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ENERGY DEPARTMENT

NOTIFICATION

The 31st October 2022

No. 10431—ENG-ESIEC-EC-0001-2021/En.—In exercise of the powers conferred by clause (a) of sub-section (2) of Section 57 read with clause (a) of section 15 of the Energy Conservation Act 2001 (52 of 2001) and in supersession of the Odisha Energy Conservation Building Code, 2011 except in respect of the things done or omitted to be done before such suppressions, the State Government in consultation with Bureau of Energy Efficiency do hereby make the following Codes, namely:-

CHAPTER-I PRELIMINARY

1. **Short title and commencement.**—This Code may be called the Odisha Energy Conservation Building Code, 2022.

It shall come into force on the date of their publication in the Odisha Gazette.

2. **Definitions.**— In this Code, unless the context otherwise requires,

(1) “**above grade area**” means the cumulative floor area of all the floor levels of a building that are above the ground level as defined in building site plan and floor level is above grade if one-third of the total external surface area of only the said floor level is above the ground level;

- (2) **“accredited independent laboratory”** means testing laboratory not affiliated with producer or consumer of goods or products tested at the laboratory and accredited by national or international organizations for technical competence;
- (3) **“Act”** means The Energy Conservation Act, 2001 (52 of 2001);
- (4) **“addition”** means an extension or increase in floor area or height of a building outside of the existing building envelope;
- (5) **“air conditioning and condensing units serving computer rooms”** means air conditioning equipment that provides cooling by maintaining space temperature and humidity within a narrow range. Major application is in data centres where dissipating heat generated by equipment takes precedence over comfort cooling for occupants;
- (6) **“alteration”** means any change, rearrangement, replacement, or addition to a building or its systems and equipment; any modification in construction or building equipment;
- (7) **“area weighted average (AWA) method”** means a method based on the concept of weighted arithmetic mean where instead of each data point contributing equally to the final mean, each data point contributes more “weight” than others based on the size of the area the said data point is applicable to and to calculate the area weighted average mean, a summation of each data point multiplied with its respective area is divided with the total area i.e.,
- $$AWA = \sum \frac{(\text{Data Point} \times \text{Area})}{\text{Total Area}}$$
- (8) **“astronomical time switch”** means an automatic time switch that makes an adjustment for the length of the day as it varies over the year;
- (9) **“authority having jurisdiction”** means the agency or agent responsible for enforcing this Standard;
- (10) **“balancing, air system”** means adjusting airflow rates through air distribution system devices, such as fans and diffusers, by manually adjusting the position of dampers, splitters vanes, extractors, etc., or by using automatic control devices, such as constant air volume or variable air volume boxes;

- (11) **“balancing, hydronic system”** means adjusting water flow rates through hydronic distribution system devices, such as pumps and coils, by manually adjusting the position valves, or by using automatic control devices, such as automatic flow control valves;
- (12) **“ballast”** means a device used in conjunction with an electric-discharge lamp to cause the lamp to start and operate under proper circuit conditions of voltage, current, waveform, electrode heat, etc;
- (13) **“standard design”** means a computer model of a hypothetical building, based on actual building design, that fulfils all the mandatory requirements and minimally complies with the prescriptive requirements of Energy Conservation building Code;
- (14) **“boiler”** means a self-contained low-pressure appliance for supplying steam or hot water;
- (15) **“building or building complex or complex”** means a structure wholly or partially enclosed within exterior walls, or within exterior and party walls, and a roof, affording shelter to persons, animals, or property. Building complex means a building or group of buildings constructed in a contiguous area for business, commercial, institutional, healthcare, hospitality purposes or assembly buildings under the single ownership of individuals or group of individuals or under the name of a co-operative group society or on lease and sold as shops or office space or space for other commercial purposes, having a connected load of 100 kW or contract demand of 120 kVA and above;
- (16) **“building, base”** means includes building structure, building envelope, common areas, circulation areas, parking, basements, services area, plant room and its supporting areas and, open project site area;
- (17) **“building, core and shell”** means buildings where the developer or owner will only provide the base building and its services;
- (18) **“building, existing”** means a building or portion thereof that was previously occupied or approved for occupancy by the authority having jurisdiction;
- (19) **“building envelope”** means the exterior plus the semi-exterior portions of a building. For the purposes of determining building envelope requirements, the classifications are defined as follows:-

