

1 Department of Public Service

2

3 Adopted Permanent Rules Relating to Minnesota Energy Code

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5 Rules as Adopted

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GENERAL

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7 7670.0100 AUTHORITY; SCOPE; APPLICABILITY.

8 Subpart 1. **Authority.** This chapter is adopted pursuant to  
9 Minnesota Statutes, section 216C.19, subdivision 8.

10 Subp. 2. **Scope.** Under Minnesota Statutes, section  
11 216C.19, subdivision 8, this chapter is a part of the State  
12 Building Code, adopted according to Minnesota Statutes, sections  
13 16B.59 to 16B.73.

14 Subp. 3. **Applicability.** Buildings covered by this chapter  
15 must comply with the Model Energy Code as amended by parts  
16 7670.0260 to 7670.1000.

17 **EXCEPTION:** Relocated residential buildings need not comply  
18 with this chapter, except that, where available, an energy audit  
19 must be conducted on the relocated building.

20 7670.0125 LEGISLATIVE MANDATES CONCERNING MINNESOTA ENERGY CODE.

21 An enclosed structure or portion of an enclosed structure  
22 constructed after January 1, 1978, and used primarily as a  
23 commercial parking facility for three or more motor vehicles may  
24 not be heated. Incidental heating resulting from building  
25 exhaust air passing through a parking facility is not prohibited  
26 if substantially all useful heat previously has been removed  
27 from the air.

28 **EXCEPTION:** Parking facilities that are appurtenant to  
29 dwelling unit occupancies.

30 7670.0130 INCORPORATIONS BY REFERENCE.

31 Subpart 1. **Incorporated items.** The following standards  
32 and references are incorporated by reference:

33 A. The Model Energy Code, 1989 Edition, as published  
34 by the Council of American Building Officials (Falls Church,

1 Virginia), as amended by parts 7670.0260 to 7670.1000.

2 B. Code of Federal Regulations, title 10, part 435,  
3 Energy Conservation Voluntary Performance Standards for New  
4 Commercial and Multi-Family High Rise Residential Buildings;  
5 Mandatory for New Federal Buildings.

6 C. Code of Federal Regulations, title 10, part 430,  
7 National Appliance Energy Conservation Act of 1987.

8 D. LTGSTD, lighting prescriptive and system  
9 performance compliance calculation program, a computer program  
10 developed by Battelle Pacific Northwest Laboratories.

11 E. ANSI/ASHRAE Standard 119-1988, Air Leakage  
12 Performance for Detached Single-Family Residential Buildings.

13 F. AAMA Standard 1503.1-88, Voluntary Test Method for  
14 Thermal Transmittance and Condensation Resistance of Windows,  
15 Doors and Glazed Wall Sections.

16 G. ASTM C 236-87, Standard Test Method for Steady  
17 State Thermal Performance of Building Assemblies by means of a  
18 Guarded Hot Box.

19 H. ASTM C 976-82, Standard Test Method for Thermal  
20 Performance of Building Assemblies by means of a Calibrated Hot  
21 Box.

22 I. WINDOW, a computer program developed by the  
23 Windows and Daylighting Group at Lawrence Berkeley Laboratory.

24 Subp. 2. **Availability.** All standards and documents  
25 incorporated by reference are available for public inspection at  
26 the Minnesota State Law Library and through the Minitex  
27 interlibrary loan system. In addition:

28 A. ASHRAE and ANSI/ASHRAE documents and standards are  
29 available from the American Society of Heating, Refrigerating  
30 and Air-Conditioning Engineers - Publication Sales, 1791 Tullie  
31 Circle NE, Atlanta, GA 30329;

32 B. AAMA standards are available from the American  
33 Architectural Manufacturers Association, 2700 River Road, Des  
34 Planes, IL 60018;

35 C. ASTM standards are available from ASTM, 1916 Race  
36 Street, Philadelphia, PA 19103; and

1 D. The WINDOW computer program is available from  
2 Bostik Construction Products, 1740 County Line, Huntington  
3 Valley, PA 19006.

4 7670.0260 MATERIALS AND EQUIPMENT.

5 Section 102 of the Model Energy Code is amended by adding a  
6 paragraph to read:

7 102.3 Thermal Insulation. Thermal insulation used in  
8 residential buildings three stories or less in height must  
9 conform to chapter 7640, Minnesota Thermal Insulation Standards,  
10 adopted by the Department of Public Service.

11 7670.0325 AMENDMENTS TO SECTION 201: DEFINITIONS.

