

# New Changes in Residential Energy Code TAG Review Worksheet

**Model Code: 2021 IECC (Residential Portion)**

To be completed by Chair								To be completed by TAG members				
Item No.	Minnesota Code Section	"I" Code Section	Subject	Current Minnesota Amend	Description of Change	Safety & Health Value	Cost Impact	Recommendation: A - Accept R - Reject AM - Amend Comments	Recommendation A - Accept R - Reject AM - Amend	TAG Group Consensus	Stakeholder Consensus	Comments
				Y or N		N=None, L=Low M=Med, H=High	Y or N			Y or N		
1322-01	MR 1322.0010 Subp 1		General.	Y	Update reference to 2021 IECC, include chapter 6 in list of referenced chapters.			AM - Update reference to 2021 IECC, include chapter 6 in list of referenced chapters.				
1322-02	MR 1322.0010 Subp 2		Mandatory chapters.	Y	Update reference to 2021 IECC, include chapter 6 in list of referenced chapters.			AM - Update reference to 2021 IECC, include chapter 6 in list of referenced chapters.				
1322-03	MR 1322.0010 Subp 3		Replacement chapters.	Y								
1322-04	MR 1322.0015 Subp 1		Administration.	Y								
1322-05	MR 1322.0015 Subp 2		Purpose.	Y								
1322-06	MR 1322.0030 Subp 1		Generally.	Y								
1322-07	MR 1322.0030 Subp 2		Building code.	Y								
1322-08	MR 1322.0030 Subp 3		Residential code.	Y								
1322-09	MR 1322.0030 Subp 4		Electrical code.	Y								
1322-10	MR 1322.0030 Subp 5		Fuel gas code.	Y								
1322-11	MR 1322.0030 Subp 6		Mechanical code.	Y								
1322-12	MR 1322.0030 Subp 7		Plumbing code.	Y								
1322-13	MR 1322.0030 Subp 8		Private sewage disposal code.	Y								
1322-14	MR 1322.0030 Subp 9		Energy conservation code.	Y								
1322-15	MR 1322.0030 Subp 10		Property maintenance code.	Y								
1322-16	MR 1322.0030 Subp 11		Accessibility code.	Y								
1322-17	MR 1322.0040		Administrative procedure criteria.	Y								

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1322-18	MR 1322.0100 Subp 1		Administration.	Y									
1322-19	MR 1322.0100 Subp 2		Scope.	Y									
1322-20	MR 1322.0100		Applicability.	Y									
1322-21	MR 1322.0100 Subp 3A		Additions, alterations, renovations, or repairs.	Y									
1322-22	MR 1322.0100 Subp 3B		Change in occupancy or use.	Y									
1322-23	MR 1322.0100 Subp 3C		Change in space conditioning.	Y									
1322-24	MR 1322.0100 Subp 3D		Mixed occupancy.	Y									
1322-25	MR 1322.0100 Subp 4		Compliance.	Y									
1322-26	MR 1322.0103		Construction documents.	Y									
<b>CHAPTER 2</b>													
202-1	R202	R202	Definition: Access (to)	N	New definition: "That which enables a device, appliance or equipment to be reached by ready access or by a means that first requires the removal or movement of a panel or similar obstruction."			A - Adopt as written					
202-2	R202	R202	Definition: Approved Agency	N	Definition : "An established and recognized agency that is regularly engaged in conducting tests or furnishing inspection services, or furnishing product certifications, where such agency has been approved by the code official."			A - Adopt as written					
202-3	R202	R202	Definition: Balanced System	N	Definition : "A ventilation system in which the air intake is within ten percent of the exhaust output."			A - Adopt as written					
202-4	R202	R202	Definition: Cavity Insulation	N	New definition: "Insulating material located between framing members."			A - Adopt as written					

