

Exhibit N

Exhibit N

MINNESOTA ENERGY CODE
CHAPTER 7676
ALL BUILDINGS EXCEPT LOW-RISE RESIDENTIAL

TABLE OF CONTENTS

Page	
1	7676.0100 Authority and Purpose
1	7676.0200 Application
1	7676.0300 Materials, Equipment, and Specifications
2	7676.0400 Incorporations by Reference
2	7676.0500 Definitions
4	7676.0600 Minimum Envelope Criteria
6	7676.0700 Methods for Compliance
12	7676.0800 Compliance Criteria for Semiconditioned Buildings or Portions of Buildings
12	7676.0900 Compliance Criteria for Greenhouses, Inflated Structures, and Processes Requiring Heat for Cold Weather Protection
12	7676.1000 Compliance Criteria for Metal Buildings
13	7676.1100 Building Mechanical Systems
18	7676.1200 Service Water Heating
19	7676.1300 Electrical Power and Lighting
30	7676.1400 Additions, Alterations, And Repairs To Existing Buildings
31	7676.1500 Effective Date

7676.0100 AUTHORITY AND PURPOSE.

This chapter is adopted pursuant to Minnesota Statutes, section 216C.19, subdivision 8. The purpose of this chapter is to establish the minimum energy code criteria necessary to construct new and remodeled elements of all buildings except one- and two-family residential and multifamily buildings of three stories or less, as well as to provide alternatives for demonstrating compliance with those minimum criteria. The intent of these criteria is to provide a means for assuring building durability, and permitting energy efficient operation.

7676.0200 APPLICATION.

Subpart 1. **General.** This chapter is a part of the Minnesota State Building Code, adopted according to Minnesota Statutes, sections 16B.59 to 16B.73. Enforcement of this chapter must not abridge safety, health, or environmental requirements under other applicable codes or ordinances.

Subp. 2. **New and remodeled elements of buildings.** This chapter applies to all new and remodeled elements of commercial and all other buildings.

Subp. 3. **Existing buildings.** Additions, alterations, and repairs to existing buildings or structures must comply with part 7676.1400.

Subp. 4. **Mixed occupancy.** If a building houses more than one occupancy, each portion of the building must conform to the requirements for the occupancy housed in that portion. If minor accessory uses occupy no more than ten percent of the

area of any floor of the building, the major use is considered the building occupancy.

Subp. 5. **Historic buildings.** Alterations to historic buildings and changes of occupancy are regulated by the Minnesota State Building Code, part 1305.0010.

Subp. 6. **Exempt buildings.** This chapter does not cover buildings, structures, or portions of buildings or structures whose peak design rate of energy usage is less than 3.4 Btu per hour per square foot or 1.0 watt per square foot of floor area for all purposes.

Subp. 7. **Application to greenhouses, inflated structures, and processes requiring heat for cold weather protection.** Requirements for greenhouses, inflated structures, and processes requiring heat for cold weather protection are provided in part 7676.0900.

Subp. 8. **Other.** This chapter also applies to driveways, walkways, entrances, parking lots, and grounds.

7676.0300 MATERIALS, EQUIPMENT, AND SPECIFICATIONS.

Subpart 1. **Identification.** Materials and equipment must be identified in order to show compliance with this chapter.

Subp. 2. **Plans and Specifications.** Plans, specifications, and either calculations or compliance forms must demonstrate compliance with all requirements of this chapter including:

- A. design criteria;
- B. exterior envelope component materials;
- C. U-values of windows, doors, skylights, and opaque envelope components;
- D. R-values of insulating materials;
- E. location of *interior air barrier, vapor retarder, and wind wash barrier*;
- F. *air sealing* requirements;
- G. size and type of apparatus and equipment;
- H. equipment and systems controls; and
- I. other data needed to indicate conformance with the requirements of this chapter.

Subp. 3. **Maintenance information.** Required regular maintenance actions must be clearly stated and incorporated on a *readily accessible* label. The label may be limited to identifying, by title or publication number, the operation and

maintenance *manual* for that particular model and type of product. Maintenance instructions must be furnished for equipment that requires preventive maintenance for efficient operation.