12 Subpart 1. Thermal transmittance (U). In section 201 of  
13 the Model Energy Code, the definition of "Thermal transmittance  
14 (U)" is amended to read:

15 THERMAL TRANSMITTANCE (U). The coefficient of heat  
16 transmission (air to air). It is the time rate of heat flow per  
17 unit area and unit temperature differential between the warm  
18 side and cold side air films (Btu/h ft<sup>2</sup> F).

19 Thermal transmittance of opaque wall components (U<sub>w</sub>) and  
20 roof/ceiling components (U<sub>r</sub>) calculation methods are defined in  
21 the references indicated:

22 (1) Parallel heat flow method: Model Energy  
23 Code, chapter 5, equations 1 and 2, substituting the framing and  
24 insulated cavity components of the opaque wall or roof/ceiling  
25 for the elements designated by subscripts in these equations.

26 (2) Series-parallel method: Page 20.8 of  
27 Standard RS-1 listed in chapter 7.

28 (3) Parallel path correction factor method:  
29 Standard RS-24 listed in chapter 7.

30 (4) Thermal bridges in sheet metal construction  
31 method: Standard RS-25 listed in chapter 7.

32 (5) Zone method: Pages 22.10 and 22.11 of  
33 Standard RS-1 listed in chapter 7.

34 Subp. 2. Vapor retarder. Section 201 of the Model Energy  
35 Code is amended by adding a new definition to read:

1 VAPOR RETARDER. A material to retard air and water vapor  
 2 passage designed to meet a maximum perm rating of 1.0 grain per  
 3 hour per ft<sup>2</sup> per inch Hg pressure differential. Polyethylene  
 4 material that is not cross laminated which is used to meet the  
 5 requirements of this paragraph must be designed to have a  
 6 minimum thickness of four mills.

7 Subp. 3. Wind wash. Section 201 of the Model Energy Code  
 8 is amended by adding a new definition to read:

9 WIND WASH. Wind wash is the passage of unconditioned air  
 10 through thermal insulation of the building envelope.

11 Subp. 4. Window area. Section 201 of the Model Energy  
 12 Code is amended by adding a new definition to read:

13 WINDOW AREA. Window area, or glazing area, is either the  
 14 area of glazing and sash, or the area used by the manufacturer  
 15 to determine the window thermal transmittance.

16 7670.0400 AMENDMENT TO SECTION 302: DESIGN CONDITIONS.

17 Footnote 1 of section 302.1 of the Model Energy Code is  
 18 amended to read:

19 <sup>1</sup>The exterior design temperature must be selected from the  
 20 "Design Conditions" columns shown in Table 302.1.

21 EXCEPTION: Where necessary to assure the prevention of  
 22 damage to the building or to material and equipment within the  
 23 building, the values listed in Table 302.1 under "extreme  
 24 conditions" may be used.

25 TABLE 302.1 Exterior Design Temperatures

CITY	DESIGN CONDITIONS		EXTREME CONDITIONS	
	SUMMER DB/WB	WINTER DB	SUMMER DB/WB	WINTER DB
29 Albert Lea	87/72	-17	90/74	
30 Alexandria	88/72	-22	90/72	-28.0
31 Bemidji	85/69	-31	88/69	-36.9
32 Brainerd	87/71	-20	90/73	
33 Duluth	82/68	-21	85/70	-27.4
34 Faribault	88/72	-17	91/74	-24.3
35 Fergus Falls	88/72	-21	91/72	-27.8
36 International 37 Falls	83/68	-29	85/68	-36.5
38 Mankato	88/72	-17	91/72	
39 Minneapolis	89/73	-16	92/75	-22.0
40 Rochester	87/72	-17	90/74	
41 St. Cloud	88/72	-15	91/74	
42 St. Paul	89/73	-16	92/75	-22.0
43 Virginia	83/68	-25	85/69	-33.0
44 Willmar	88/72	-15	91/74	-24.3
45 Winona	88/73	-14	91/75	

1  
2 "DB" = dry bulb temperature, degrees Fahrenheit

3 "WB" = wet bulb temperature, degrees Fahrenheit

4 Heating degree days must be selected from Standard RS-23  
5 listed in chapter 7. Adjustments may be made as determined by  
6 the building official to reflect local climates which differ  
7 from the tabulated temperatures or local weather experience.

8 7670.0450 AMENDMENT TO SECTION 303: VENTILATION.