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202-5	R202	R202	Definition: Circulating hot water system	N	New Definition: "A specifically designed water distribution system where one or more pumps are operated in the service hot water piping to circulate heated water from the water-heating equipment to the fixture supply and back to the water-heating equipment."			A - Adopt as written					
202-6	R202	R202	Definition: Climate Zone	N	New Definition: "A geographical region based on climatic criteria as specified in this code."			A - Adopt as written					
202-7	R202	R202	Definiton: Continuous Insulation	N	New Definition: "Insulation material that is continuous across all structural members without thermal bridges other than fasteners and service openings. It is installed on the interior or exterior or is integral to any opaque surface of the building envelope."			A - Adopt as written					
202-8	R202	R202	Definition: Demand Recirculation Water System	N	Revised definition: "A water distribution system where <u>one or more</u> pumps prime the service hot water piping with heated water upon demand for hot water."			A - Adopt as written					
202-9	R202	R202	Definition: Dimmer	N	New Definition: A control device that is capable of continuously varying the light output and energy use of light sources."			A - Adopt as written					
202-10	R202	R202	Definition: Dwelling Unit Enclosure Area	N	New Definition: The sum of the area of ceiling, floors, and walls separating a dwelling unit's conditioned space from the exterior or from adjacent conditioned or unconditioned spaces. Wall height shall be measured from the finished floor of the dwelling unit to the underside of the floor above.			A - Adopt as written					
202-11	R202	R202	Definition: Energy Simulation Tool	N	New Definition: "An approved software program or calculation-based methodology that projects the annual energy use of a building."			A - Adopt as written					
202-12	R202	R202	Definition: ERI Reference Design	N	New Definition: A version of the rated design that meets the minimum requirements of the 2006 IECC.			Discuss					

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202-13	R202	R202	Definition: Fenestration	N	<b>Revised Definition:</b> Products classified as either vertical fenestration or skylights. <b>Skylights.</b> Glass or other transparent or translucent glazing material installed at a slope of less than 60 degrees from horizontal including unit skylights, tubular daylighting devices, and glazing materials in solariums, sunrooms, roofs and sloped walls. <b>Vertical Fenestration:</b> Windows that are fixed or operable, opaque doors, glazed doors, glazed block and combination opaque/glazed doors composed of glass or other transparent or translucent glazing materials and installed at a slope of not less than 60 degrees from horizontal.			A - Adopt as written				
202-14	R202	R202	Definition: F-Factor	N	Definition Deleted.			A - Adopt as written				
202-15	R202	R202	Definition: Furnace	N	Definition Deleted.			A - Adopt as written				
202-16	R202	R202	Definition: High Efficacy Light Sources	N	Revised Definition: Compact fluorescent lamps, light-emitting diode (LED) lamps, T-8 or smaller diameter linear fluorescent lamps or other lamps with an efficacy of not less than 65 lumens per watt, or luminaires with an efficacy of not less than 45 lumens per watt.			A - Adopt as written				
202-17	R202	R202	Definition: Historic Building	N	Any building or structure that is one or more of the following: 1) Listed or certified as eligible for listing by the State Historic Preservation Officer or the Keeper of the National Register of Historic Places, in the National Register of Historic Places. 2) Designated as historic under an applicable state or local law. 3) Certified as a contributing resource within a National Registered-listed, state-designated or locally designated historic district.			AM				
202-18	R202	R202	Definition: Insulating sheathing	N	Definition Deleted.			A - Adopt as written				

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202-19	R202	R202	Definition: Insulated siding	N	New definition: A type of continuous insulation with manufacturer-installed insulating material as an integral part of the cladding product having an R-value of not less than R-2.			A - Adopt as written					
202-20	R202	R202	Definition: Manufacturer's Installation Instructions	N	Definition Deleted.			A - Adopt as written					
202-21	R202	R202	Definition: Mechanical ventilation	N	Definition Deleted.			A - Adopt as written					
202-22	R202	R202	Definition: Occupant sensor control	N	New definition: An automatic control device that detects the presence or absence of people within an area and causes the lighting, equipment or appliances to be regulated accordingly.			A - Adopt as written					
202-23	R202	R202	Definition: On-Site Renewable Energy	N	New definition: Energy from renewable energy resources harvested at the building site.			A - Adopt as written					
202-24	R202	R202	Definition: Opaque door	N	New definition: A door that is not less than 50 percent opaque in surface area.			A - Adopt as written					
202-25	R202	R202	Definition: Rated Design	N	New definition: A description of the proposed building used to determine the energy rating index.			A - Adopt as written					
202-26	R202	R202	Definition: Ready Access (to)	N	New definition: That which enables a device, appliance or equipment to be directly reached without requiring the removal or movement of any panel or similar obstruction.			A - Adopt as written					
202-27	R202	R202	Definition: Renewable Energy Certificate (REC)	N	New definition: An instrument that represents the environmental attributes of one megawatt hour of renewable energy, also known as an energy attribute certificate (EAC).			A - Adopt as written					
202-28	R202	R202	Definition: Renewable Energy Resources	N	New definition: Energy derived from solar radiation, wind, waves, tides, landfill gas, biogas, biomass, or extracted from hot fluid or steam heated within the earth.			A - Adopt as written					