- (a) Building envelope, exterior: the elements of a building that separate conditioned spaces from the exterior;
 - (b) Building envelope, semi-exterior: the elements of a building that separate conditioned space from unconditioned space or that enclose semi-heated spaces through which thermal energy may be transferred to or from the exterior, or to or from unconditioned spaces, or to or from conditioned spaces;
- (20) **“building grounds lighting”** means lighting provided through a building’s electrical service for parking lot, site, roadway, pedestrian pathway, loading dock, and security applications;
- (21) **“building material”** means any element of the building envelope through which heat flows and that heat is included in the component U-factor calculations other than air films and insulation;
- (22) **“built up area (BUA)”** means sum of the covered areas of all floors of a building, other than the roof, and areas covered by external walls and parapet on these floors;
- (23) **“24-hour Business Building”** means business building operated and occupied for more than 12 hours on each weekday. Intensity of occupancy may vary;
- (24) **“cardinal direction”** means cardinal directions or cardinal points are the four main directional points of a compass: north, south, east, and west which are also known by the first letters: N,S,E, and W;
- (25) **“carpet area”** means net area measured between external walls, from the inner faces of walls. Thickness of internal or partition walls is excluded;
- (26) **“centralized control”** means single hardware/ software for observing and controlling operations of a group of equipment and devices with similar or different functions;
- (27) **“circuit breaker”** means a safety device that automatically stops flow of current in electrical circuits. It protects the circuit from current surge;
- (28) **“class of construction”** means classification that determines the construction materials for the building envelope, roof, wall, floor, slab-on-grade floor, opaque door, vertical fenestration, skylight;

- (29) **“coefficient of Performance (COP)-cooling”** means the ratio of the rate of heat removal to the rate of energy input, in consistent units, for a complete refrigerating system or some specific portion of that system under designated operating conditions;
- (30) **“coefficient of Performance-heating”** means the ratio of the rate of heat delivered to the rate of energy input, in consistent units, for a complete heat pump system, including the compressor and, if applicable, auxiliary heat, under designated operating conditions;
- (31) **“common area”** means an areas within a building that are available for use by all tenants in a building (i.e. lobbies, corridors, restrooms, etc.);
- (32) **“commercial building”** means a building or a part of building or building complex which are used or intended to be used for commercial purposes and classified as per the time of the day the building is operational and sub classified, as per the functional requirements of its design, construction, and use as per following details;
- (i) Group I – 24 hours building covering Type A Hospitality, Type B Health Care and Type C Assembly and,
 - (ii) Group II – Regular building covering Type D Business, Type E Educational and Type F Shopping Complexes;
- (33) **“compliance documents”** means the forms specified in Energy Conservation Building Code Rules and Regulations to record and check compliance with these rules. These include but are not limited to Energy Performance Index (EPI) Ratio Compliance Report, Building Envelope Compliance Form, Mechanical Systems Compliance Form and Permit Checklist, Lighting System Compliance Form and Permit Checklist and certificates from Certified Energy Auditor for existing or proposed buildings;
- (34) **“connected load”** means the sum of the rated wattage of all equipment, appliances and devices to be installed in the building or part of building or building complexes, in terms of kilowatt (kW) that will be allocated to all applicants for electric power consumption in respect of the proposed building or building complexes on their completion;
- (35) **“contract demand”** means the maximum demand in kilowatt (kW) or kilo Volt Ampere (kVA) (within a consumer’s sanctioned load) agreed to be supplied by the electricity