



Rules of
Department of Economic
Development
Division 340—Division of Energy
Chapter 7—State Building Minimum Energy
Efficiency Standard

Title	Page
4 CSR 340-7.010 State Building Minimum Energy Efficiency Standards.....	3



**Title 4—DEPARTMENT OF
ECONOMIC DEVELOPMENT
Division 340—Division of Energy
Chapter 7—State Building Minimum
Energy Efficiency Standard**

**4 CSR 340-7.010 State Building Minimum
Energy Efficiency Standards**

PURPOSE: This rule establishes a minimum energy efficiency standard for construction of a state building, substantial renovation of a state building where major energy systems are involved, or a building which the state or state agency considers for acquisition or lease. This standard or its application will be modified through the In-Addition process of the Missouri Register, as appropriate, to reduce life-cycle costs of state building occupancy.

EDITOR'S NOTE: The following material is incorporated into this rule by reference:

- 1) *American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., ASHRAE Standard Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings (Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1989);*
- 2) *American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., ASHRAE Standard Energy-Efficient Design of New Low-Rise Residential Buildings (Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1993);*
- 3) *Council of American Building Officials, Model Energy Code (Falls Church, VA: The Council of American Building Officials, 1993); and*
- 4) *Council of American Building Officials, Model Energy Code (Falls Church, VA: The Council of American Building Officials, 1994 Amendments).*

In accordance with section 536.031(4), RSMo, the full text of material incorporated by reference will be made available to any interested person at the Office of the Secretary of State and the headquarters of the adopting state agency.

(1) Definitions. The following terms used in this rule shall mean:

(A) Addition—Construction on an existing state-owned building where the building gross floor area increases by more than one hundred (100) square feet;

(B) ASHRAE—American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc.;

(C) Building life cycle costing—A method of economic evaluation that accounts for all costs, depreciation, incentives, taxes, inflation, and the time value of money over the lifetime of a building or over the first twenty-five (25) years after the construction or renovation is completed. Costs include initial materials, labor, and salvage credit; energy, operation, maintenance, and replacement over the lifetime; final salvage; and interest or discount over the lifetime. Typically a lowest initial cost approach serves as a baseline, and all other approaches are compared using one (1) or more of the following analysis tools: total life cycle cost, savings to investment ratio, net benefit, internal rate of return, or adjusted internal rate of return. Each analysis tool produces the same result which is the lowest present value of total cost of a building over its lifetime;

(D) Minimum Energy Efficiency Standard—ASHRAE 90.1, *Energy Efficient Design of New Buildings Except Low Rise Residential Buildings* (latest edition), for all buildings that provide facilities or shelter for human occupancy and use energy primarily to provide human comfort, except single and multifamily residential buildings of three (3) or fewer stories above grade. ASHRAE 90.2, *Energy Efficient Design of New Low Rise Residential Buildings* (latest edition), or the Council of American Building Officials *Model Energy Code (CABO MEC)* (latest edition) for single and multifamily residential buildings of three (3) or fewer stories above grade for all buildings that provide shelter for human occupancy and use energy primarily to provide human comfort. When a new edition of the minimum energy efficiency standard is published by the sponsoring organization, its use shall become effective three (3) months after said date of publication for all projects on which work has not been started. (This corresponds to the lease procurement date for buildings leased to the state, or the date of signing of a new building design contract for state-owned buildings.) Projects underway should be reviewed and upgraded to the new standard, but the effective date of the new standard shall not affect their prior design or approval;

(E) Must/shall/will—When the terms “must”, “shall,” or “will” are used herein, they designate mandatory provisions;

(F) Should—When the term “should” is used herein, it means that there is a strong expectation that the specified provision will be performed without a mandatory obligation to provide the requirement. When making this determination by the state agency evaluating the bids, costs of upgrading a building to meet specified provisions and resulting

savings are to be considered. Building life cycle costing techniques are the ultimate tools for making this decision. However, in most cases, simple payback calculations combined with a broad experience base in energy conservation analysis will suffice for a final determination;

(G) Simple payback—The initial cost of an energy conservation measure divided by its annual cost savings. The units of the result are expressed in years;

(H) Substantial renovation—Construction on an existing state-owned building where energy can be saved, and where both of the following apply: the cost of the construction exceeds fifty percent (50%) of the estimated replacement cost of that building; and where the total capital improvements budget request exceeds two hundred thousand dollars (\$200,000).