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202-29	R202	R202	Definition: Reroofing	N	New definition: The process of recovering or replacing an existing roof covering. See "Roof recover" and "Roof replacement."			A - Adopt as written					
202-30	R202	R202	Definition: Roof Assembly	N	Definition Deleted.			A - Adopt as written					
202-31	R202	R202	Definition: Roof Recover	N	New definition: The process of installing an additional roof covering over an existing roof covering without removing the existing roof covering.			A - Adopt as written					
202-32	R202	R202	Definition: Roof Repair	N	New definition: Reconstruction or renewal of any part of an existing roof for the purpose of its maintenance.			A - Adopt as written					
202-33	R202	R202	Definition: Roof Replacement	N	New definition: The process of removing the existing roof covering, repairing any damaged substrate and installing a new roof covering.			A - Adopt as written					
202-34	R202	R202	Definition: Skylight	N	Definition Deleted.			A - Adopt as written					
202-35	R202	R202	Definition: Thermal Distribution Efficiency (TDE)	N	New definition: The resistance to changes in air heat as air is conveyed through a distance of air duct. TDE is a heat loss calculation evaluating the difference in the heat of the air between the air duct inlet and the outlet caused by differences in temperatures between the air in the duct and the duct material. TDE is expressed as a percent difference between the inlet and outlet heat in the duct.			A - Adopt as written					
<b>CHAPTER 3</b>													
SECTION R301 GENERAL													
301-1	R301.1	R301.1	Climate zones, general.	N	Minor changes to text. Same net outcome.	N	N	A - Adopt as written					
301-2	Figure R301.1	Figure R301.1	Climate zone map.	N	Updated climate zone map.			A - Adopt as written					
301-3	Table R301.1	Table R301.1	Climate Zones.	N	10 counties affected between '21 IECC and '15 MRE. (Becker, Clay, Fillmore, Grant, Houston, Kanabec, Mille Lacs, Otter Tail, Wilkin, Winona.) Suggest amending to delete all states other than MN.			AM					
301-4	R301.2	R301.2	Warm Humid Counties.	N	No change and no affect on Minnesota. Suggest amending to delete.			AM					

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301-5	R301.3 & Table R301.3(1)	R301.3	Climate zones.	N	This section has been changed from "International climate zones" to "Climate zone definitions". Changes tabular format in 2015 MRE to paragraph form. Largely has little implications for MN.			A - Adopt as written					
301-6	Table R301.3(2)	Table R301.3	Thermal climate zone definitions.	N	Gives cooling and heating degree days based on climate zone. Could amend to remove zones 1-4.			A - Adopt as written					
301-7	None	R301.4	Tropical Climate region.	N	New section with no affect on Minnesota. Suggest deleting.	N	N	AM					
SECTION R302 DESIGN CONDITIONS													
R302-1	R302.1	R302.1	Interior design conditions.	N	No change.	N	N	A - Adopt as written					
SECTION R303 MATERIAL, SYSTEMS AND EQUIPMENT													
303-1	R303.1	R303.1	Material identification.	Y	The MRE expands to include 3 additional criteria.  R303.1 Identification. Materials, systems, and equipment shall be identified in a manner that will allow a determination of compliance with the applicable provisions of this code. <b>Materials used shall be: (1) listed for the intended use; (2) installed in accordance with the manufacturer's installation instructions; and (3) installed by an installer who is certified by a manufacturer to install that specific product, if such certification exists.</b>	L	L	Comment: Suggest maintaining <b>current MRE language.</b>					
303-2	R303.1.1	R303.1.1	Building thermal envelope insulation	N	Minor changes to text, same net outcome. Exception has been added in IECC for insulation installed above the roof deck along with references to the IRC & IBC.  <u>Exception: For roof insulation installed above the deck, the R-value shall be labeled as required by the material standards specified in Table 1508.2 of the International Building Code or Table R906.2 of the International Residential Code, as applicable.</u>	N	N	A - Adopt as written					



