



കേരള സർക്കാർ
Government of Kerala
2017



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dated 5-9-2012 with RNI

Reg. No. KL/TV(N)/634/2015-17

കേരള ഗസറ്റ് KERALA GAZETTE

അസാധാരണം
EXTRAORDINARY

ആധികാരികമായി പ്രസിദ്ധപ്പെടുത്തുന്നത്
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GOVERNMENT OF KERALA

Power (A) Department

NOTIFICATION

G. O. (P) No. 3/2017/PD.

Dated, Thiruvananthapuram, 11th April, 2017
28th Meenam, 1192.

S. R. O. No. 237/2017.—WHEREAS, clause (p) of section 14 of the Energy Conservation Act, 2001 (Central Act 52 of 2001) empowers the Central Government to prescribe Energy Conservation Building Code for efficient use of energy and its conservation in the building or building complexes, by notification, in consultation with the Bureau of Energy Efficiency;

AND WHEREAS, Government of India issued the Energy Conservation Building Code, 2007, under clause (p) of section 14 of Energy Conservation Act, 2001;

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AND WHEREAS, clause (a) of section 15 of the Energy Conservation Act, 2001 empowers the State Government to amend the Energy Conservation Building Code, in consultation with the Bureau of Energy Efficiency, to suit the regional and local climatic conditions and may, by rules made by it, specify and notify Energy Conservation Building Code with respect to use of energy in the buildings.

NOW, THEREFORE, in exercise of the powers conferred by clause (a) of section 15 and section 57 of the Energy Conservation Act, 2001 (Central Act 52 of 2001), the Government of Kerala hereby make the following rules to notify the Energy Conservation Building Code applicable to the State of Kerala, namely:—

RULES

1. *Short title and commencement.*—(1) These rules may be called the Kerala Energy Conservation (Building Code) Rules, 2017.

(2) They shall come into force at once.

2. *Definitions.*—(1) In these rules, unless the context otherwise requires,—

(a) “Act” means the Energy Conservation Act, 2001 (Central Act 52 of 2001);

(b) “Appendix” means the appendix annexed to the Schedule of the Kerala State Energy Conservation Building Code, 2017 made under this Rules.

(c) “Building Permit Authority” means the Local Body responsible for issuing the Building Permit in that area.

(d) “Code” means the Kerala State Energy Conservation Building Code, 2017 made under this Rules.

(e) “Licensed Engineer” means an Architect/Engineer/Town Planner/Supervisor registered or deemed to have been registered as such under the Kerala Municipality Building Rules.

(f) “Schedule” means the Schedule to these Rules.

(g) “State Designated Agency” means the agency designated under clause (d) section 15 of the Act, and implies in the context of Kerala, the Energy Management Centre, Thiruvananthapuram.

(2) All other words and expressions used in this Code but not defined shall have the same meaning assigned to them in the Energy Conservation Act, 2001 (Central Act 52 of 2001).

3. *Notifying the Kerala State Energy Conservation Building Code.*— The Government of Kerala hereby amend the Energy Conservation Building Code, 2007 issued by the Government of India to suit the regional and local climatic conditions of Kerala and notify it as the Kerala State Energy Conservation Building Code, 2017, as specified in the Schedule hereto.

SCHEDULE

THE KERALA STATE ENERGY CONSERVATION BUILDING CODE, 2017 (KSECBC)

1. *Purpose.*—The purpose of this code is to provide minimum requirement for the energy-efficient design and construction of buildings.

2. *Scope.*—(1) The Code is applicable to new buildings which have a connected load of 100kW or greater, or a contract demand of 120kVA or greater, or having conditioned area of 500m² or greater, and is intended to be used for commercial purposes such as Commercial Complexes, Shopping malls, Hotels, Hospitals, Motion Picture theatres, Office buildings, Banks, Educational buildings, Cyber parks etc., and others that are not primarily used for manufacturing process, except building for residential purpose.

(2) Provided however offices, godowns or buildings of any other purpose other than manufacturing in a manufacturing facility that having a connected load of 100 Kilowatt (kW) and greater or contract demand of 120 Kilo Volt Ampere (kVA) and greater or having conditioned area of 500m² and greater shall comply with Kerala State Energy Conservation Building Code.

