
Government of Karnataka**No.UDD/75/GEL/2021(P-5)(e)**

Karnataka Government Secretariat
Vikasa Soudha,
Bangalore, Date: 05.02.2025

NOTIFICATION-II

The draft of the following bye-laws further to amend the Karnataka Municipalities Model Building Bye-Laws, 2017 which the Government of Karnataka proposes to make in exercise of the powers conferred by Sub-section (1) of Section 325 of the Karnataka Municipalities Act, 1964 (Karnataka Act 22 of 1964) has been published in the State Gazette Vide Notification No.UDD 75 GEL 2021(P-5)(e) dated 11th July 2024 in Part-IVA of the Karnataka Extraordinary Gazette inviting objections and suggestions from all persons likely to be affected thereby within one month from the date of its publications in the Official Gazette.

And whereas the said Gazette was made available to public on 11th July 2024 and whereas the objections and suggestions received are considered by the State Government.

Now therefore, in exercise of powers conferred under Sub-section (1) of Section 325 of the Karnataka Municipalities Act, 1964 (Karnataka Act 22 of 1964) the State Government notifies the following Rules/ Bye-Laws namely.

MODEL BUILDING BYE-LAWS

1. Title, commencement and applicability.- (1) These bye-laws may be called the Karnataka Municipalities Model Building (Amendment) Bye-Laws, 2024.

(2) They shall come into force from the date of their final publication in the official Gazette.

2. Insertion of new chapter 17.- In the Karnataka Municipalities Model Building Bye-Laws, 2017, after chapter 16 and entries relating thereto, the following shall be inserted, namely;-

"CHAPTER 17**Digital Communication**

17. Provisions for In-building solutions for Digital Communication Infrastructure:- For Internet traffic and Apps to grow even further, conventional connectivity needs to be replaced with duct-sharing and fiber, as an essential requirement In-building. Based on type of building and profile of customers in the buildings, the needs of wired and wireless may vary. In order to improve In-building coverage and to offer better-quality high-speed data services, there is a definite

need to install In-building solutions (IBS) for augmenting the wireless-based voice and data services.

A broad variety of Information Communication Technology (ICT) systems are to be installed in the buildings. In order to facilitate proper cabling and installation or up-gradation of the Information Communication Technology (ICT) systems and their cost effectiveness and maintenance, adequate physical infrastructure is required within buildings. This infrastructure shall include common ducts, cable riser systems, conduits, cable trays and utility closets etc. among other things. The same may also be retro-fitted into existing buildings wherever possible and feasible and shall be designed in all new, re-developed and renovated structures.

Space, power and earthing are required for installation of common ducts, optical fiber, small cells, antennas, smart sensors etc. as well as electronic equipment installation for supporting the various digital technologies of now and the future. In some cases, state-of-the-art communication cabling or equipment may involve new or more specific requirements for utility spaces, namely:-

- (i) cable routing layout and cable length restrictions between work-space and utility closet;
- (ii) bending radius and working clearance requirements for different cable types, e.g. Fiber-optic cables, Cat-6 cables and co-axial cables;
- (iii) isolated power circuits for permanent communication equipment; and
- (iv) Protection, safety, grounding and environmental requirements of communication equipment.

This chapter specifies the general and specific requirements of such an Information Communication Technology (ICT) infrastructure in the buildings, especially in respect of cabling aspects.

Note: For the purposes of this chapter,-

“Service Provider” means an agency that provides any type of telecom or IT services in the building complex, as per scope defined by the Department of Tele-communication (TSP/ISP/IP1 etc.).

17.1. Emerging technologies in Tele-communication services.- It is necessary to install 5G and Wi-Fi hotspots along with Fibre to x (FTTX) distribution network of fibre and Cat-6 Cables for seamless data connectivity.

Providing telecom services and broadcasting services viz. Cable TV, DTH and Security Services i.e. CCTV cameras and futuristic services like IoT-based sensors require suitable wire line connectivity inside the buildings. In-side buildings are not confined to wireless medium only. Wire line services through cables such as copper cables, optical fibre cables (OFC), LAN, Cat-6 cables are also required for

uninterrupted connectivity. Also, for services such as Cable TV, DTH and Smart Devices Solutions (IoT), suitable cabling within building premises is a pre-requisite and for that, shared duct space across the building riser and floors is critical to achieve the flexibility in the future. Hence, improved IBS coverage MNOs or Network operators shall be allowed to install such appropriate instruments as provided by the licensor or regulator from time to time.