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303-3	R303.1.1.1	R303.1.1.1	Blown/sprayed roof insulation	N	Minor changes to text. Same net outcome.	N	N	A - Adopt as written					
303-4	R303.1.2	R303.1.2	Insulation Mark Installation.	N	<p>Similar language, but IECC now addresses blown or draped insulation products by requiring that an insulation certificate is left immediately after installation in a conspicuous area.</p> <p>Insulation mark installation. Insulating materials shall be installed such that the manufacturer's R-value mark is readily observable at inspection. <u>For insulation materials that are installed without an observable manufacturer's R-value mark, such as blown or draped products, an insulation certificate complying with Section R303.1.1 shall be left immediately after installation by the installer, in a conspicuous location within the building, to certify the installed R-value of the insulation material.</u></p>	L	L	A - Adopt as written					



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303-5	R303.1.3	R303.1.3	Fenestration product rating.		Modified section: U-factors of fenestration products such as windows, doors, and skylights shall be determined in accordance with NFC 100. <u>Exception: Where required, garage door U-factors shall be determined in accordance with either NFRC 100 or ANSI/DASMA 105.</u> U-factors shall be determined by an accredited independent laboratory, and labeled and certified by the manufacturer. Products lacking such a labeled U-factor shall be assigned a default U-factor from Table R303.1.3(1) or Table R303.1.3(2). The solar heat gain coefficient (SHGC) and visible transmittance (VT) of glazed fenestration products such as windows, glazed doors and skylights shall be determined in accordance with NFRC 200 by an accredited, independent laboratory, and labeled and certified by the manufacturer. Products lacking such a labeled SHGC or VT shall be assigned a default SHGC or VT form Table 303.1.3(3).	L		A - Adopt as written				
303-6	R303.1.4	R303.1.4	Insulation product rating.	N	Sentence has been restructured, no technical changes made.	N	N	A				
303-7	R303.1.4.1	R303.1.4.1	Insulated Siding.	N	New Section: <u>The thermal resistance, R-value, of insulation shall be determined in accordance with ASTM C1363. Installation for testing shall be in accordance with the manufacturer's instructions.</u>	L	L	A - Adopt as written				
303-8	R303.1.5	R303.1.5	Air-impermeable insulation.	N	New section: <u>Insulation having an air permeability not greater than 0.004 cubic feet per minute per square foot under pressure differential of 0.3 inch water gauge when tested in accordance with ASTM E2178 shall be determined air-impermeable insulation.</u>	N	N	A - Adopt as written				

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303-9	R303.1.5	NA	Minnesota Thermal Insulation Standards.	N	Section does not exist in the IECC. Renumber to 303.1.6 and retain existing amendment as follows: <b>Thermal insulation shall comply with Minnesota Rules, Chapter 7640, Minnesota Thermal Insulation Standards, adopted by the Department of Commerce.</b>	L	L	AM					
303-10		R303.2	Installation.	N	Updated section now includes reference to IRC. Materials, systems and equipment shall be installed in accordance with the manufacturer's installation instructions and the International Building Code or the International Residential Code, as applicable.			A - Adopt as written					
303-11	R303.2.1	R303.2.1	Protection of exposed foundation insulation.	N	Very minor changes to language. Same net effect.	N	N	A - Adopt as written					
303-12	R303.3	R303.3	Maintenance information.	N	One word changed: "accessible" label in MRE, "visible" label in IECC.	N	N	A - Adopt as written					
<b>CHAPTER 4</b>													
SECTION R401 GENERAL													
401-1	R401.1	R401.1	Scope.	N	No change.	N	N	A - Adopt as written					
401-2	R401.2	R401.2	Application/ Compliance.	N	Different language in 2021 IECC. With the new paths in the '21, plus the "Existing Buildings" content, the language needs updating.			A - Adopt as written					
401-3	NA	R401.2.1	Prescriptive option.	N	This and the following sections provide guidance to understand which subsequent sections must be used depending on the compliance path chosen. This guides the user to R401 General, R402 Building Thermal Envelope, R403 Systems, and R404 Electrical Power and Lighting.								
401-4	NA	R401.2.2	Total building performance option.	N	This path guides the user to R405 Total Building Performance.								
401-5	NA	R401.2.3	Energy Rating Index (ERI) option.	N	This path guides the user to R406 ERI Compliance Alternative.								
401-6	NA	R401.2.4	Tropical climate region option.	N	This path guides the user to R407 Tropical Climate Region Compliance Path. No relevance to MN as we are not tropical.	N	N	AM - Delete section.					