9 Section 303.1 of the Model Energy Code is amended to read:

10 303.1 Ventilation. Ventilation systems must be designed to  
11 conform with Standard RS-3 listed in chapter 7.

12 7670.0470 AMENDMENT TO SECTION 502: ENVELOPE THERMAL  
13 TRANSMITTANCE.

14 Subpart 1. Section 502.2.1 of the Model Energy Code is  
15 amended by adding a paragraph to read:

16 502.1.4 Thermal transmittance of opaque wall components and  
17 roof/ceiling components. Thermal transmittance of opaque wall  
18 components ( $U_w$ ) and roof/ceiling components ( $U_r$ ) must be  
19 calculated using the following methods:

20 (1) Wood frame: Parallel heat flow method.

21 (2) Masonry blocks with insulation inserts or filled cores  
22 and other envelope assemblies containing nonmetal framing:  
23 Series-parallel method.

24 (3) Metal framing bonded on one or both sides to a metal  
25 skin or covering: Thermal bridges in sheet metal construction  
26 method.

27 (4) Nonmetal surface with metal framing:

28 (a) For elements identified in Standard RS-24 listed in  
29 chapter 7, the parallel path correction factor method.

30 (b) For elements not identified in Standard RS-24 listed in  
31 chapter 7, the zone method.

32 Subp. 2. Section 502.1 of the Model Energy Code is amended  
33 by adding a paragraph to read:

34 502.1.5 Thermal transmittance of window area and skylight  
35 elements. Thermal transmittance of window area ( $U_g$ ) and

1 skylight elements ( $U_g$ ) must be determined in accordance with one  
2 of the following methods:

3 (1) Representative U-values for fenestration products,  
4 pages 27.16 to 27.18 of Standard RS-1 listed in chapter 7;

5 (2) Standard RS-26 listed in chapter 7;

6 (3) Standard RS-27 or RS-28 listed in chapter 7 using  
7 design conditions specified in footnote (a) of table 13, chapter  
8 27 of Standard RS-1; or

9 (4) Standard RS-29 listed in chapter 7 using design  
10 conditions specified in footnote (a) of table 13, chapter 27 of  
11 Standard RS-1.

12 Subp. 3. Section 502.2.1 of the Model Energy Code is  
13 amended by adding a new section to read:

14 502.2.1.7 Alternative compliance. Alternative methods of  
15 compliance with sections 502.2.1.1, 502.2.1.2, and 502.2.1.3 for  
16 one- and two-family residential buildings.

17 Minimum performance for Type A-1 (one- and two-family)  
18 buildings:

19	Ceilings	Walls	Floors	Windows	Doors
20					
21	R-38	R-20 <sup>1</sup>	R-20 <sup>1</sup>	Maximum U-0.49 <sup>2</sup>	R-3
22					

23 (1) For the insulated cavity of opaque walls, floors, and  
24 rim joists.

25 (2) Maximum window area must not exceed 12 percent of the  
26 area of exterior walls, not including foundation walls.

27 Site-built fixed glazing must be installed in either an  
28 aluminum or steel frame having a minimum 0.25 inch low  
29 conductance thermal break or in wood or vinyl framing. The  
30 glazing must be either double-glazed with a dead air space  
31 between panes of nominal one-half inch spacing or triple-glazed  
32 with a dead air space between panes of not less than one-fourth  
33 inch.

34 7670.0480 AMENDMENT TO SECTION 502: EFFECTIVENESS OF REQUIRED  
35 THERMAL INSULATION.

36 Section 502.2 of the Model Energy Code is amended by adding  
37 paragraphs to read:

1           502.2.1.8 Cold weather vapor condensation. Building  
2 assemblies are required to maintain the thermal performance of  
3 required insulation and the integrity of building materials  
4 against cold weather water vapor condensation.

5           502.2.1.8.1 Vapor retarder. A vapor retarder must be  
6 installed between the interior surface and the winter design  
7 condition dew point location within each building envelope  
8 surface. The vapor retarder must be continuous and joints in  
9 the vapor retarder must be sealed between solid blocking.

10          EXCEPTION: A vapor barrier need not be installed on the  
11 rim joist insulation.

12          502.2.1.8.2 Air leakage barrier. A barrier against air  
13 leakage must be installed to prevent the leakage of  
14 moisture-laden air from the house into the building envelope.  
15 An air barrier must be continuous at all plumbing and heating  
16 penetrations of interior surface of the building exterior  
17 envelope. If a tub or shower is located on an exterior wall, an  
18 air barrier must be provided at the interior surface of the  
19 building exterior envelope behind the tub or shower.

