

Ministerial Regulation

Prescribing Type or Size of Building and Standard, Rule and Procedure for Designing of Energy Conservation Building, B.E. 2552 (2009)

Translation

By virtue of Section 6 paragraph two and Section 19 of the Promotion of Energy Conservation Act, B.E. 2535 (1992) as amended by the Promotion of Energy Conservation Act (No. 2), B.E. 2550 (2007) which contains certain provisions in relation to the restriction of right and liberty of a person, in respect of which Section 29 in conjunction with Section 33, Section 41 and Section 43 of the Constitution of the Kingdom of Thailand, so permit by virtue of law, the Minister of Energy, with the advice of the National Energy Policy Council, hereby issues the Ministerial Regulation as follows:

Clause 1

This Ministerial Regulation shall come into force after the expiration of one hundred and twenty days as from the date of its publication in the Government Gazette.

Chapter 1

Type and Size of Building

Clause 2

In the case where the total areas of all stories for the construction or modification of any of the following buildings equal to 2,000 square meters or more, that building is required to have energy conservation design under this Ministerial Regulation:

- (1) Infirmary under the law on infirmary;
- (2) Education institution;
- (3) Office;
- (4) Condominium under the law on condominium;
- (5) Assembly building under the law on building control;
- (6) Theatre under the law on building control;
- (7) Hotel under the law on hotel;
- (8) Entertainment establishment under the law on entertainment establishment;
- (9) Department stores or shopping center.

Chapter 2

Standard and Rule for Building Design

Part 1

Building Envelope System

Clause 3

The overall thermal transfer value of the building.

- (1) The overall thermal transfer value of external wall of air-conditioned area of each type of building shall not exceed the following values:

Type of Buildings	Overall Thermal Transfer Value of External Wall of Building (Watt/Square meter)
(a) Education institution, Office	50
(b) Theater, Shopping center, Entertainment establishment, Department store, Assembly building	40
(c) Hotel, Infirmary, Condominium	30

The overall thermal transfer value of external wall of air-conditioned area of the building shall be calculated upon a weighted mean of the total overall thermal transfer value of all external walls.

- (2) The overall roof thermal transfer value of air-conditioned area of each type of building shall not exceed the following values:

Type of Buildings	Overall Roof Thermal Transfer Value of Building (Watt/Square meter)
(a) Education institution, Office	15
(b) Theater, Shopping center, Entertainment establishment, Department store, Assembly building	12
(c) Hotel, Infirmary, Condominium	10

- (3) In case of building with different types of work space, each work space shall comply with the rule for building envelope system depending on the purpose of use of that work space.

Part 2 Electric Lighting System

Clause 4

Electric lighting inside the building excludes car parking areas.

- (1) Electric lighting inside building shall provide sufficient level of luminance for each type of work and shall be in accordance with the law on building control or the law on such matter.
- (2) The energy consumption of electric lighting equipment inside each type of the following buildings shall not exceed the following loads:

Type of Buildings	Maximum Load (Watt/Square meter of work space)
(a) Education institution, Office	14
(b) Theater, Shopping center, Entertainment establishment, Department store, Assembly building	18
(c) Hotel, Infirmary, Condominium	12

- (3) In case of building with different types of work space, the loads specified in the above mentioned table shall be applied to each work space depending on the purpose of use of that work space.

Part 3
Air Conditioning System

Clause 5

The air conditioning system and type and size of air conditioning system to be installed to the building shall have the minimum coefficient of performance, energy efficiency ratio and electric power demand per ton refrigeration as notified by the Minister.

Part 4
Water Heating Appliance

Clause 6

Water heating appliance to be installed to the building shall have the minimum energy efficiency and coefficient of performance as follows:

- (1) Steam boiler and hot water boiler.

Types	Minimum Energy Efficiency (in percentage)
(a) Oil-fired steam boiler	85
(b) Oil-fired hot water boiler	80
(c) Gas-fired steam boiler	80
(d) Gas-fired hot water boiler	80

- (2) Air-source heat pump water heater.

Design Types	Burden Rating			Minimum Coefficient of Performance
	Incoming Water Temperature	Outgoing Water Temperature	Air Temperature	
	(Celsius)			
(a) Type 1	30.0	50.0	30.0	3.5
(b) Type 2	30.0	60.0	30.0	3.0

Part 5
Overall Energy Consumption of Building

Clause 7

The application for construction or modification of building under clause 2 which does not fall within the provisions of Chapter 2, Part 1, Part 2 or Part 3 shall comply with the rule on overall energy consumption of building.

The overall energy consumption value of the building under paragraph one shall lower than that of the reference building that having similar work space, direction and building envelope with the building to be constructed or modified and such building is required to have building envelope system, electric lighting system and air conditioning system as prescribed.

Part 6
Renewable Energy Deployment in any System of Building

Clause 8

If there is renewable energy deployment in the building, electricity consumption of such building shall not include electricity consumption caused by electric lighting system which is designed for exposure to natural light luminance along the building envelope. In this

case, it shall be deemed as if no electric lighting equipment installed on that building envelope. Such design shall notwithstanding be in accordance with the following conditions:

- (1) the on-off switch of electric lighting equipment for luminance in the area of building envelope has been explicitly shown in the design and that electric lighting equipment shall not far from the building envelope exceeding 1.5 times of the height of the window in that area; and
- (2) The window glass along the building envelope under (1) shall have effective shading coefficient of not less than 0.3 with light to solar gain ratio of more than 1.0 and the area of window glass along the building envelope under (1) shall not less than opaque wall area.

Clause 9

The building which is capable to generate electricity from solar energy for use therein may deduct the value of such generated electricity from overall energy consumption of the building.

Chapter 3

Rule and Procedure for Building Design Calculation

Clause 10

Rule and procedure for building design calculation under Chapter 2 shall be notified by the Minister.

Transitory Provision

Clause 11

Building plan that having been applied together with the application or notification for permission for construction or modification under, or for changing the purpose of use under, the law on building control, or that having been permitted under the law on such matter prior to the date this Ministerial Regulation comes into force, shall be exempted from the execution under this Ministerial Regulation.

Given on the 5th Day of February B.E. 2552 (2009)

Wannanrat Channukul

Minister of Energy

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