	Arcxis	Housing First Minnesota