20          502.2.1.9 Preventing wind wash. A barrier must be provided  
21 at the following locations to mitigate wind wash:

- 22           A. the exterior edge of attic insulation; and  
23           B. cantilevered floors and bay windows, including  
24 corners with adjoining vertical walls above and below.

25 7670.0500 AMENDMENT TO SECTION 502: SLAB ON GRADE FLOORS.

26          Section 502.2.1.4 of the Model Energy Code is amended to  
27 read:

28          502.2.1.4 Slab on grade floors. For slab on grade floors,  
29 the thermal resistance of the insulation around the perimeter of  
30 the floor must be not less than the value given in Table No.  
31 502.2.1. The insulation must extend downward from the top of  
32 the slab to the design frost line or downward to the bottom of  
33 the slab then horizontally beneath the slab for an equivalent  
34 distance, and must be an approved type.

35 7670.0510 AMENDMENT TO SECTION 502: FOUNDATION WALLS.

1 Section 502.2.1.6 of the Model Energy Code is amended to  
2 read:

3 502.2.1.6 Foundation walls. Foundation walls enclosing  
4 heated or conditioned spaces must be insulated.

5 Either the thermal resistance (R) of the insulation on the  
6 entire opaque foundation wall must be not less than R-5, or the  
7 thermal resistance (R) of the insulation on the opaque  
8 foundation wall must be not less than R-10 from the top of the  
9 wall down to the design frost line. If the top of the footing  
10 is at or above the design frost line, the thermal resistance (R)  
11 of the insulation on the wall must not be less than R-5 from the  
12 top of the wall to the top of the footing.

13 All insulation used in or on foundation walls must be  
14 approved for the intended use. The insulation must be installed  
15 in accordance with the approved manufacturer's specifications.

16 If the foundation wall insulation is on the exterior, the  
17 portion from the top of the foundation wall to six inches below  
18 grade must be covered by an approved protective coating finish  
19 to protect the insulation from deterioration due to sunlight and  
20 physical abuse.

21 7670.0550 AMENDMENT TO SECTION 502: AIR LEAKAGE.

22 Subpart 1. **Alternative.** Section 502.4.3 of the Model  
23 Energy Code is amended by adding an exception as follows:

24 **EXCEPTION:** As an alternative to the prescriptive  
25 requirements of section 502.4.3 for detached single-family  
26 residential buildings, air tightness must comply with air  
27 leakage class A, B, C, or D of Standard RS-30 listed in chapter  
28 7. In addition, this alternative requires that the ventilation  
29 system must provide a ventilation rate of not less than 0.35 air  
30 changes per hour (determined in accordance with Standard RS-3,  
31 Table 2.3) or 15 cfm per person, whichever is greater. This  
32 ventilation rate must be verified by measurement. If this  
33 alternative is not chosen, this ventilation rate requirement  
34 applies only if required by Standard RS-3.

35 Subp. 2. **Fire stops.** Section 502 is amended by adding a



1 section as follows:

2       502.4.4 Fire stops. Fire stops must be installed in  
3 accordance with the State Building Code. When mineral fiber or  
4 glass fiber materials are used as fire stop construction at  
5 ceilings and wall cavities separating conditioned and  
6 nonconditioned spaces, the fire stop must be installed to block  
7 air movement.

8       EXCEPTIONS: A fire stop need not block air movement if its  
9 installation would conflict with any other part of the State  
10 Building Code.

11 7670.0610 AMENDMENTS TO SECTION 503: BUILDING MECHANICAL  
12 SYSTEMS.

13       Subpart 1. Calculation procedures. Section 503.2.1 of the  
14 Model Energy code is amended to read:

15       503.2.1 Calculation procedures. Heating and cooling system  
16 design loads for the purpose of sizing systems and equipment  
17 must be determined in accordance with the procedures described  
18 in Standard RS-1 listed in chapter 7.

19       503.2.1.1 Safety factor. Design loads may at the  
20 designer's option be increased by as much as ten percent to  
21 account for unexpected loads or changes in space usage.

22       503.2.1.2 Pick-up loads. Transient loads such as warm-up  
23 or cool-down loads that occur after off-hour setback or shutoff  
24 may be calculated from principles based on the heat capacity of  
25 the building and its contents, the degree of setback, and  
26 desired recovery time; or may be assumed to be up to 30 percent  
27 for heating and ten percent for cooling of the steady-state  
28 design loads. The steady-state load may include a safety factor  
29 in accordance with section 503.2.1.1.