2.1 *Applicable Building Systems.*—The provisions of the Code shall apply to:

(a) Building envelopes, except for unconditioned storage spaces or warehouses,

- (b) Mechanical systems and equipment, including heating, ventilating and air conditioning,
- (c) Service hot water heating,
- (d) Interior and exterior lighting, and
- (e) Electrical power and motors.

2.2 *Exemptions.*—The provisions of this Code do not apply to:

- (a) Buildings that do not use either electricity or fossil fuel, and
- (b) Equipment and portions of building systems that use energy primarily for manufacturing processes.

3. *Initiation of Construction.*—Along with the application for building permit submitted to the Local Body for issuing building permit, the applicant shall submit the documents as per Appendix (G) with certification from a Licensed Engineer that the building design is fully compliant with the requirements of this Code, and that in case any non-compliance is detected subsequently, the same shall be rectified at risk and cost of the Licensed Engineer who certified the initial design, in respect of buildings under para 2:

Provided that a copy of the documents as per Appendix (G), para 16 of the Schedule, with certification from a Licensed Engineer shall be submitted simultaneously to the State Designated Agency, viz., Energy Management Centre, who shall scrutinize the same and intimate any non-compliance to the applicant and to the Local Body within thirty days of receipt:

Provided further that the Local Body shall not issue building permit without such certification:

Provided further that in case any non-compliance has been pointed out by the State Designated Agency, the Local Body shall get a further certificate of rectification from the applicant through the Licensed Engineer before issuing the Building Completion Certificate.

3.1 *Submission of Report to the State Designated Agency (SDA).*—The Building Permit Authority shall submit an annual report of the approved ECBC compliant building to the State Designated Agency in the format specified in Appendix H para 17 of the Schedule.

3.2 *Authority having Jurisdiction.*—(1) For administration and enforcement of this Code the State Designated Agency shall be responsible for Code interpretations.

(2) Buildings falling under this Code shall get the energy audit conducted by BEE accredited energy auditor once in three years, as per clause (c) of section 15 of Energy Conservation Act, 2001.

(3) The energy audit details shall be reported to the State Designated Agency in such a manner and interval as notified by the State Designated Agency from time to time.

(4) Energy audit findings shall be implemented by the owner of the building within such period as specified by the State Designated Agency.

4. *Administration and Enforcement.*—

4.1 *Compliance Requirements.*

4.1.1 *Mandatory Requirement:*

Compliance with the requirements of this code shall be mandatory for all applicable buildings as specified in para 2.

4.1.2 *New Buildings:*

New building shall comply with either the provision of para 5 through para 9 of this code or the whole building Performance Method of Appendix B para 11.

4.1.3 *Additions to Existing Buildings:*

Where the addition plus the existing building exceeds the floor area of para 2, the additions shall comply with the provisions of para 5 through para 9. Compliance may be demonstrated in either of the following ways:

(1) The addition alone shall comply with the applicable requirements, or

(2) The addition, together with the entire existing building, shall comply with the requirements of this Code that would apply to the entire building, as if it were a new building.

Exception to para 4.1.3:

When space conditioning is provided by existing systems and equipment, the existing systems and equipment need not comply with this Code. However, any new equipment installed must comply with specific requirements applicable to that equipment.

4.1.4 Alterations to Existing Buildings

Where the existing building exceeds the floor area threshold in para 2, portions of a building and its systems that are being altered shall meet the provisions of para 5 through para 9. The specific requirements for alterations are described in the following sub-sections.

Exception to para 4.1.4:

When the entire building complies with all of the provisions of para 5 through para 9 as if it were a new building.

4.1.4.1 Building Envelope

Alterations to the building envelope shall comply with the requirements of para 5 or fenestration, insulation, and air leakage applicable to the portions of the buildings and its systems being altered.

Exception to para 4.1.4.1:

The following alterations need not comply with these requirements provided such alterations do not increase the energy usage of the building:

- (a) Replacement of glass in an existing sash and frame, provided the U-factor and SHGC (Solar Heat Gain Coefficient) of the replacement glazing are equal to or lower than the existing glazing.
- (b) Modifications to roof/ceiling, wall or floor cavities, which are insulated to full depth with insulation.
- (c) Modifications to walls and floors without cavities and where no new cavities are created.