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401-7	NA	R401.2.5	Additional energy efficiency.	N	This section identifies additional items that must be adhered to based on which compliance path is selected.								
401-8	R401.3	R401.3	Certificate.	Y	Similar language between MN & '21 text, suggest combining to take the best of both sections and remove irrelevant content. Maintain numbered format as it reads better.			AM - Combine relevant and best language between MRE & IECC.					
SECTION R402 BUILDING THERMAL ENVELOPE													
402-1	R402.1	R402.1	General.	N	The leading paragraph includes the addition of a reference to R402.1.5 due to differences in the content and layout of the codes in R402.1.1 - 402.1.5.		M						
402-2	NA	R402.1.1	Vapor retarder.	N	Provides a pointer to the IRC or IBC as applicable, where vapor retarders are addressed.	N	N	A - Adopt as written					
402-3	R402.1.1	R402.1.2	Insulation and fenestration criteria.	Y	In MN code, waterproofing is also addressed in this section due to statutory durability requirements. U-factor and SHGC are also noted with a reference to Table R402.1.2.			AM - Include waterproofing content from MRE.					
402-4	Table R402.1.3	Table R402.1.2	Maximum assembly U-factors and fenestration requirements.	N	U-factor table is now located earlier in the IECC, it is one section later in the MRE. Comparing the tables, the IECC is slightly more efficient and fenestration U-factor decreases from .32 to .30. Skylights are unchanged. Ceiling U-factor reduces from .026 to .024. Mass walls, floors, basement walls and crawl space walls did not change in zones 5-8.  Suggest deleting zones 0-4, as well as climate zones marine 4 and 8. MN will now need Zone 5 for SE MN.	L	M	AM - Delete zones 0-4, as well as climate zones marine 4 and 8. Only leave zones 5-7. Footnotes: Delete references to zones other than 5-7 in b. Delete c, e, & f (highest point in MN is 2,301ft above sea level). Delete exception in d.					

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402-5	NA	R402.1.3	R-value alternative.		The '21 IECC takes a slightly different angle in that it lists the U-factor approach and table before the R-value approach and table. This section simply allows the use use of R-values and points the user to the R-value table (R402.1.3) in lieu of using U-factors. IECC Table R402.1.3 is Table R402.1.1 in the MRE.	N	N	A - Adopt as written					
402-6	Table R402.1.1	Table R402.1.3	Insulation Minimum R-values and Fenestration Requirements by Component.		Table has been retitled and updated with greater efficiencies for components. MN will need Zone 5 for SE MN. U-factors have been copied over from U-factor table, however there is a mistake in the SHGC. The intention is that the SHGC is not required in Zone 5, but the table states zone 5 is to meet 0.40, but states NR in Table 402.1.2. This will be fixed in the '24 IECC-R. We could consider removing the U-factor columns from the R-value table altogether and leaving U-factors in the Table 402.1.2.  Regarding R-values, ceiling has increased from 49 to 60, wood frame walls increase and add additional CI options: 20 + 5ci, 13 + 10ci, or 0 + 20. 30 is added in the erratum.  Note there are other Erratum to this section to consider.	L	H	AM - Delete exception to footnote b, and delete footnotes e, f, and i as it does not pertain to MN. Consider deleting U-factor content. Change SHGC in Zone 5 to NR.					
402-7	R402.1.2	R402.1.4	R-value computation.	N	This section exists in the MRE for the most part, but is expanded and clarified in the IECC. The point of the section is that the user cannot just add up the R values of multiple components. Rather, the components must be summed based on the relative location in the assembly.	L	L	A - Adopt as written					
402-8	R402.1.4	R402.1.5	Total UA alternative.	N	Expands on content in MRE. Adds instruction that calculation must be in accord with ASHRAE Handbook of Fundamentals.	L	L	A - Adopt as written					
402-9	R402.2	R402.2	Specific insulation requirements.	N	The word "(Prescriptive)" was removed in the IECC.	N	N	A - Adopt as written					