30       Subp. 2. System and equipment sizing. Section 503.2 of  
31 the Model Energy Code is amended by adding a paragraph to read:

32       503.2.3 System and equipment sizing. HVAC systems and  
33 equipment must be sized to provide no more than the space and  
34 system loads calculated in accordance with 503.2.1.

35       Exceptions:

1 (a) Equipment capacity may exceed the design load if the  
2 equipment selected is the smallest size needed to meet the load  
3 within available options of the desired equipment line.

4 (b) Equipment whose capacity exceeds the design load may be  
5 specified if oversizing the equipment can be shown to not  
6 increase the overall annual energy costs.

7 (c) Stand-by equipment may be installed if controls and  
8 devices are provided that allow stand-by equipment to operate  
9 automatically only when the primary equipment is not operating.

10 (d) Multiple units of the same equipment type, such as  
11 multiple chillers and boilers, with combined capacities  
12 exceeding the design load may be specified to operate  
13 concurrently only if controls are provided that sequence or  
14 otherwise optimally control the operation of each unit based on  
15 load.

16 (e) For a single piece of equipment that has both heating  
17 and cooling capability, only one function, either the heating or  
18 the cooling, need meet the requirements of this section.  
19 Capacity for the other function must be, within available  
20 equipment options, the smallest size necessary to meet the load.

21 7670.0660 AMENDMENT TO SECTION 503: EQUIPMENT EFFICIENCY.

22 Subpart 1. Table No. 503.4.3. Table No. 503.4.3 of the  
23 Model Energy Code "HVAC System Heating Equipment - Gas- and  
24 Oil-Fired Minimum Steady State Combustion Efficiency" is amended  
25 by changing the requirement for forced-air furnaces and  
26 low-pressure steam or hot-water boilers for all other commercial  
27 or industrial furnaces and boilers to 80 percent.

28 Subp. 2. Table No. 503.4.8. Section 503 of the Model  
29 Energy Code is amended by adding a table to read:

30 Table No. 503.4.8 -- Minimum EER and COP for Electrically

31 Driven Water Source Hydronic Heat Pumps<sup>1</sup>

32	Size	under 19 kW	19 kW (65,000
33		(65,000 Btu/h)	Btu/h) and over
34	EER	9.0	9.4
35	COP	2.64	2.75

36  
37 <sup>1</sup>When tested at the standard rating conditions specified in  
38 Table No. 503.4.6a.

1       Subp. 3. **Efficiency requirements.** HVAC system heating and  
2 cooling equipment regulated by the National Appliance Energy  
3 Conservation Act of 1987 must conform to the efficiency  
4 requirements of Standard RS-31 listed in chapter 7.

5 7670.0670 AMENDMENT TO SECTION 503.10: DUCT CONSTRUCTION.

6       Section 503.10.2 of the Model Energy Code is amended to  
7 read:

8       503.10.2. For low pressure supply and return air ducts  
9 located outside of the conditioned space, all transverse joints  
10 must be sealed using mastic, tape, or mastic and tape. For  
11 fibrous glass ductwork, pressure sensitive tape may be used.

12 7670.0710 AMENDMENTS TO SECTION 504: SERVICE WATER HEATING.

13       Subpart 1. **Time clocks.** Section 504.5 of the Model Energy  
14 Code is amended by deleting section 504.5.3.

15       Subp. 2. **Pipe insulation.** Section 504.7 of the Model  
16 Energy Code is amended by deleting the exception.

17       Subp. 3. **Devices to limit temperature.** Section 504.8.2 of  
18 the Model Energy Code is amended by deleting section 504.8.2.2.

19       Subp. 4. **Efficiency requirements.** Service water heating  
20 equipment regulated by the National Appliance Energy  
21 Conservation Act of 1987 must conform to the efficiency  
22 requirements of Standard RS-31 listed in chapter 7.

23 7670.0800 AMENDMENTS TO SECTION 505: ELECTRIC POWER AND  
24 LIGHTING.

25       Subpart 1. **Electric energy determination.** The exception  
26 to section 505.2 of the Model Energy Code is amended to read:

27       EXCEPTION: Motels, hotels, college dormitories, other  
28 transient facilities, and buildings intended for occupancy  
29 primarily by persons who are 62 years of age or older or  
30 handicapped, or which contain a majority of units not equipped  
31 with complete kitchen facilities.