17.2. Policy efforts.- (1) The National Digital Communications Policy, 2018 proposes to make the installation of telecom infrastructure and associated cabling and in-building solutions mandatory in all commercial, residential and official buildings (including Government buildings) by amending the National Building Code of India with Co-ordination of the Bureau of Indian Standards.

(2) The Government policy and regulatory push coupled with the ever-expanding data usage has propelled TSPs or IP-1s to scale up the deployment of IBS. Hence, there is an urgent requirement to allow TSPs or IP-1s to own active built and manage active infrastructure in addition to passive infrastructure to help them cater to the ever-increasing data demand.

(3) The Bureau of Indian Standards (BIS) has framed National Building Code of India, under which provision of Common Telecom Infrastructure (CTI) housed inside the buildings for convenient provision of telecom services has been envisaged.

17.3. Incorporation in the building bye-laws of the State.- (1) The buildings shall be constructed in such a way that they shall be Digital Infrastructure deployment or Digital Connectivity ready. There shall be provision of telecom ducts or common pathways or runways (digital access paths) to reach to the accessible parts of the buildings. The common ducts or digital access paths to access buildings from outside shall invariably be part of the Common Telecom Infrastructure (CTI), which may be used by TSPs or IP-1s for laying or deploying digital infrastructure including cables. While approving the building plans, it shall be ensured that plan for creation of Common Telecom Infrastructure (CTI), including the common duct to access the common space used as telecom room inside the building is also prepared and separate set of drawings showing the inter or intra connectivity access to the building with distribution network are furnished.

(2) Occupancy or Completion certificate to a building shall be granted only after ensuring that the Common Telecom Infrastructure (CTI), as per the specified standards is in place and an undertaking shall be obtained from the Architect certifying that the building has ensured common access to all digital infrastructure to all service providers in accordance with plan of creation of Common Telecom Infrastructure (CTI).

(3) The Provision of visit from the Department of Telecom or TRAI officials along-with joint inspection with TSPs, who may suggest any relevant modification in the plan shall be ensured.

17.4. The builder or RWA shall ensure that.- (1) Properly demarcated sections within buildings and on roof tops for housing broad band or digital connectivity infrastructure or antenna shall be submitted while submitting the building plans. These areas shall have access to power supply for reliable and always –on services.

(1) Access to building as well as Common Telecom Infrastructure (CTI) facilities inside the building shall be available on a fair, transparent and non-discriminatory manner to all service providers or IP1's.

(2) The service providers or IP1's shall have unrestricted access for maintenance work.

(3) Permission to in-building access and /or Common Telecom Infrastructure (CTI) facilities inside the building shall not be seen as a source of revenue generation for builder or RWA, but as a means for facilitating penetration of broadband access and thereby helping in socio-economic growth of all the residents.

(4) Charge (rentals or power rates etc.) levelled to the TSPs or IP1s shall be fair, transparent and non-discriminatory and shall be on residential rates.

(5) Common Telecom Infrastructure (CTI) shall be created inside the newly constructed public places like Airports, commercial complexes and residential complexes.

17.5. At layout level.- (1) While developing Greenfield cities or towns, the layout plans shall clearly indicate the telecom as utility infrastructure lines and standardization of the utility coding and sequences as published by the respective Department shall be followed. The placement and sequence of above-ground and below-ground utilities at the appropriate location in the right-of-way shall be ensured for unconstrained movement as well as easy access for maintenance. Telecommunication cables shall be placed in a duct which can be accessed at frequent service points with sufficient spare capacity to enable scaling and future expansion and empty pipes (large size home pipes or HDPE pipes) shall be laid before planting trees, in order to accommodate additional infrastructure.

(2) The existing and new buildings shall be rated on standardized parameters such as but not limited to; Digital Infrastructure access, provisions for Emerging Technologies, Maintenance and Operational ease to TSPs or IPv1, Quality of Wireless Services, Quality or Inter-changeability ease of wire line Services till each Unit Security, redundancy and Expandability of the digital Infrastructure etc., as per the Digital Readiness Rating of Buildings Society in line to the GREEN ratings created by the concerned department.

(3) All the new or retro-fitting of buildings or societies shall be benchmarked with detailed rating parameters and calculation mechanism of Points or Stars as devised by the concerned department.