(2) Applicability.

(A) The minimum energy efficiency standard sets forth minimum requirements for the efficient use of energy in the design of new state buildings or portions thereof, additions or substantial renovations to existing state buildings, or buildings the state considers for lease or acquisition. These buildings provide facilities or shelter for public assembly, office, educational, business, institutional, storage and residential occupancies, as well as those portions of factory and industrial occupancies designed primarily for human occupancy. Building energy efficiency is accomplished by regulating building exterior envelopes, distribution of energy, and selection of systems and equipment for heating, ventilating, air conditioning, service water heating, energy management, and lighting.

(B) Leased Space.

1. All leases procured on or after January 1, 1996, for leased space of ten thousand (10,000) square feet or greater should conform to the minimum energy efficiency standard. The development of lease request for proposals after January 1, 1996, must contain this provision.

2. Leases of less than ten thousand (10,000) square feet are exempt from the requirements of the minimum energy efficiency standard.

(C) Owned Buildings.

1. All buildings with construction completion prior to January 1, 1996, or with building design contracts signed prior to January 1, 1996, which the state considers for acquisition should conform to the minimum energy efficiency standard.

2. All building design contracts which are signed on or after January 1, 1996, for construction of state-owned buildings shall



conform to the minimum energy efficiency standard.

3. All additions design contracts which are signed on or after January 1, 1996, for additions to state-owned buildings shall conform to the minimum energy efficiency standard. Only the addition must conform.

4. All substantial renovation design contracts which are signed on or after January 1, 1996, for substantial renovations to state-owned buildings shall conform to the minimum energy efficiency standard.

5. All renovation design contracts which are signed on or after January 1, 1996, for renovations to state-owned buildings where the project cost is less than two hundred thousand dollars (\$200,000) and where energy can be saved should conform to the minimum energy efficiency standard.

6. All replacement design contracts which are signed on or after January 1, 1996, for replacement of energy using systems in state-owned buildings where the project cost is less than two hundred thousand dollars (\$200,000) and where energy can be saved should conform to the minimum energy efficiency standard.

(3) Exempt Buildings. The minimum energy efficiency standard does not apply to—

(A) Areas of buildings intended primarily for manufacturing or commercial or industrial processing;

(B) Building or separately enclosed identifiable areas having any combination of dedicated space heating, service water heating, ventilating, air-conditioning, or lighting systems whose combined peak design rate of energy usage for these purposes is less than 3.5 BTU/H ft² of gross floor area;

(C) Buildings of fewer than one hundred (100) square feet gross floor area;

(D) Buildings which have been designated as historically significant by the state or are listed in The National Register of Historic Places or which have been determined to be eligible for listing;

(E) Buildings and structures or portions thereof which are neither heated nor cooled; and

(F) Buildings and structures or portions thereof not intended for human occupancy.

(4) Building Design Practices.

(A) The minimum energy efficiency standard is a minimum standard. It is not intended to be used as a design tool for a building. The most cost-effective long-term design will depend on the needs of the building owner and occupant, and the currently available technology. Usually buildings can be designed to provide a lower life-cycle cost

than the minimum energy efficiency standard would provide.

(B) The state should provide guidance in lease and proposed new construction specifications which would prevent known wasteful energy design practices and promote known cost-effective energy design practices.

*AUTHORITY: sections 8.800–8.851, RSMo (1994). * This rule originally filed as 10 CSR 140-7.010. Original rule filed July 11, 1995, effective Feb. 25, 1996. Moved to 4 CSR 340-7.010, effective Aug. 28, 2013.*

**Original authority 1993.*