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402-10	R402.2.1	R402.2.1	Ceilings with attic spaces.	N	This section reads essentially the same as in the MRE, except the R values are increased to parallel those in Table R402.1.3. Allows a reduced insulation value where a uniform thickness of insulation can be accommodated due to an adequately tall energy heel.  Suggest deleting first sentence, as R-49 only applies to Zone 3 and south. Zones 5-7 all require the same attic R-value. Leaving the first sentence leads to confusion as to what the actual attic requirements are, as users do not realize the MN edition stems from model code language.	L	M	AM - Delete first sentence.					
402-11	R402.2.2	R402.2.2	Ceilings without attic spaces.	N	These sections are nearly identical in both codes. There are minor changes to the exact language in the IECC. The overall application is the same.	N	N	A - Adopt as written					
402-12	R402.2.3	R402.2.3	Eave baffle	N	The IECC has added content in this section to further clarify the intent. The overall outcome is the same.			A - Adopt as written					
402-13	R402.2.4	R402.2.4	Access hatches and doors.	N	Similar language to the MRE. Two exceptions are added. Recommend deleting the second exception as it does not pertain to MN climate zones.	N	N	AM - Delete second exception.					
402-14	NA	R402.2.4.1	Access hatches and door insulation installation and retention.	N	Similar language to the MRE with revisions.	N	N	A - Adopt as written					
402-15	R402.2.5	R402.2.5	Mass walls.	N	Similar language to the MRE with revisions. Added an empirical specification regarding walls with a heat capacity greater than or equal to 6 Btu/SF x degrees F.	N	N	A - Adopt as written					
402-16	R402.2.6	R402.2.6	Steel-frame ceilings, walls and floors.	N	Same content in MRE, just updated the reference to Table R402.1.2 for U-factors.	N	N	A - Adopt as written					
402-17	Table R402.2.6	Table R402.2.6	Steel-frame ceiling, wall and floor insulation R-values.	N	Some of the R-values have been updated in the IECC. MN does not often frame houses in steel, so this content has little impact.	N	N	A - Adopt as written					

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402-18	R402.2.7	R402.2.7	Floors.	N	<p>This section has been updated to differentiate among 3 potential prescriptive ways to install the insulation: 1). It is in contact with the bottom of the subfloor.</p> <p>2). It is contact with top of the ceiling below, with airspace between the top of the insulation and the bottom of the subfloor. Requires the outer perimeter to have full depth insulation so the rim area is not left uninsulated.</p> <p>3). The third is like option #2, but incorporates continuous insulation.</p> <p>I see no problem with the outcome of this section, but suggest considering changing the language to make it more clear, or adding pictures as it is confusing to read.</p>	L	L	AM - Consider adjusting to make easier to understand.				
402-19	R402.2.8	R402.2.8	Basement walls.	Y	<p>For the prescriptive path, the MRE requires a minimum of R-10 to be on the exterior of the wall, whereas the IECC does not specify which side of the wall the insulation must be. The content in the MRE was based on building science research and may need to be evaluated again based on statute.</p> <p>The charging language in the IECC requires all basements to be insulated, then gives an exception where 6 items must be met. In the MRE, the requirements only apply to conditioned basements. The IECC is more restrictive in that the exceptions limit the ability to have an unconditioned basement. This is largely irrelevant in MN as we rarely see unconditioned basements.</p>	M	L	Comment: May be subject to building science research.				