Subp. 4. **Thermal insulation.** Thermal insulation used must conform to chapter 7640, Minnesota Thermal Insulation Standards, adopted by the Department of Public Service. All thermal insulation must achieve stated performance at 75 degrees Fahrenheit mean temperature and no less than stated performance at winter design conditions.

EXCEPTION: Thermal insulation designed to reduce summer cooling load only is not required to achieve stated performance at winter design conditions.

7676.0400 INCORPORATIONS BY REFERENCE.

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

A. ASHRAE Standard 90.1-1989, Section 13, Building Energy Cost Budget Method;”

B. ASHRAE, 1997 Handbook of Fundamentals, Chapter 28;

C. ASHRAE Standard 84-1991, Method of Testing Air-to-Air Heat Exchangers;

D. ASTM E1677-95 Standard Specification for an Air Retarder (AR) Material or System for Low-Rise Framed Building Walls

E. Children, Families and Learning Worst Case Draft Test, as published in the State of Minnesota Plan for Weatherization Assistance for Low-Income Persons, March 10, 1997

F. COMcheck-MN program, a computer program for energy analysis of medium to small nonresidential buildings developed by Battelle Pacific Northwest Laboratories;

G. ENVSTD, Envelope System Performance Compliance Calculation program, a computer program developed by Battelle Pacific Northwest Laboratories;

H. HVAC Air Duct Leakage Test Manual, Section 4, 1985 edition, as published by the Sheet Metal and Air Conditioning Contractors National Association, Inc., Vienna, Virginia;

I. Lighting Efficiency Program Input Wattage Guide,” Northern States Power Company, Minneapolis, MN;

J. Energy Policy of Act of 1992, section 122(d), Nominal Full Load Efficiency Requirements for Motors;

K. National Electrical Manufacturers Association Standards Publication X TP 1-1996, Guide for Determining Energy Efficiency for Distribution Transformers; and

L. UL181A, Factory Made Air Ducts and Duct Connectors, Underwriters Laboratories, Inc.

Subp. 2. **Availability.** All standards and documents incorporated by reference are available for public inspection at

the Minnesota State Law Library and through the Minitex interlibrary loan system.

7676.0500 DEFINITIONS.

Subpart 1. **Definitions.** The terms in this part apply to this chapter. Additional terms relating to lighting requirements of this chapter are contained in part 7676.1300, Subpart 2.

Subp. 2. **Accessible.** *Accessible*”means having access to but which first may require the removal of an access panel, door or similar obstruction covering the item described.

Subp. 3. **Attic bypass.** *Attic bypass*”means a passageway where air may pass from a *conditioned space* to the unconditioned side of a roof or attic. *Attic bypasses* include utility penetrations, interior soffits, openings in top plates, fan penetrations and light fixture penetrations.

Subp. 4. **Automatic.** *Automatic*”means self-acting, operating by its own mechanism when actuated by some impersonal influence, for example, a change in current strength, pressure, temperature, or mechanical configuration.

Subp. 5. **Building envelope.** *Building envelope*”means the elements of a building which enclose *conditioned spaces* through which thermal energy may be transferred to or from the exterior or semiconditioned spaces.

Subp. 6. **Cfm.** *Cfm*”means cubic feet per minute.

Subp. 7. **Conditioned space.** *Conditioned space*”means space within a building which is conditioned either directly or indirectly by an energy-using system and is capable of maintaining at least 65 degrees Fahrenheit at winter design conditions or less than 78 degrees Fahrenheit at summer design conditions identified in part 7676.1100.

Subp. 8. **Commercial parking facility.** *Commercial parking facility*” means a parking garage or ramp except those used exclusively to house vehicles for public emergency, ambulance, public transit, or public utility emergency response.

Subp. 9. **Deadband.** *Deadband*”means the temperature range in which no heating or cooling is used.

Subp. 10. **Fenestration (window, door or skylight) area.** *Fenestration (window, door or skylight) area*”means the area of a window, door or skylight equal to the rough opening of the window, door or skylight, respectively, less installation clearances.

Subp. 11. **Gross wall area.** *Gross wall area*”means the *building envelope* wall area bounding interior space from grade to the roof/ceiling assembly enclosing conditioned or semiconditioned space, including opaque wall, window, and door area.

For basement walls with an average below-grade area less than 50 percent of the total wall area, including openings, all