4.1.4.2 Heating, Ventilation and Air Conditioning

Alterations to building heating, ventilating and air-conditioning equipment or systems shall comply with the requirements of para 6 applicable to the portions of the building and its systems being altered. Any new equipment or control devices installed in conjunction with the alteration shall comply with the specific requirements applicable to that equipment or control device.

4.1.4.3 Service Water Heating, renewable energy

Alterations to building service water heating equipment or systems shall comply with the requirements of para 7 applicable to the portions of the building and its systems being altered. Any new equipment or control devices installed in conjunction with the alteration shall comply with the specific requirements applicable to that equipment or control device.

4.1.4.4 Lighting

Alterations to building lighting equipment or systems shall comply with the requirements of para 8 applicable to the portions of the building and its systems being altered. New lighting systems, including controls, installed in an existing building and any change of building area type as listed in Table 8.1 shall be considered an alteration. Any new equipment or control devices installed in conjunction with the alteration shall comply with the specific requirements applicable to that equipment or control device.

Exception to para 4.1.4.4: Alterations that replace less than 50% of the luminaries in a space need not comply with these requirements provided such alterations do not increase the connected lighting load.

4.1.4.5 Electric Power and Motors

Alterations to building electric power systems and motor shall comply with the requirements of para 9 applicable to the portions of the building and its systems being altered. Any new equipment or control devices

installed in conjunction with the alteration shall comply with the specific requirements applicable to that equipment or control device.

4.2. *Compliance Approaches*

The building shall comply first with all the mandatory provision (para 5.2, para 6.2, para 7.2, para 8.2 and para 9.2 and either of the following:

- (a) Prescriptive Method (para 5.3, para 6.3, para 7.3)

Exception to para 4.2: The envelope trade-off option of para 5.4 may be used in place of prescriptive criteria of para 3.3.

- (b) Whole Building Performance Method (Appendix B para 11)

4.3. *Compliance Documents*

4.3.1 *General*

Plans and specifications shall show all pertinent data and features of the building, equipment, and systems in sufficient detail to permit the local body to verify that the building complies with the requirements of this code. Details shall include, but are not limited to:

- (a) Building Envelope:— Insulation materials and their R-values; fenestration U-factors, Solar Heat Gain Coefficients (SHGC), visible light transmittance (if the trade-off procedure is used), and air leakage; overhangs and side fins, building envelope sealing details.
- (b) Heating, Ventilation, and Air conditioning system and equipment types, size/capacity, efficiencies, and controls; economizer; variable speed drives; piping insulation; duct sealing; insulation type and location; requirements for balance report.
- (c) Service Hot Water and Pumping and renewable energy installation: Solar water heating system and installation of renewable energy gadgets.
- (d) Lighting: lighting schedule showing type, number, and wattage of lamps and ballasts; automatic lighting shut off; occupancy sensors, and other lighting controls; lamp efficacy for exterior lamps.
- (e) Electrical Power: electric schedules showing transformer losses, motor efficiencies, and power factor correction devices, electric check metering and monitoring system.
- (f) Abstract of the building information as per Appendix-H para 17.

4.3.2 *Supplemental Information*

The State Designated Agency may require supplemental information necessary to verify compliance with this code, such as calculations, worksheets, compliance forms, manufacturer's literature, or other data.

4.4 *Safety, Health and Environmental Codes Take Precedence.*—Where this Code is found to conflict with safety, health, or environmental codes, the safety, health, or environmental codes shall take precedence.

5. *Envelope*

5.1. *General*

The building envelope shall comply with the mandatory provisions of para 5.2 and either the prescriptive criteria of para 5.3 or the trade-off option of para 5.4.

5.2 *Mandatory Requirements*

5.2.1 *Fenestration*

5.2.1.1 *U-factors*

U-factors shall be determined for the overall fenestration product (including the sash and frame) in accordance with ISO-15099, as specified in Appendix C para 12, by an independent laboratory, labeled and certified by the manufacture or other responsible party. U-factor for sloped glazing and skylights shall be determined at slope of 20 degrees above the horizontal. For unrated products, use the default table in Appendix C para 12.