(4) Digital Assets repository to ensure proper planning and mapping of utilities through GIS shall be required to identify the alignments of telecommunication cables. Design criteria and standard utilities shall meet the following criteria, namely:-

(i) Telecommunication cables shall be placed below the parking area or service lane, which may be dug up easily without causing major inconvenience. Where this is not possible, the cables shall be placed at the outer edge of the right-of-way;

(ii) There is a need to reduce conflicts with pedestrian movements is to place telecom boxes in easements just off the right-of way. Where this is not possible, they shall be placed within parking or landscaping areas. If cables have to be located in the pedestrian path, a space of at least 2 metres shall be maintained for the movement of pedestrians. Telecom boxes shall never constrain the width of a cycle track; and

(iii) In order to minimize disruptions, cables shall be installed with proper maintenance infrastructure.

17.6. Procedure for setting up In-building solution (IBS) or Fiber Networks.- There is a need promote installation of In-building solution (IBS) or Smart Connectivity Infrastructure, where there is a poor connectivity in terms of weak signal strength inside the office, shopping mall, hospitals, multi-story building, education institution and the objective is to strengthen the quality of service of the voice and data of mobile and fiber broadband network and access to digital services being offered by TSP and IP1's.

(1) Procedure for obtaining IBS-NOC during plan approval and completion:

(a) While submitting the proposed building plan seeking approval from the relevant sanctioning Authority, applicant shall submit the following, namely:-

- (i) a complete service plan for IBS-Infrastructure along with required specifications, in consultation with and certified by a credible Telecom Networking hardware-consultant;
- (ii) an undertaking that such IBS Infrastructure, when constructed shall be available for sharing by various TSPs or IP-1s;
- (iii) the service plan (IBS) shall be forwarded by the concerned Local Authority to the Telecom Enforcement Resource and Monitoring (TERM) cell of the State (external NCC agency) for approval; and
- (iv) during the Joint site inspection of the completed building structure the Telecom Enforcement Resource and Monitoring (TERM) cell

shall undertake inspection of constructed or installed IBS Infrastructure for issuance of NOC for OCC.

(b) The Local Authority shall liaise with the Telecom Enforcement Resource and Monitoring (TERM) cell as per its relevant online or offline process of communication to seek the relevant NOC within the specified time as per the Service Charter or Service Guarantee Act and rules for time being in force. Separate communication from the applicant shall be needed to secure the NOC for IBS.

(2) The Provision of IBS components in building premises (as per NBC 2016):

- (i) Entrance Facilities (EF) or Lead-in conduits: minimum 1.2m X 1.83m space shall be allocated for each TSP adjacent to the EF (as specified under clause 3.1.4 of Part 8 of section 6).
- (ii) Underground conduits or pipes to MDF room: minimum 100mm diameter encased conduits shall be provided.
- (iii) Main Distribution Frame (MDF) or Equipment Room(ER): shall have the following specifications (as specified under clause 3.1.2 of Part 8 of section 6), namely:-
 - (a) specified size with Law ratio between 1:1 to 2:1;
 - (b) appropriate ventilation of MDF room;
 - (c) proper lighting for vision of equipments; and
 - (d) Located at a level above form the Natural Ground level to avoid incidence of flooding.
 - (e) Electric distribution panel, isolators, sockets and earthling as per specific requirements with respect to the area proposed for coverage (DUs or service subscribers)
- (iv) Telecommunication Room (TR) at each building block unless provided with MDF room: all provisions of space shall be as specified under clause 3.1.3.2 of Part 8 of section 6).
- (v) Appropriate number of Service or Telecom risers (vertical shafts) for all multi-storeyed building with respect to the area proposed for coverage (DUs/service subscribers) shall be provided with appropriate number and size (width and depth) to accommodate cable trays and with access door at each floor.
- (vi) Telecommunication Enclosures (TE) at each floor of a block or TR shall be provided as specified under clause 3.1.5 of Part 8 of section 6.

- (vii) Telecom Media and Connecting Hardware (TE): shall be provided as specified under clause 3.2 of Part 8 of section 6.
- (viii) Various cabling system and trays: shall be provided as specified under clause 3.2.4 of Part 8 of section 6.
- (ix) Wireless systems: shall be provided as specified under clause 3.2.5 of Part 8 of section 6.
- (x) Backbone Cabling Media Distribution and Building Pathways: shall be provided as specified under clause 3.3 of Part 8 of section 6.
- (xi) Horizontal Cabling Media Distribution and Building pathways: shall be provided as specified under clause 3.4 of Part 8 of section 6.