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402-20	R402.2.8	R402.2.8.1	Basement wall insulation installation.	Y	This section addresses how far the insulation must be installed down the wall. The IECC requires it to go to the top of the floor, whereas the MRE requires it to go to the top of the footing. Some if this depends if the insulation is installed on the interior or exterior of the wall. Given most foundation insulation is installed on the exterior in MN, the MRE is slightly more restrictive. The sections are very similar. The content may change based on building science research.	L	L	Comment: May be subject to building science research.				
402-21	R402.2.9	R402.2.9	Slab-on-grade floors.	N	The IECC and MRE essentially have the same content, except that the IECC divides the content into two main sections like the basement insulation content: main requirement including an exception, then how it must be done.	N	N	A - Adopt as written				
402-22	R402.2.9	R402.2.9.1	Slab-on-grade floor insulation installation.	N	Merely restructures same content that is in MRE.	N	N	A - Adopt as written				
402-23	R402.2.10	R402.2.10	Crawl space walls.	N	The IECC and MRE essentially have the same content, except that the IECC divides the content into two main sections like the basement insulation content: main requirement including an exception, then how it must be done.  The issue with this section in the MRE is that it was never amended to align with the basement provisions. A conditioned crawl space is essentially just a short basement. Therefore, it seems to make sense to parallel foundation insulation requirements for conditioned crawl spaces with those of conditioned basements.	N	N	AM - Amend to parallel language for conditioned basements. May be subject to building science research.				
402-24	R402.2.10	R402.2.10.1	Crawl space wall insulation installations.	N	See comments for R402.2.10 directly above.	N	N	See comments for R402.2.10 directly above.				
402-25	R402.2.11	R402.2.11	Masonry veneer.	N	No changes.	N	N	A - Adopt as written				



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402-26	R402.2.12	R402.2.12	Sunroom and heated garage insulation.	N	Thermal envelope provisions for garages are now specifically addressed in the energy code. The exceptions and R-values given for thermally isolated sunrooms are the same as in the MRE, and now also apply to garages.	N	N	A - Adopt as written					
402-27	R402.3	R402.3	Fenestration.	N	The content is the same as the MRE, except that reference to R402.3.6 (Replacement fenestration) has been removed as the section is no longer located here.	N	N	A - Adopt as written					
402-28	R402.3.1	R402.3.1	U-factor.	N	No changes.	N	N	A - Adopt as written					
402-29	R402.3.2	R402.3.2	Glazed fenestration SHGC.	N	Same content in MRE, but added section regarding dynamic glazing. Serves no purpose in MN as we do not regulate SHGC.	N	N	A - Adopt as written, could also be deleted.					
402-30	R402.3.3	R402.3.3	Glazed fenestration exemption.	N	The language is slightly different in the IECC, but the outcome is essentially the same. The SHGC content will not affect MN. Interesting use of the word "shall" vs. "may" in terms of applying the exemption.	N	N	Comment: Either adopt as written, or amend to use language in MRE.					
402-31	R402.3.4	R402.3.4	Opaque door exemption.	N	The language is slightly different in the IECC, but the outcome is essentially the same. Interesting use of the word "shall" vs. "may" in terms of applying the exemption.								
402-32	R402.3.5	R402.3.5	Sunroom and heated garage fenestration.	N	Section clarifies its application to sunrooms as well as heated garages. Heated garages are presently not explicitly addressed in the MRE. The exception to allow reduced U-factor remains the same in MN climate zones. The section adds clarification for new fenestration separating sunrooms or heated garages.	N	N	A - Adopt as written					
402-33	R402.4	R402.4	Air leakage.	N	Same provision in the MRE, but now includes reference to the additional section of R402.4.5.	N	N	A - Adopt as written					
402-34	R402.4.1	R402.4.1	Building thermal envelope.	N	Same provision in the MRE, but now includes reference to the additional section of R402.4.1.3.	N	N	A - Adopt as written					
402-35	R402.4.1.1	R402.4.1.1	Installation.	N	Same language as the MRE.	N	N	A - Adopt as written					

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402-36		Table R402.4.1.1	Air barrier, air sealing and insulation installation.	N	The table is very similar to the MRE, with minor updates and clarifications.	L	L	A - Adopt as written				
402-37		R402.4.1.2	Testing.									