



Ministry of Power
Government of India

सत्यमेव जयते

ECO-NIWAS SAMHITA 2018

(Energy Conservation Building Code for Residential Buildings)

PART I: BUILDING ENVELOPE



BUREAU OF ENERGY EFFICIENCY (BEE)

(Ministry of Power, Government of India)

Website: www.beeindia.gov.in



OVERVIEW

India is witnessing a spate of constructions, a large number of which are residential buildings. The residential building sector is expected to double in terms of floor area by 2030 from the 2017 level. Residential buildings, today, account for nearly 25% of the total electricity consumed in the country. With increasing construction and affordability of air-conditioning, residential buildings will soon become the highest consumer of electricity, consuming about 37% of the total electricity consumption by 2030.

With the aim of improving thermal comfort and energy conservation in residential buildings, the Energy Conservation Building Code for Residential Buildings, also called as Eco-Niwas Samhita 2018, is being launched by the Ministry of Power, Govt. of India. Part I of the code focuses on minimum building envelope performance standards to limit heat gains (for hot climates) and to limit heat loss (for cold climates), as well as for ensuring adequate natural ventilation and daylighting potential.

CODE PROVISIONS

The code sets minimum building envelope design standards, to:

- Limit heat gain/loss.
 - Maximum value of residential envelope transmittance value (RETV)¹, for building envelope (excluding roof) for all climate zones except cold climate
 - Maximum value of thermal transmittance (U-value), for building envelope (excluding roof) for cold climate
 - Maximum value of thermal transmittance (U-value) of roof
- Improve natural ventilation potential
 - Minimum openable window-to-floor area ratio
- Improve daylight potential
 - Minimum visible light transmittance (VLT) of glass with respect to window-to-wall ratio



¹ RETV is the net heat gain rate (over the cooling period) through the building envelope [excluding roof] of the dwelling units divided by the area of the building envelope [excluding roof] of the dwelling units.

CODE IMPACT

Huge potential for energy saving and GHG emission reductions

- Minimum 20% energy saving (in cooling) as compared to a typical building
- Estimated 125 billion kWh of electricity saving for the period 2018–2030
- About 100 million tonnes of CO₂ equivalent abatement for the same period

Benefits for home owners and users on implementation of code

- Improved thermal comfort
- Reduced electricity bills
- Healthier environment

CODE IMPLEMENTATION

The code is developed by the BEE on voluntary basis and its enforcement lies with the state governments and urban local bodies. The BEE, along with its partner agencies, would help states in implementing the code through programmes on awareness, training, and capacity building for authorities and other key building sector stakeholders.

An online compliance tool for code is available.



About the Code

Eco-Niwas Samhita has been developed by Bureau of Energy Efficiency (BEE), Ministry of Power, with technical support from the Indo-Swiss Building Energy Efficiency Project (BEEP). The development process was a participative exercise overseen by a steering committee and a technical committee. These committees had representation from building energy experts, academic institutions, national standards bodies, industry bodies etc.

About Bureau of Energy Efficiency

BEE is a statutory body under the Ministry of Power, Government of India. It assists in developing policies and strategies with the primary objective of reducing the energy intensity of the Indian economy. BEE coordinates with designated consumers, designated agencies, and other organizations to identify and utilize the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act.

About the Indo-Swiss Building Energy Efficiency Project

The Indo-Swiss Building Energy Efficiency Project (BEEP) is a bilateral cooperation project between the Ministry of Power, Government of India, and the Federal Department of Foreign Affairs of the Swiss Confederation. The overall goal of the project is to reduce energy consumption in new commercial, public, and residential buildings in India through energy-efficient and thermally comfortable design. The project has four key components: building design, building technologies, building policy, and outreach.



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