17.7. IBS installation spaces: Area for rooms or systems (e.g. antennas, base stations, remote units, power distribution boxes etc.) shall be provided as per requirements with respect to the area proposed for coverage or number of proposed users, as specified under clause 3.1.3.2 of Part 8 of section 6 and the Tables below:-

Telecom room space norms:

- (a) for buildings with built-up area more than 465 sq m:

Sl No	Area to be covered by IBS	Size of Telecom Room (all dimension in m)
1	Upto 465 sq.m	3.0 X 2.4
2	From 465 sq.m to 930 sq.m	3.0 X 3.4
3	More than 930 sq.m	Additional TR required with same space norms

- (b) for smaller buildings with built-up area less than 465 sq m:

Sl No	Area to be covered by IBS	Space provisions (all dimensions in m)
1	Upto 93 sq.m	Wall cabinets, self-contained enclosed cabinets.
2	From 93 sq.m to 465 sq.m	shallow room - 0.6 X 2.6
		walk-in room - 1.3 X 1.3

The IBS Installation spaces, so provided, shall,-

- (i) not be susceptible to flooding;
- (ii) not be exposed to water, moisture, fumes, gases or dust;
- (iii) be able to withstand designed equipment load and shall be specified in the design; and

(iv) be located away from any vibrations to avoid dislocation or dislodgement.

Note: For any other necessary detailing of building components and service installations with respect to common Telecom or Digital connectivity Infrastructure, architects or developers and other service consultants involved in preparing building and service drawing may refer Part 8 of section 6 of Information and Communication Enabled Installations of Volume 2 of the National Building Code, 2016.

17.8. Mode of deployment of In-building, FTTx or IP Solution.- Various modes of deployment of In-building solutions shall be provided, such as, deployment by a neutral host infrastructure provider or built and managed by mobile operator and sharing with other service providers on non-discriminatory basis. The In-building Solution (IBS), FTTx or IP Solution may also be deployed by TASPs or IPs. If the TSP or IP1 requires installing optical fiber for connecting In-building Solution (IBS) or Distributed Antenna System (DAS) nodes or FTTx solutions, Right of Way or permission shall be granted by the road owning agency through online mode (if same is working seamlessly) or offline mode till online system is established. For deploying indoor solutions these companies shall have deemed permissions from the owners of premises for installation of distribution network within the utility shafts or common spaces with provisions for common or shared points of interconnect for connectivity to individual units.

17.9. Permissibility.- The IBS, FTTx or IP component being small equipment, may be installed on any type of land or building or utility pole and is exempted from obtaining permission for installation of these components from the respective Urban Local Body or Urban Development Authority, but permission from the Administrative Authority of the concerned premises shall be obtained.

17.10. Procedure for submitting application for obtaining clearance.- TSP or IP-1 shall apply to the administrative authority of the building or head of the office, with layout diagram for implementing IBS in the building as specified in the Indian Telegraph Right of Way Rules, 2016 or the State notified RoW policy.

17.11. Fee.- No fee shall be charged for IBS or FTTx Network. Charges may be levied for power, as per industry tariffs, fixtures, etc., provided by the building owners to TSP or IP-1s as per actual rates.

17.12. Access and Distribution.- Fiber and IP or LAN networks for connectivity for the shopping mall, multi-storey residential building, cooperative housing society, residential welfare association and commercial building shall be planned and deployed by TSP or IP-1s as per standard requirements of providing high bandwidth and adequate Indoor coverage to each unit or apartment in these complexes.”

By Order and in the Name of
the Governor of Karnataka

(Satish Kabadi)

Under Secretary to Government,
Urban Development Department.
(MA-2 and Boards)

ABBREVIATION

1. CCTV Close Circuit Television
2. CTI Common Telecommunication
3. DoT Department of Telecommunication
4. FTTX Fiber to X Fiber
Fiber to Home (FTTH)
Fiber to Premises (FTTP)
Fiber to Building (FTTB)
Fiber to Node (FTTN)
Fiber to Curb/Cabinet (FTTC)
5. GDP Gross Domestic Product
6. IBS In Building solutions
7. ISP Internet Service Provider
8. MBIT Megabit
9. OFC Optic Fiber Communication
10. QoS Quality of Service
11. RWA Residential Welfare Association
12. TRAI Telecom Regulatory Association of India
13. TSP Telecom Service Provider