32       Subp. 2. **Lighting power budget.** The lighting requirements  
33 of sections 505.3 and 505.4 of the Model Energy Code are amended  
34 to read:

1 The lighting power budget must be the upper limit of the  
 2 power to provide the lighting needs in accordance with the 1988  
 3 and 1989 criteria and calculation procedure specified in  
 4 Standard RS-32 listed in chapter 7 (excluding section 3.2,  
 5 referencing equation 3.4-1 in section 3.1.6.2, and correcting  
 6 the units of Interior Lighting Power Allowance in equation 3.5-3  
 7 to Watts), or using Standard RS-33 listed in chapter 7.

8 EXCEPTION: One- and two-family detached dwellings and the  
 9 dwelling portion of multifamily buildings.

10 7670.0850 AMENDMENT TO SECTION 600: DESIGN BY ACCEPTABLE  
 11 PRACTICE.

12 Section 601.1 of the Model Energy Code is amended by adding  
 13 a paragraph to read:

14 Buildings constructed in accordance with this section must  
 15 also comply with parts 7670.0470 to 7670.0800 as indicated below:

16	Model Energy Code	Minnesota Rules Part
17		
18	602.2	7670.0470, 7670.0480
19	602.2.4	7670.0500
20	602.2.6	7670.0510
21	602.3.2	7670.0550
22	603.1	7670.0610
23	603.2.1	7670.0660
24	603.4	7670.0670
25	604	7670.0710
26	605	7670.0800

27 7670.1000 AMENDMENTS TO SECTION 701: STANDARDS.

28 Section 701.1 of the Model Energy Code is amended by  
 29 replacing and adding the following code standard numbers to read:

30 A. RS-1, 1989 ASHRAE Handbook of Fundamentals.

31 B. RS-3, ASHRAE Standard 62-1989, Ventilation for  
 32 Acceptable Indoor Air Quality.

33 C. RS-4, ASHRAE Standard 55-1981 Thermal Environment  
 34 Conditions for Human Occupancy.

35 D. RS-17 and RS-18, SMACNA HVAC Duct Construction  
 36 Standards: Metal and Flexible, First Edition, 1985.

37 E. RS-23, Monthly Normals of Temperature,  
 38 Precipitation, and Heating and Cooling Degree Days 1951-80  
 39 Minnesota. National Oceanic and Atmospheric Administration  
 40 September 1982.

1 F. RS-24, Code of Federal Regulations, title 10, part  
2 435.105, section 5.3.3.2.1(b), Calculation procedures for  
3 parallel path correction factor method.

4 G. RS-25, Code of Federal Regulations, title 10, part  
5 435.105, section 5.3.3.2.1(d), Calculation procedures for  
6 thermal bridges in Sheet Metal Construction.

7 H. RS-26, AAMA Standard 1503.1-88, Voluntary Test  
8 Method for Thermal Transmittance and Condensation of Windows,  
9 Doors and Glazed Wall Sections.

10 I. RS-27, ASTM C 236-87, Standard Test Method for  
11 Steady State Performance of Building Assemblies by means of a  
12 Guarded Hot Box.

13 J. RS-28, ASTM C 976-82, Standard Test Method for  
14 Steady State Performance of Building Assemblies by means of a  
15 Calibrated Hot Box.

16 K. RS-29, WINDOW computer program.

17 L. RS-30, ASHRAE Standard 119-1988, Air Leakage  
18 Performance for Detached Single-Family Residential Buildings.

19 M. RS-31, Code of Federal Regulations, title 10, part  
20 430.32, Energy Conservation Standards.

21 N. RS-32, Code of Federal Regulations, title 10, part  
22 435.103, lighting.

23 O. RS-33, LTGSTD, lighting prescriptive and system  
24 performance compliance calculation program.

25 REPEALER. Minnesota Rules, parts 7670.0110; 7670.0120;  
26 7670.0200; 7670.0210; 7670.0220; 7670.0300; 7670.0310;  
27 7670.0320; 7670.0330; 7670.0340; 7670.0520; 7670.0540;  
28 7670.0600; 7670.0620; 7670.0630; 7670.0640; 7670.0650;  
29 7670.0700; 7670.0720; 7670.0730; 7670.0900; 7670.0910;  
30 7670.0920; 7670.0930; 7670.0940; 7670.0950; 7670.0960;  
31 7670.0970; 7670.1010; 7670.1020; 7670.1030; 7670.1100; and  
32 7670.1110 are repealed.